

Scottish Water Gairloch Stakeholder Group

Meeting Minutes

Date of Meeting: Tuesday 17 July 2018

Location: Celt Room, Gairloch Community Centre

Present:

Chair	Jon Rathjen, Scottish Government (JR)
Gairloch Community Representatives	Dr Karen Buchanan (KB) Alex Gray (AGr) Iain McWhinney (IMcW)
Highland Council	Cllr Derek MacLeod (DM) Robbie Bain, Ward Manager (RB)
SEPA	Alistair Galloway (AGa)
Scottish Water	Alan Thomson (AT) Iain Jones (IJ) Stephan Walker (SW) Gavin Steel (GS)
m ² technical consultant	Judy Anderson (JA)

Apologies:

Gail Ross MSP, John Port, Cllr Ian Cockburn

Minutes

1. Welcome

Jon Rathjen welcomed members, introduced himself, explained his role and gave apologies on behalf of Gail Ross MSP.

2. Introductions and apologies

Members present introduced themselves. GS noted the apologies that had been received.

3. Scottish Water Opening Remarks

AT apologised on behalf of Scottish Water that it had not engaged successfully with the community at an earlier stage in order to address the concerns that had been raised about its proposals for Gairloch Waste Water Treatment Works (WWTW). He explained that Scottish Water was keen to share information via the Stakeholder Group and hoped it would be a forum for all sides to gain a common understanding of the issues in order to agree an acceptable way forward.

AT tabled the draft Terms of Reference for the Group which had been circulated via email in advance of the meeting.

AGr noted that the draft Terms of Reference did not include reference to the community's aspirations, which had been discussed with AT and GS at an earlier, informal meeting. In particular, the document referred to regulatory compliance, which community representatives felt reflected Scottish Water seeking to do the minimum that is required.

AT responded that this was not the intention of the Terms of Reference, although achieving regulatory compliance was a necessary minimum that Scottish Water had to achieve.

It was agreed that draft minutes of meetings would be circulated and approved by email in order to allow them to be shared with Gairloch Community Council and with the wider community on a reasonable timescale.

Action 1: Scottish Water to review Terms of Reference to reflect that the Group's remit includes meeting regulatory requirements, but does not exclude options which exceed them.

Action 2: Scottish Water to circulate draft minutes for members' review and approval via email discussion.

4. Community Representatives' Opening Remarks

IMcW outlined that the community representatives wished to maintain the best possible water quality for the area, reflecting the importance of the sea to fishing, tourism, recreation and day-to-day life for residents.

KB added that she felt it was important for SEPA's decision-making to take account of the impact on the local economy. AGr recalled that the SEPA appraisal of Scottish Water's application to amend its discharge licence had explicitly stated that it did not take social and economic impact into account.

KB noted that the warm weather in the late spring of 2018 had resulted in significant water use outside the period from May to September which was treated as the Bathing Season for the purposes of the bathing waters designations. AGr added that use of the water occurred all year round.

AGr noted that there had been previous discussions with Scottish Water and that questions and information that the community had requested had not always been provided.

GS recognised that this had been a frustration and apologised. Scottish Water hoped the Stakeholder Group would allow a better record to be kept of discussions and any actions to be followed up methodically.

5. Overview of Environmental and Bathing Water position and SEPA's expectations

AGa gave a presentation of SEPA's current view of water quality in Loch Gairloch and the considerations relevant to its remit. **(See slides)**

DM asked for clarification about SEPA's monitoring of 'end of pipe' effluent at Gairloch WWTW. AGa explained that monitoring of bacteria levels had been reinstated over the previous several sampling periods, reflecting the relevance of this to the designated bathing waters.

KB noted reference in SEPA and Scottish Water's Sustainable Growth Agreement to maximising economic benefit. She did not feel this was reflected in SEPA's letter to the community following its determination of Scottish Water's previous application. AGa explained that SEPA's first focus is on water quality measures. He accepted that economic and social impacts were not as integral to the licensing process.

AGr felt that SEPA's determination was of limited relevance to discussions as the regulator was primarily there to provide assurance on a minimum standard. He regretted that SEPA wasn't required to reflect social and economic issues more strongly, but felt this meant the community and its representatives had to engage directly in order to achieve its objectives beyond the minimum identified.

DM asked if sampling to date at Gairloch WWTW reflected any deterioration in the standard of effluent. AGa indicated that it was still comfortably meeting the standard which had previously been set.

DM noted reference in the Sustainable Growth Agreement to minimising energy use and sought clarification on the benchmark for this. JR outlined that previously around £50m per annum had been spent by Scottish Water on buying electricity. Installing renewable generation and efficiency measures had achieved significant improvement, but it was still desirable to reduce energy usage where possible. The largest uses of energy were typically in pumping water and waste water; and in aeration of major treatment works.

RB asked about the biological conditions of Loch Gairloch and levels of bacteria in the winter when water was cooler. AGa explained that this was not currently monitored in general. As well as water temperature, other factors would be expected to have an impact such as increased run-off from land and any operation of storm overflows.

AGr noted that there was a lack of baseline water quality sampling throughout the year. JR explained that sampling was expensive and was therefore targeted in areas where statutory water quality drivers apply.

6. Overview from Scottish Water of Gairloch WWTW, its operation and long term objectives

SW gave a presentation about the existing Gairloch WWTW and its operation **(See slides)**

DM asked about the issue described with fouling at the WWTW. SW explained how this occurs and the impact it has on the membranes' ability to pass required flows. DM asked if upstream screening was in place and was sufficiently fine. SW explained that there was screening upstream of the membranes which reflected standards at the time of installation. On the basis of industry experience since, a finer screen would be used.

AGr asked why fouling is greater than anticipated. SW explained that the view taken in 2002 was based on industry understanding of what was then a relatively new technology, informed mainly by early deployment in the UK by Wessex Water. A number of differences had become apparent, including particular challenges in coastal locations due to the influence of salinity. AGr noted that members of the community had highlighted salinity as a potential problem due to the location of the network when the plant was first built.

AGr asked if the sister WWTW installed at Cromarty faces the same issues to the same extent. SW confirmed that it does face the same issues, but to a lesser extent with saline due to the characteristics of the network. SW noted that Scottish Water also had experience in the Highlands of operating Membrane Bioreactors at Fortrose and at Sunnyside, near Culloden. Fortrose had faced issues with saline and with freshwater intrusion and had been replaced with a more conventional treatment technology as a result. Sunnyside was at an inland location with no saline issues, but had still experienced problems in operation and had also been replaced.

AGr asked if the WWTW would be replaced at Cromarty. IJ noted that the future of Cromarty was currently under early consideration and it was expected that proposals would be developed in the years ahead. SW noted some differences in environmental parameters for Cromarty due to presence of designations linked to nearby shellfish waters and the bottlenose dolphin population in the Moray Firth.

DM felt that saline incursion was a major contributory factor to the problems experienced at Gairloch. He asked whether remedying saline intrusion wouldn't be the most cost efficient solution. SW explained that efforts had been made and were continuing by Scottish Water to locate and repair any major sources of saline intrusion. There remained an issue, but it was not the only operational challenge experienced at the WWTW. AGr felt it was surprising that the drainage network could not be completely sealed. JA explained that m² work to date suggested the influence of saline intrusion had been reduced, but there was still some. Tackling this was likely to be cost effective where specific point sources could be identified, but not if the sources were diffuse throughout the network.

AGr asked if salinity was monitored throughout the Gairloch network. SW indicated that conductivity monitors were installed to monitor this at Lonemore pumping station.

DM asked if the hardware at the WWTW was still in place to process flows of 16 litres per second, in line with the original discharge licence when the plant was installed. SW explained that physically this rate of flow would not pass through the membranes.

DM asked if the option existed to increase the number of membranes. AGr agreed that it seemed this could improve throughput. SW explained that Scottish Water does not believe this would resolve fouling problems. DM asked if Scottish Water currently uses all banks of membranes installed and IJ confirmed that it does. JA explained that there are two conflicting technical issues:

- Taken in isolation, the hydraulic problem could be addressed in principle by extending the plant
- However, there is also a biological problem, linked to maintaining the biomass which is crucial to the treatment process in healthy condition. At Gairloch, the biomass needs a stronger and more stable influent. Extending the plant would give it less nutrition and more instability.

AGr asked if there was an option to install smarter and more dynamic control with additional membranes. JA explained that membrane banks had to be kept in operation under normal operating conditions in order for the biological process to function.

AGr asked about developments in Membrane Bioreactor technology since the original plant was installed. JA responded that m² had looked at this. There had been developments and the technology was recognised as being

appropriate in some circumstances, but there was nothing currently on the market that would be recommended for a small coastal site like Gairloch.

DM asked about foaming and whether a sensor could be fitted to distinguish between foam and sewage in order to prevent premature shut-down of the treatment process. JA explained that during a foaming incident, the plant would overflow until the foam was cleared. AGr reiterated that the community had raised this concern with Scottish Water when the plant was originally proposed. JA commented that she thought the degree of sensitivity to salinity had not been appreciated across the water industry at that time. Manufacturers had thought the technology would be robust for coastal use, but operational experience had found this was not the case.

RB asked how the plant was cleaned up following foaming incidents. IJ explained that this had to be done manually and that an important concern for Scottish Water was the health and safety of its operators when carrying out this activity.

Action 3: Scottish Water to provide overview of previous and continuing efforts to tackle saline intrusion on the Gairloch network.

7. Update from m² (partnership of MWH and Mott Macdonald) on independent review of options for Gairloch

JA gave a presentation about the independent technical review that Scottish Water has asked m² to complete (**See slides**)

DM asked whether the option of up-rating the Membrane Bioreactor Plant was being looked at as part of the review. JA confirmed that it was, but noted the feedback from process experts was that there was likely to be insufficient strength in the incoming sewage to feed the biomass and enable the plant to operate successfully. A key current challenge was insufficient hydraulic capacity, but efforts to resolve this would worsen the issue with giving the biomass adequate nutrition to remain healthy.

AGr and DM both asked whether there were not options that could achieve better process control. JA explained that the biological process likes stability and problems would be expected if parts of the plant were being regularly deprived of 'food'. Re-establishing the biomass if it was lost was not a quick process.

JR asked if there were different or more modern membranes that could be considered. JA explained that the central issue was the biology of the plants and that this was a very fundamental feature of the treatment process they provide.

RB asked if the biological and filtering elements of the plant couldn't be separated out. JA explained that the technology had effectively developed from efforts to combine 2 more traditional treatment processes into one. More

traditional treatment processes were being assessed by the m² review, but would be likely to require a larger footprint than the existing Gairloch site.

DM asked how 'end of pipe' treatment levels for an Oxidation Ditch compared with the existing WWTW. JA explained that the review would look at this, but noted that water quality should be looked at holistically, considering quality of effluent from the WWTW, but also the risk of spills from the network.

AGr asked if the septic tank option proposed had any hydraulic capacity limit. JA explained it would be much less constrained, although still limited by the pumps at Lonemore. AGr noted that he understood the effectiveness of UV treatment would be critically dependent on the disc filter.

AGr noted that the community had not been given a comparison of expected effluent quality for the Scottish Water proposal. He would have liked m² to have been asked to identify the most cost effective route to achieve the current water quality performance at Gairloch. JR agreed that it would be helpful to see a table quantifying potential of treatment technologies and the risks associated with each.

JA agreed to ask m² process scientists to look into this.

DM asked if uprating the existing plant included better upstream screening and elimination of saline.

JA confirmed m² was looking at these options, as well as other potential modifications.

DM felt there should be surveys throughout the Gairloch network to search for saline. IJ confirmed that extensive work had taken place and would continue, but new sources were likely to arise continually as a result of ground movement.

JR asked how long it would take for m² to report back to the group.

JA explained the work was looking at the risks and benefits for each option, not initially taking cost into consideration. Any options which were equivalent or better than Scottish Water's current proposal would then be considered further via a Cost Benefit Analysis. The report was due to be provided to Scottish Water by mid-August and would be circulated to Stakeholder Group members in advance of the next meeting.

AGr asked about a new hybrid system which combined aspects of Membrane Bioreactor technology and filter beds. JR thought he might be referring to Nereda technology.

Action 4: m² report to be circulated to Stakeholder Group members by mid-August.

Action 5: m² to explore whether a table can be provided to quantify the treatment performance of the technologies available and any risks associated with them.

Action 6: m² to comment on the suitability of Nereda technology for Gairloch.

8. Questions and feedback

AGr asked what would happen if there were a shellfish designation at Gairloch. AGa confirmed this would be likely to result in a year-round standard of treatment for final effluent. IJ explained that UV treatment was widely used at sites where designated shellfish water were present.

IMcW noted discovery of a major herring spawning ground earlier in the year and that this was a reflection on the quality of the local environment, including the longstanding year-round closure of Loch Gairloch for mobile fishing gear that disturbed the seabed.

AGr commented that a significant reason bathing water status had not been previously applied for was the high quality of the local environment and the high level of final effluent treatment provided by the WWTW.

KB welcomed that the Options Appraisal was being carried out, although reflected that she reflected some concerns about the independence of m² given the work was being funded by Scottish Water. JR noted that m² and other consultants had important professional standards to abide by and their experts would not put their name to findings unless they reflected their professional opinion. KB acknowledged the only solution would be for the community to fund work itself.

AGr thanked JR for his chairing of the meeting and hoped he would remain engaged in the Group's work. JR agreed to consult others and was willing to remain involved if it was acceptable.

9. Next steps and date of next meeting

AT hoped that members of the Group had found the meeting useful. He explained that Scottish Water was seeking to reach a decision on the way forward for Gairloch WWTW by the end of September, if possible, in order to be confident of its ability to continue providing reliable treatment during the 2019 bathing season and beyond.

He anticipated that there would be a further meeting of the Group once members had received the m² report and given it consideration.

Once the appropriate stage was reached, Scottish Water would organise a drop-in event to provide an update to the wider community.

Based on the expected availability of the m² report in mid-August, members present agreed that **Thursday 30 August at 7pm** would be a suitable date and time for the next meeting.

GS noted that he had answers to some questions which had been circulated by KB and DM before the meeting and it was agreed that it would be easiest for these to be provided to members via email.

Action 7: Scottish Water to organise next meeting for Thursday 30 August at 7pm.

Action 8: GS to circulate answers to specific questions raised by members.