


Questions and answers from meeting, provided to Council staff from Robinson's Bay community group via Suky Thompson:

Question	Answer
1. What has been constructed at the top of Takamatua Hill?	A water reservoir
2. What infrastructure (pipes, pumps etc) has been constructed to take sewage to this?	None
3. Why has the Council built this infrastructure before obtaining a discharge consent from it?	None of the Akaroa wastewater scheme has been built, and it will not be built until a discharge consent has been obtained.
4. What is the capacity of the new treatment plant and how does this compare with the existing Greens Point plant?	The new treatment plant will be able to fully treat flows up to 14 litres per second (L/s). Flows in excess of 14 L/s will be stored in the flow buffer tank and when the capacity of that is exceeded, flow will pass through the bypass treatment system will be able to treat flows up to 65 L/s. These flows are based on population projections to 2041. The existing Akaroa wastewater treatment plant has a capacity of 27 L/s.
5. What treatment will sewage receive at the new plant and how does this compare with the existing Greens Point plant?	<p>The existing Akaroa wastewater treatment plant consists of the following consecutive treatment stages:</p> <ul style="list-style-type: none"> • Inlet Screen: Sewage from Akaroa is pumped from a pump station to the 3mm aperture spiral screen. • Imhoff Tanks: The flow of screened effluent is evenly split to the two Imhoff tanks in the flow balancing/splitting tank. Suspended solids settle out of the effluent and are stored and anaerobically digested in the bottom of the Imhoff tanks. • Trickling Filter: Effluent from the Imhoff tanks flows to the trickling filter inlet chamber, where it combines with recycled trickling filter effluent. The combined flow gravitates to the trickling filter and the effluent is treated by biological processes within the filter rock media. • Clarifier: Effluent which is not recycled back to the trickling filter, flows to a secondary clarifier where biological solids from the trickling filter are allowed to settle out. • UV Disinfection: Clarified effluent flows from the clarifier to the UV disinfection system. Here potentially harmful micro-organisms in the effluent are killed using UV radiation. <p>The proposed Akaroa wastewater treatment plant will consist of the following consecutive treatment stages:</p> <ul style="list-style-type: none"> • Fine screening (0.5 mm gap size) and grit removal at the new terminal pump station in the Childrens Bay boat yard. • The treatment process for the new treatment plant is yet to be designed, but will be a compact biological nutrient removal (BNR) plant. One option is to use Modified Ludzak-Ettinger (MLE) reactors, which is a conventional process for BNR, but other options producing the same treated wastewater quality will also be considered. The MLE process is an anoxic followed by aerobic system with a high level of recycle from the aerobic zone to the anoxic zone to provide sufficient nitrate and nitrite for nitrogen removal by denitrification. This recycle is combined with Return Activated Sludge (RAS) from the membranes to provide sufficient microorganisms (otherwise known as Mixed Liquor Suspended Solids (MLSS)) to treat the wastewater. To avoid biological inhibition, both carbon (acetic acid) and alkalinity (bicarbonate) will be added to the wastewater as it enters the MLE reactors. • Membrane filtration to remove the suspended solids generated by the treatment process and to provide a high level of disinfection. The membranes are most likely to be low pressure hollow fibre membranes located in a separate membrane building. <p>When the capacity of the full treatment process (14 L/s) was exceeded, wastewater will be stored in the 250 m³ flow buffer tank. When the capacity of the flow buffer tank is exceeded, flow will pass through the bypass treatment process, which will consist of UV disinfection and disc filtration.</p> <p>Further information about the proposed treatment plant can be found in Section 4.5 of the Akaroa Wastewater Scheme Upgrading - Resource Consents Application and Assessment of Effects on the Environment (CH2M Beca, June 2014). Consents for the new pump station, treatment plant and reticulation changes have already been granted. A photo of treated wastewater from a similar membrane filtration plant in Turangi, compared with tap water, is shown in the photo below.</p>

Question	Answer
	
6. For Robinson's Bay if drip irrigation is used is it below or above ground?	Drip irrigation could be above or below ground.
7. <ul style="list-style-type: none"> a. For Robinson's Bay if pasture – how often would it be cropped, can it be grazed, is there a withholding period b. Have the Council taken into account the establishment time for shelter belts if its done around residential areas using spray irrigation? c. If trees – would these be cropped or are they permanent forest d. If trees – what would the establishment time be and what would be the interim solution post 2020 when the consent for the current Greens Point treatment system lapses 	<ul style="list-style-type: none"> a. Historically human wastewater has been treated to a level where diseases can potentially be irrigated onto pasture. If cattle graze the irrigated pasture too soon after the irrigation then there is the potential to transfer the diseases from humans to cattle. The main concern was around the beef tapeworm (<i>Taenia saginata</i>). The withholding period for when stock could not enter a paddock irrigated with human wastewater was typically around 30 days. At Akaroa the proposal is to use an advanced treatment system which will prevent most diseases (and in particular the cysts of the beef tapeworm) from being present in the treated wastewater to be irrigated. This presents the opportunity to consider reducing the withholding time between irrigation and grazing. The use of the land by any type of stock and any withholding requirements will be considered further as options are considered in more detail. b. Shelter belts will take some time to establish. This would be taken into account in the staging of the implementation of a spray irrigation scheme, if this option was selected. c. Specific tree species have not been selected yet. These could be either cropped or permanent forest. d. The time taken for a full canopy to develop would depend on the tree species selected. This would be around five years for kākūka, so an alternative discharge for most of the wastewater will be needed once the current discharge consent expires in 2020. This could be a new short-term consent for the current wastewater treatment plant at Takapūneke.
8. For Robinson's Bay how often would irrigation take place	Irrigation would take place whenever there was a soil moisture deficit. Different areas would be irrigated on a rotational basis. The details of this would be determined during the next stage of design.
9. For Robinson's Bay what size would the pond be expected to be and how would it be lined?	For irrigation to trees the pond volume would be 12,000 m ³ (0.7 ha footprint) and for irrigation to pasture the pond volume would be 35,000 m ³ (2.5 ha footprint). The footprint required is conceptual only and may well change depending on the topography of the specific location.
10. For Robinson's Bay what other equipment to service the irrigation would be required? For example pumping stations, pipes, smaller ponds, service depots etc. - any other structures that would be being added to the area. Any further information on the management of the irrigated areas - either cut and carry or harvesting of trees if that is to happen and the associated infrastructure and vehicles involved would be appreciated.	If the storage pond was located in Robinsons Bay then the wastewater would flow by gravity from the treatment plant to the storage pond. A small pump station and pipes would be required to pump water from the storage pond to the irrigation areas. The way the irrigation areas would be managed would depend on whether irrigation was to trees or pasture, whether the Council owned the land or had a lease or licence, and the terms of any lease or licence.
11. For Robinson's Bay what setbacks are proposed from streams and houses?	A 25 metre setback is proposed for spray irrigation, and a 5 metre setback is proposed for drip irrigation. This may change depending on the specific site and further analysis of potential effects.
12. For Robinson's Bay what time of the year for irrigation summer only or winter also?	Irrigation could occur at any time of the year if there was a soil moisture deficit.
13. What is not filtered out in the treatment process – including hormones, viruses, heavy metals, nutrients and bacteria?	<p>The proposed treatment plant will treat the wastewater to a very high standard and represents current best practice. Please refer to Table 4-4 in the Akaroa Wastewater Scheme Upgrading Resource Consents Application and Assessment of Effects on the Environment (CH2M Beca, 2014) (AEE) for the design treated wastewater quality.</p> <p>The removal of antibiotics and hormone contaminants in wastewater treatment processes is a complex process involving various mechanisms such as absorption, biological degradation, chemical degradation, and filtration. Overall, a proportion of antibiotics and hormones are expected to be removed by the treatment process but the removal efficiency cannot be stated with certainty.</p>

Question	Answer
	<p>Bacteria will be almost entirely removed by the treatment process as they are too large to pass through the pores in the membrane filtration system. Viruses are generally smaller than bacteria so will pass through the membrane filtration system. However, viruses naturally die-off in the environment and would be filtered out by the soil.</p> <p>There are no industries in Akaroa so the concentrations of metals are extremely low (see Table 8-4 in the AEE). The treatment plant will also reduce nitrogen concentrations.</p>
<p>14. How much construction work will be involved in Robinsons Bay?</p>	<p>Construction would involve constructing a storage pond, a small pump station and laying pipelines to the irrigation areas. Some contouring of the land may be required.</p>
<p>15. Are there any other places in NZ where this type of wastewater irrigation is taking place so close to houses and streams, or on similar soil types?</p>	<p>Irrigation to land is occurring on similar soils at Wainui. Examples of buffer distances for other wastewater irrigation schemes are:</p> <p>Blenheim (MDC consent U071181) Spray irrigation of wastewater shall not occur within 10 metres of flowing surface water. Drip irrigation of wastewater shall not occur within 3 metres of flowing surface water Only drip irrigation can be used within 25 metres of boundaries. Note there is no limit of how close to the boundaries that it can be used. Spray irrigation buffer distances vary from 25 metres to 80 metres. This was a function of the types of irrigators proposed at the time of the consent application.</p> <p>Rolleston (ECan Consent CRC101109) Median wastewater E. coli concentration 500 colony forming units (cfu) per 100 mL. (Note the design treated wastewater quality for Akaroa for E. coli is 10 cfu/100mL in winter and 100 cfu/100 mL in summer.) Spray irrigation (centre pivot and k-line): 15 m from boundary with compliant boundary shelter planting.</p> <p>Greytown (Greater Wellington Regional Council Consent WAR080254) 25 m setback for spray irrigation with buffer planting. Note it has been assumed that a suitable mix of trees and shrubs would be planted on the boundaries as further buffer to the irrigation.</p>
<p>16. Have you considered the effect on the environment in the valley as a result of the irrigation adding a large amount of extra moisture to the valley floor and low sides in a valley that has soils that already saturate in winter? For example:</p> <ol style="list-style-type: none"> Will nearby soils (i.e. on land not irrigated but surrounded by it) be more damp? Will nearby houses be damper? Will it affect soil and air born fungal levels (e.g. Phytophthera)? How does it affect flooding likelihood/frequency? 	<p>Irrigation would only occur when there is a soil moisture deficit, so none of the possible effects listed would occur.</p>
<p>17. If summer-only irrigation is proposed, won't there still be an issue with winter rains coming on top of soils already saturated, rather than having a soil moisture deficit to fill?</p>	<p>Irrigation would only be to land with a slope of less than 15 degrees to reduce the risk of causing land instability. However, there would be increased runoff if a storm was to follow irrigation.</p>
<p>18. PDP have indicated that the soil infiltration and runoff level will more than double and will end up in the creeks and impact water quality. Will a detailed impact assessment be done before the consultation options are finalised and document released including</p> <ol style="list-style-type: none"> Increased sediment deposits into the creek and sea Creek banks liable to collapse Increased nutrient levels flowing out to sea 	<p>The detailed assessment of environmental effects will be done at the stage of preparing the resource consent application, not at the options assessment stage. However, the impacts of nutrients on the harbour have already been assessed in the Akaroa Wastewater Scheme Upgrading - Resource Consents Application and Assessment of Effects on the Environment (CH2M Beca, June 2014) for the direct discharge to the harbour. This found that there has been no significant change in wider harbour nutrient (total nitrogen and dissolved reactive phosphorus) concentrations as a result of the existing treatment plant discharge. This is to be expected as the overall contribution of nutrients from the existing treatment plant is very low in the context of the total nutrient loading to the harbour from other sources. The existing treatment plant is not designed to reduce nitrogen, whereas the proposed treatment plant will be designed to reduce nitrogen. This combined with uptake of nitrogen by plants would mean that the nitrogen load to the harbour would be extremely low and would not have a significant effect.</p>
<p>19. What happens to bores and springs that supply residents and stock?</p>	<p>Domestic and stock drinking water takes would be taken into consideration if the Council wished to use a specific property for irrigation.</p>
<p>20. What treatment steps are the bypass flows missing out and what do those steps achieve that will be missing?</p>	<p>The bypass does not include a biological nutrient removal process. Refer to the answer to Question 5 for further details of the components of the main treatment plant and bypass treatment processes.</p>
<p>21. Does including semi-treated bypass flows have the potential to cause maintenance issues such as blocked irrigators because of biological growth in the storage pond?</p>	<p>No. The drip irrigators proposed are commonly used for treated wastewater of a much lesser quality than that proposed for Akaroa, even with the bypass treatment system operating, and are designed not to block.</p>
<p>22. Do semi-treated bypass flows have significant potential to cause the pond to smell?</p>	<p>The wastewater will be very well treated and will not have an offensive or objectionable odour. The wastewater from the bypass treatment is slightly less well treated, so may be more odorous. However, this will be mixed with fully treated wastewater in the storage pond, so the combined wastewater is unlikely to be odorous. If a land based option is chosen, this will be assessed in more detail at the next stage of the project. One option to reduce</p>

Question	Answer
	the risk of odour would be to cover the storage pond and provide odour treatment for any air from the pond.
23. What boundary width do you intend to have between pasture/tree irrigation and residential property? Does it take into account the strong winds that blow in Robinsons Bay?	A 25 metre setback is proposed for spray irrigation to pasture, and a 5 metre setback is proposed for drip irrigation to trees or pasture. This may change depending on the specific site and further analysis of potential effects. It would be possible to turn off the irrigation system automatically when the wind reached a certain speed; this is done for the Blenheim treated wastewater irrigation scheme.
24. How often has the current WWTP overflowed, and in what rainfall conditions? How does the new system compare to the old re capacity and flow rate?	<p>There have been three overflows from the Akaroa wastewater treatment plant, all of which resulted in discharge of partially treated wastewater:</p> <ul style="list-style-type: none"> • 13/10/2015 – UV treatment fault – dry weather • 15/08/2014 – UV treatment fault – dry weather • 25/8/2008 – UV treatment channel capacity exceeded due to high flows – 19 mm of rain over 8 hrs <p>The new treatment plant will be able to fully treat flows up to 14 litres per second (L/s). Flows in excess of 14 L/s will be stored in the flow buffer tank and when the capacity of that is exceeded, flow will pass through the bypass treatment system will be able to treat flows up to 65 L/s. These flows are based on population projections to 2041. The existing Akaroa wastewater treatment plant has a capacity of 27 L/s. The pump stations and trunk pipelines will have increased capacity compared to the current situation.</p>
25. What is the increased likelihood of bypass flows with the increased severity and frequency of storms predicted due to climate change	No allowance has been made for climate change. On the east coast of the South Island the impact of climate change is generally expected to be drier summer conditions with heavier storm events (more intense rainfall over the same duration). This may result in greater localised flooding during the event, but is unlikely to cause any greater infiltration into the wastewater network than already allowed for. In addition, as the Council continues work on reducing infiltration and inflow into the network, any small increases that may be attributed to climate change would likely be offset by decreases in flow from improvements to the network. The net result is that climate change is not expected to affect design flows significantly.
26. Are the Council still considering cutting costs by leaving out the Nitrogen removal step? If so, has the effect of the additional Nitrogen load been modelled? a. In the soil b. In the creek and ocean, as a result of increased runoff	Removing the nitrogen removal step from the treatment plant process if irrigation to pasture is chosen is still an option. This is because pasture takes up significantly more nitrogen than trees if a cut and carry system is used. Therefore, there is unlikely to be a significant difference in terms of nitrogen effects on the receiving environment for this option. Please refer to the answer to Question 18 for further information about nitrogen.
27. Has the potential for soil build-up of other contaminants such as antibiotics and hormones been modelled? Are these additional contaminants likely to move in the soil beyond the spray areas (directly or in surface water)?	Modelling of the effects of the build-up of contaminants such as antibiotics and hormones has not been modelled. Please refer to the answer to Question 13 for further information about antibiotics and hormones. Lincoln University is conducting lysimeter experiments on soil cores taken from the golf course at Duvauchelle and from Takamatua Peninsula, which are irrigated with treated wastewater from the Duvauchelle wastewater treatment plant (which is of a lesser quality than the proposed Akaroa wastewater treatment plant). This includes monitoring the quality of leachate, and analysing chemical changes in the soil and its structure. For further information about these experiments and the results so far please refer to the Kiwi Science website .
28. What pathogens will be released into the environment – for example is giardia likely to be in the treated water or the bypass water?	Giardia is a protozoan parasite and is very large in size compared to norovirus or bacteria. As the membrane filter will remove bacteria and viruses with good efficiency it will also remove giardia (and cryptosporidium). Regarding the bypass, UV is effective in destroying protozoa, viruses and bacteria, but not quite as effective as membrane filtration.
29. How does the pathogen level from the treated and partially treated wastewater entering the harbour annually at present compare with the annual load from agricultural run-off. How does it compare with the levels resulting from the French Farm septic tank overflows?	<p>The assessment of environmental effects for the consent application for the discharge of treated wastewater from the existing Akaroa wastewater treatment to the harbour (MWH, 2012) found that based on the results of historical monitoring data, the risks to public health from swimming at the Akaroa Main Beach, as a result of the discharge, are low.</p> <p>The proposed Akaroa wastewater treatment plant will treat the wastewater to a much higher standard than the existing plant, further reducing the risk to public health. The Akaroa Wastewater Scheme Upgrading - Resource Consents Application and Assessment of Effects on the Environment (CH2M Beca, June 2014) for the direct discharge to the harbour contains an extensive public health risk assessment (refer to Section 8.4 and Appendix *) and this found that the proposed Akaroa wastewater scheme would further reduce the risk to public health. If irrigation to land was the option chosen, this would further reduce the risk to public health as any remaining pathogens would die-off and be filtered out by the soil.</p> <p>Septic tanks only provide a basic level of treatment through solids settling and are not designed to reduce concentrations of pathogens. Run-off from</p>

Question	Answer
	agricultural land has high levels of faecal contamination from stock and would be a much more significant source of contamination than the treatment plant.
30. What is different about the new sewage treatment plant?	Please refer to the answer to Question 5.
31. Have potential pond locations been identified? What sized ponds are being considered and what will they look like?	Possible locations have been identified for the purposes of developing cost estimates. However, the pond could be located anywhere within the areas identified as being possibly suitable for irrigation (shown in purple on Slides 27, 28, 32, 33 and 37 of the presentation given on 9 November).
32. Does the level of irrigation proposed pose risks to the integrity of such a large storage pond, e.g. from subsidence or flood?	Irrigation would take place only when there was a soil moisture deficit. This would not impact on the integrity of the storage pond.
33. Is there a risk of the storage pond overflowing in prolonged wet weather, and if so, what will the impact on the shallow sand flats of Robinsons Bay be?	There is no risk of the storage pond overflowing in wet weather. If the pond was full, wastewater from Akaroa would overflow from the proposed terminal pump station in the Childrens Bay boat park, after passing through the fine screen and grit removal process, to Grehan Stream.
34. How will stormwater be managed around such a large structure	Stormwater drainage around the pond would be included in the design to avoid any effect on the pond.
35. How is the construction and placement of the ponds designed to cope with the increased severity and frequency of storm events in the future predicted due to climate change.	The location and design of the pond is yet to be undertaken, but would take into account the risk of flooding and any changes expected to result from climate change.
36. Why have the high level capital cost estimates of the options changed so radically since the August presentation to the Environment Court.	There was no presentation of capital costs to the Environment Court in August; the presentation was to the parties to the appeal. The main reason why the costings changes from August to November is that further work was done on the storage pond costs in between these dates. The further work looked at the land slope at possible pond locations and also developed a basic pond layout for each site. Land slope makes a big difference to storage costs – if the land is relatively flat the pond will be lower cost. This is because a maximum embankment height of 3 metres has been assumed to minimise geotechnical risks. If the land is nearly flat then one or two ponds with an embankment height of 3 metres can provide the full amount of storage. However if the land is steeper such as at Pompeys Pillar then many smaller ponds staggered down the slope will be needed and the total length of embankment is higher and hence more costly. This explains why Robinsons Bay costs went down when all others went up – the land in lower Robinsons Bay Valley has a shallower grade than anywhere else.
37. How is it that Robinsons Bay pasture has gone down when all the others have gone up?	Refer to the answer to Question 36.
38. What other options for wet weather overflows have been explored? a. Such as a holding tank at the treatment plant?	A flow buffer tank at the treatment plant is already included in the proposed treatment plant design. A separate consent will be sought for overflows from the wastewater network. Please refer to the wastewater overflow consent project webpage for further details.
39. Has the Council factored in the cost of land acquisition in its comparative costings of Robinsons Bay vs Pompeys Pillar/Paua Bay	Yes
40. What will it do if Robinsons Bay landowners are unwilling to have the wastewater on their land or to sell?	If a land based option is selected, the Council hopes to acquire the land through lease, license or purchase with willing property owners. It is hoped that compulsory purchase under the Public Works Act will not be necessary. The Council does however have the option of pursuing compulsory purchase if sufficient land is not available. At this stage it is very difficult to predict the likelihood of this action. One of the grounds for the decision of the commissioners to decline the harbour outfall consents was because of a lack of assessment of alternatives. While land irrigation had been previously considered as an option in the Akaroa Wastewater Options and Risk Analysis (Harrison Grierson, ecoEng and Golder Associates, February 2010) , this was only for properties where there was a willing seller. Environment Court decisions have directed that the assessment of alternatives must consider all practical alternatives, and this includes compulsorily acquiring land through the Public Works Act if necessary.
41. How is Council accounting for the negative impact on Robinsons Bay property values in the comparative costings, or are they externalising the costs onto ratepayers and leaving them off the comparison?	Effects on the four well-beings (which include economic effects) under the Local Government Act will be a factor in Council decision making. Under the Resource Management Act, the primary assessment of effects is on physical effects on the environment.
42. Pompeys Pillar have indicated they could use the water and its nutrients, a. What weight is being given to a solution where the water is wanted and there are not affected neighbours and one where the water is not wanted and there are affected neighbours. Does it come down to cost as far as Council is concerned b. How does the larger land area at Paua Bay affect the costing – for example is all the land is used does the smaller storage pond required offset other costs?	a. The Council will be making a Local Government Act (LGA) decision on the wastewater discharge option to pursue. The Council must take into account social, cultural and economic interests; the option must be efficient, effective and appropriate; and the option must be consentable as sustainable management under the RMA. Discharge to water is not sustainable management under the RMA unless options that avoid discharge to water have been adequately investigated and reasonably discounted. The option that the Council will select is not decided by popular vote, but the views of the people contributing to the consultation process will be a key part of the Council decision making. b. The Council is not considering land at Paua Bay. If you are referring to Pompeys Pillar, the larger area of land that is possibly suitable does not affect the cost estimates, as these are based on the land area required. During the winter the land is too wet to irrigate so all treated

Question	Answer
	wastewater would need to be stored in the storage pond and this is what dictates the size of the pond.
43. How do whole of life costings come into the comparisons?	Operating costs, capital costs and whole of life costs have been prepared for each of the options and will be taken into account in the evaluation.
44. The public have been provided with a single figure high level capital costings only. When will a detailed component by component based breakdown of the capital costings for all the options currently under consideration be supplied?	As the capital costs include estimates of land purchase costs, these are commercially sensitive and will not be made publically available until after any land acquisition process is completed.
45. What is the landowner position for each of the potential irrigated sites for each option?	The position of individual land owners is confidential to those land owners.
46. Have you explored alternative solutions that may have become available since 2010 that might work on the peninsula and also meet Ngai Tahu's wishes? For example, are there other alternatives for wetlands etc that would be acceptable?	Other alternatives, including wetlands, were extensively considered in the Akaroa Wastewater Concept Design Report for Alternatives to Harbour Outfall (CH2M Beca, May 2016) and only year round irrigation to land fully meets Ngai Tahu's values.
47. What notice has been taken of the submissions from Takamatua residents in developing this next set of options? We see no evidence that you have taken on board their comments regarding Akaroa being involved in the solution, that it is inappropriate to dispose of wastewater in a valley area near residences or the desire for a sustainable biodiversity based solution.	Please refer to the project team responses to the submissions on the consultation undertaken earlier in 2016 . Discharge to water is not sustainable management under the RMA unless options that avoid discharge to water have been adequately investigated and reasonably discounted. Therefore the Council must investigate all practical land disposal options. Irrigation could be to a sustainable biodiversity area and the Council is interested to seek feedback from the community on what this might look like.
48. Would Robinsons Bay residents in future have affected party status to property development in Akaroa that results in increased sewage flows and therefore irrigation levels in this valley?	If the Council decides to choose irrigation to land in Robinsons Bay, then the affected residents and land owners will be determined in consultation with Environment Canterbury. Which properties are affected would depend on the location of the pond and irrigation areas.
49. What are the potential health risks of treated and semi-treated water on residential properties through spray drift or run-off?	The potential health risks from irrigation of treated wastewater would be very low due to the very high treated wastewater quality and the buffer distances between the irrigation area and houses and streams.
50. What impact assessment has been done of the effects of increased water runoff and the nutrients on the environment of the coastal and marine environment of Robinsons Bay	Please refer to the answer to Question 18 for commentary on nutrients. Irrigation would only when there is a soil moisture deficit, so would not generate runoff. During rainfall some runoff from the land is likely, the amount of runoff will depend on the conditions at the time. A comprehensive assessment of environmental effects would be undertaken at the consent preparation stage if irrigation to land is the selected option.
51. What impact assessment has been done of accidental contamination of inflowing sewage leading to adverse effects on Robinsons Bay (cite recent examples of buttermilk disposed of into a sewage treatment system and the Christchurch police alcohol dumping).	The likelihood of accidental dumping of contaminants into Akaroa's wastewater system is low, and would be diluted by the rest of the town's wastewater.
52. The Council consistently ignored the concerns of French Farm residents when the public toilets were overloaded. How would they monitor the system proposed for Robinsons Bay and what input would residents have?	In response to overloaded septic tanks, the Council closed down freedom camping at French Farm. There will be a robust operations and maintenance contract in place for the treatment plant and disposal scheme.
53. Why is the next round of consultation processed for December?	Council staff have agreed to delay the consultation period until early 2017. The Council will have a consultation meeting with the Robinsons Bay, Takamatua Valley and Pompeys Pillar land owners and residents on Saturday 3 December, 2-4pm at the Gaiety Hall. Feedback from that meeting will be used to inform the formal consultation process.
54. What input do we as potentially affected parties have in the shaping of options prior to a release of a consultation document?	The Council wishes to obtain input from the residents and landowners of the Robinsons Bay, Takamatua Valley and Pompeys Pillar land owners at the consultation meeting on Saturday 3 December.
55. How will information from the previous consultation be incorporated into the options?	Information from the previous consultation has already been taken into account in considering further options, in particular the risk of land instability. Discharge to water is not sustainable management under the RMA unless options that avoid discharge to water have been adequately investigated and reasonably discounted. Therefore the Council must investigate all practical land disposal options.
56. Will detailed impact assessments on human health, environment and property values be included in the options consulted on	A comprehensive assessment of environmental effects would be undertaken at the consent preparation stage if irrigation to land is the selected option.
57. Will the consultation options include the full and relevant details clearly specifying pond locations, size of ponds, other associated infrastructure and detailed capital costings for each option?	The Council is mindful that it needs to balance the costs of detailed investigations of multiple options which may not be progressed against the desire of the community to have sufficient information to express a preferred option. The consultation booklet is being prepared at the options comparison stage and will only include concept designs. As the capital costs include estimates of land purchase costs, these are commercially sensitive and will not be made publically available until after any land acquisition process is completed.
58. The previous consultation glossed over wet weather overflow and presented no detailed information. Will it be fully described and included in the next round?	A separate consent will be sought for overflows from the wastewater network. Please refer to the wastewater overflow consent project webpage for further details. A presentation on the overflow consent was given to the Akaroa community on 9 November.
59. What will the Council do if it discovers it has undersized the irrigation area and/or storage volume, and the total water cannot be irrigated?	If this were to happen, the Council would most likely acquire additional land and/or increase the size of the storage facility.

Question	Answer
60. Does the Council intend to phase the irrigation in and monitor the results, or is it/will it be committed to handling all flows once the solution is accepted?	The possible staging of implementation of an irrigation scheme would be considered as part of the Council decision.
61. Will the Council supply the community with an advocate and meet the costs of advocacy related to finding a sustainable and acceptable solution?	Any specialist advice or advocacy services obtained by the community will need to be paid for by the community and will not be paid for by Council.

Capital Costing differences August versus November presentations

AUGUST COSTINGS

Capital Cost Estimates

Option	Cost \$ million (Trees)	Cost \$ million (Pasture)
Harbour Outfall	6.7	N/A
Takamatua Valley irrigation	5.9	9.4
Robinsons Bay irrigation	5.7	7.3
Pompeys Pillar irrigation	11.2	14.9
Wainui irrigation	16.4	20.3

NOVEMBER COSTINGS

Capital Cost Estimates

Option	Cost \$ million (Trees)	Cost \$ million (Pasture)
Harbour Outfall	6.7	N/A
Takamatua Valley irrigation	5.9	9.4
Robinsons Bay irrigation	5.7	7.3
Pompeys Pillar irrigation	11.2	14.9
Wainui irrigation	16.4	20.3

Note that Pompey's pillar costs have increased but Robinsons Bay pasture has decreased! Why?

Please refer to the answer to Question 36.