

Transcript: Vancouver Coastal Health presentation to Bowen Island Municipal Council, Feb 26, 2024

Mayor Andrew Leonard

So, I guess we'll just move on to delegations. We have a delegation today from Dr Alex Choi, the Medical Health Officer at Vancouver Coastal Health, regarding our water systems here on Bowen Island. So, Dr Choi, welcome, if you want to join us up front here, I believe we have a presentation that will be pulled up on screen.

Dr Alex Choi, Vancouver Coastal Health (VCH) Medical Health Officer

I'm just going to ask two of our [inaudible]

Mayor Andrew Leonard

Sure yeah feel free to come on up. We can have staff grab another seat as well.

Great, and so this is a delegation. We invited Vancouver Coastal Health here and their representatives just to give us an update on our water systems and to understand a little bit about what's happening from the Vancouver Coastal Health side.

So thank you so much for being here today, [making] time to make the trip to Bowen on a sunny day, and whenever you're ready to start, generally about 15 minutes including questions. We haven't had public comments today so we do have some time, and we can flex that as needed.

Dr Alex Choi, VCH

Thank you so much. Do we have the powerpoint?

Hope Dallas, BIM Corporate Officer

Sorry, just receiving it.

Dr Alex Choi, VCH

Okay, all right. So why don't we start with some introductions first, um, so, uh, we have at the table today some of our drinking water team. My name is Dr Alex Choi and I am your Medical Health Officer. Within VCH we have a team of folks who helps us with drinking water, and some of them are here today. Um, this is uh, Phil, would you like to [inaudible]...

Phil Muirhead, Vancouver Coastal Health (VCH) Regional Water Safety Officer for Coastal Health Drinking Water Officer and Drinking Water Officer

Yes, I'm Phil Muirhead, I'm the Regional Water Safety Officer for Coastal Health and Drinking Water Officer.

Ross Adamson, Vancouver Coastal Health (VCH) Environmental Health Officer and Drinking Water Officer

I'm Ross Adamson. I'm an Environmental Health Officer on Bowen Island as well as a Drinking Water Officer.

Dr Alex Choi, VCH

And the reason we wanted to come today, and you know we know that you've been hearing from your staff about the drinking water system. Particularly what prompted us to come here today were some of the recent updates around the Cove Bay system, but we do have you know some larger broader comments as well. Um, you know, we do plan for this to be, you know, the beginning of a conversation as it were about what we're going to be doing with Bowen and the drinking water system. Um, but you know we wanted to start off with a bit of an overview of the system, and how the regulations have changed over the years. Before we start, I do want to acknowledge that we at VCH do provide services on the traditional unceded territories of 14 different First Nations, and are very, very grateful for their stewardship since time immemorial. Next slide.

So in terms of what we're going to be talking about today. Um, so you know, I know that you know we've had some time where we haven't come to meet you in council chambers. Thank you so much for having us today. We have a few things we wanted to outline because there have been updates since the last time that we spoke.

I know, you know, I met some of you, but not all of you, um, so I'm really glad to meet you here today. Um, and so we just wanted to go over first of all the legislation. Um, you know we at VCH as you know are not um the folks who are responsible for all parts of the drinking water system. We have a very specific responsibility and so we're going to go over some of the legislation that we work with today. We're then going to talk about treatment objective guidelines and treatment credit guidelines.

So basically, some of the guidelines that we use to see whether or not our system is performing at a level that we believe to be safe for the public. We are then going to talk about some of the water systems here on the island and then we're going to talk about some of the challenges and ongoing considerations. Um, and you know again this brings me back to why we are here today, and what prompted us to come here at this particular time, which really is around Cove Bay and some of the actions that we might need to consider as we're looking at the ongoing challenges that we're having with the system. So, with that, um, I'm going to turn it over first, uh, to Phil.

Phil Muirhead, VCH

All right I'm just going to go over some of the um background stuff or a little overview stuff, uh, so we all know what we're [inaudible] we're talking about mentioning these things throughout the presentation. So the first thing is uh regarding legislation on our water systems. The two key pieces of legislation that that Ross and myself work with is uh the *Drinking Water Protection Act* [inaudible]

There's other pieces of acts and regulations that are covering other parts of aspects of water. But those are the two main ones because, um anything that's defined uh a water system, is basically two or more connections. And so we have a lot of them on the system and uh on the island, and there's quite a few that are just under control of some Bowen Island municipalities. So I guess the next slide. Um. the treatment objective guidelines. So if you actually go and look at the act and the regulation, uh it talks about surface water needing to be disinfected and treated but it doesn't actually tell you what that means. And so we have a number of guidelines, uh, one is for surface water treatment objectives and one is groundwater treatment objectives. And um these are the ones, I mean, they're called guidelines, but they're basically set in stone like when it talks about the minimum amount that we need, and these things have been evolved from decades with the EPA and other other agencies that deal with water, and they've been adopted here in the province as our guidelines. And so when we talk about uh requirements, it's all termed in in the word log credits. Log credits is just a reduction and, and, it's a little thing there, I mean, every time you want to know how many logs you're dealing with you just count the number of that. So 90% is one log, 99% is two log and so forth.

So we start hearing these numbers four three two one zero, and what we're referring to there is a four log reduction of viruses, and it's a three log reduction of cysts which is your giardia, beaver fever, cryptosporidium, those are three. And then the other thing is we talk about two forms of treatment. And then we have one NTU which is a form of turbidity and then zero detectable coliform which is your bacteria that we test for. That's a indicator organism as a test organism, we don't test for everything that could possibly be in your water other than maybe doing special tests for giardia and crypto. And so these are the minimum standards, and they're based on your source water being of a certain quality. Whereas, if your source water is worse then these numbers have to go up.

But for the most part what we've agreed on is like the four three two one and so forth. For surface water that's a standard treatment. When you're getting into groundwater, groundwater has basically been defined into three different levels.

We call one [inaudible] GARP which is groundwater at risk of pathogens and that's basically saying it's not really that much different than surface water. So you can imagine somebody digging a 10-foot pit in their backyard and it fills up with water and they call that a well. You know you throw a big piece of plywood on it. It doesn't have a lot of protection, so that's basically going to... Treatment standards are going to be the same as if you're pulling it out of the creek or a lake.

Then we have one where it's called GARP for viruses. So it's got some treatment that's going on, like some of the bigger pieces. Your giardia and crypto are getting held up in the soils but the viruses can still possibly transfer through the soil, being smaller, having longer lifespans and well actually not even living right. So they can they just basically make their way through so they're viable for a lot longer time and they also make people sick at a much lower number. So, we can have that middle of the road one. And for those numbers there we still require of course the four block reduction for viruses, but you get credit for not having to treat for the cysts, and crypto and giardia. Then the last one is our low risk. And that's basically you've got good protected groundwater and it can come out of the ground, and it doesn't need any further treatment providing it's, it's, got the right turbidity. It doesn't have too much turbidity in the water.

Of course that's the water as it's coming out of the source. Once you put it into distribution there might be some need for secondary treatment at that point to make sure that the water remains potable. Depending on the type of system, and how long your runs or things like that.

So next slide. And so that's the minimum standard for what's required. How you reach that standard is also we have treatment guidelines. There's another document. And these documents are contained within the *Drinking Water Officers Guide* that we all use, the drinking water officers, it's our key piece of... It's a document that we all go to to try to interpret our acts and regulations. And in there they've got treatment credit guidelines. So it basically lists every type of treatment and what the normal level of credit is for using that type of treatment. And the whole idea is, you just line up and just list out all the forms of treatment you have and you get credit for each one and when you add them all up, credit that you have needs to exceed the minimum amount. Basically. So there's a whole bunch of different levels for different types of treatment and this is why Cove Bay has multiple levels of treatment.

You've got, the ceramic filters, and as well as ultra, not ultra bio but you have filtration [with] that. You have your chlorination. They all get credits for doing different things.

I think that's it now isn't it? We turn it over to you.

Ross Adamson, VCH

Sure.

Phil Muirhead, VCH

Next slide.

Ross Adamson, VCH

Yeah, thank you Phil. So today, uh, my role in this presentation is to give a brief update on the municipal water systems on Bowen Island. Bowen Island has seven municipal systems and they're made up of systems that are supplied from surface water.

So two systems of surface water only. Groundwater, three systems that are groundwater only and then there's two systems that have a mix of surface and groundwater. So, I'll now just briefly discuss each of these systems, and specifically discuss how treatment objectives are being met.

So yeah starting off on the east side of the island, we have Hood Point, Eagle Cliff and Cove Bay. Yeah, starting with Hood Point. So this surface water system supplied from Honeymoon Lake has full treatment including chlorine, UV and filtration and is meeting our treatment objectives for surface water. So that's really all we need to talk about really with Hood Point. It's not one of the systems that we have concerns with.

Next system, Eagle Cliff Water System. It provides primarily surface water from an open brook fed reservoir, but it's also augmented by groundwater from several wells. While the water does receive some chlorination and UV, the surface water does have higher turbidity at times. And turbidity is really a measure of the cloudiness of the water, small particles, organic matter, that kind of thing in the water.

And higher turbidity levels can interfere with water treatment, and can be an indicator of potential presence of human pathogens which can cause illness. Arsenic is also present in the groundwater in this system, but treatment is in place and it's effective. There are major concerns with adequate supply of water for this system, and obviously treatment objectives for surface water aren't being met and sometimes due to the high turbidity and lack of filtration.

It should also be noted that there have been drinking water advisories on this system in the past. They've been resolved. There was, several years ago I believe when the UV system wasn't working properly, but it has been resolved.

So the good news is the proposed connection to the new Cove Bay water treatment plant will bring the system into compliance, once that new water treatment plant has been commissioned.

Next system, Cove Bay. This is the largest water system on Bowen Islands, more than 650 residential and commercial properties. Supplied by surface water from Grafton Lake.

As is common knowledge, this system has challenges. It only provides chlorination, there's no secondary form of treatment, no treatment for parasites or cysts, and turbidity is often high for long periods of time. As a result, this system does not meet the treatment objectives for surface water.

Therefore, the system also operates on a continuous drinking water notice for people with compromised immune systems, and a further drinking water notice is now also in place during times when elevated turbidity is detected in the system.

So, the new water treatment plant with the filtration is designed to produce water that meets all of the treatment objectives. So that will resolve all these issues, and we just need it to get going to get it commissioned.

Next we can move on to the west side systems. On the west side we have Blue Water Park, Bowen Bay, King Edward Bay and Tunstall Bay Water Systems.

So, Blue Water Park, Bowen Bay and King Edward Bay currently are technically three separate systems, and it's supplying water from a series of groundwater wells.

There are various levels of treatment throughout these systems. Some have no treatment, others have some chlorine, and some others have full chlorination and UV as well. So, while there's no immediate risk identified, we are in the process of getting groundwater risk pathogen assessments completed, or that actually I think have already been completed, mostly, and really it's to assess the risk out of these groundwater sources.

So, haven't really been done as far as I know in the past. In the past, I think we would look at wells as being a safer source, which in general they are, you know compared to surface waters, and that was often the extent of the assessment.

So, yeah, the results of the GARP assessments are currently being reviewed to determine risk rating, which will determine if treatment objectives are being achieved.

Potential treatment upgrades may be required, depending on the results of the assessments.

The real concern on this side of the island is water quantity, and a project to connect these three systems is underway, and should hopefully address this concern.

Tunstall Bay Water System primarily supplies groundwater from a number of wells, but it's also augmented by one surface water source out of Explosives Creek.

So, the water from the surface source receives chlorine, UV and filtration and is meeting our treatment objectives [43210?]. Water from some of the wells receives some chlorine only but other some of the deeper wells are still untreated. So similar to the west side systems, GARP assessments have been completed and results are being reviewed to determine kind of next steps, you know, what treatment may or may not be required.

Next slide.

So this slide shows just a summary, sort of, the municipal water systems and their status in terms of meeting the treatment objectives. So the question mark, you know, means at this time, we don't have enough information to really determine if it's meeting... There's quite a few question marks on there, but you know the good the good news is where there's a question mark, I think we're actively working to answer that question. Working in the right direction.

And you know obviously the x's means objectives aren't being met, Bowen Bay, Eagle Cliff, but as I mentioned that would be resolved once the new water treatment plant is commissioned.

And that's all I have to say for my side of the updates and I'll pass it back to Dr Choi.

Dr Alex Choi, VCH

Why don't we flip back to the last slide. I just want to look at this for a second, um, because you know, just in, in really summary of what we've been seeing here. So you know, we had Phil going through what are the treatment objectives, and Ross going through whether or not we're meeting them.

You can see that there are some areas where we currently have a concern. And you know, to be honest many of these concerns would have been ameliorated or eliminated with um the new filtration plant that was supposed to go into Cove Bay. So, when we look at you know Hood Point, we're great there. We're meeting 43210, as you can see on your screens. No problem there. Eagle Cliff, we do have potentially a concern which would have been fixed by connecting to Cove Bay.

But Cove Bay, we currently have multiple areas of concern where we are not actually meeting treatment objectives. And as we are experiencing delays, this becomes more and more concerning to us. As all of you know, you know within VCH our role is really to look at whether there are public health risks inherent in the current water system, um, bring that to all of you and, potentially, put on some additional measures to mitigate those risks. And you know, I think that's why we're coming here today because we are suspecting that if we continue to have further delays, we are going to need to take action. We do have some water systems where there is, are, assessments ongoing to see if we're meeting treatment objectives.

So you know Blue Water, King Edward, Bowen, Tunstall, we may have to come back, again, when we have some more information, to provide that to you, and provide advice as to what we might need to do in terms of treatment. But we can say, right now, that given what we're seeing with Cove Bay, you know we are seeing some treatment objectives not being met. You know I do want to give full credit to this council, previous councils, uh, and staff, um, in the incredible amount of work that's gone into this and particularly with the hiring of professional engineer, incredibly important, and critical to this project.

But, as we continue to see delays, and you know, I think on the VCH side, we're we're not professional engineers, we can't say, you know, we can't make recommendations as to exactly what this is, what needs to be in the system, how things need to be solved, but what we can say is that right now treatment objectives are not being met.

And so, as the population has grown, that's become more of a concern to us, because as you might be able to tell, you know, if a water system like this one where treatment objectives are not met is serving one or two people, on a population level that's less of a risk than if it's serving hundreds. And that is the situation that we're finding ourselves in today.

What was once a system that was serving fewer people, and posing less of a risk to health is now serving more people. And at the same time our treatment objectives and our guidelines have changed over the years, and gotten, you know, more, they've

prioritized safety to a greater degree. So now we're seeing more of a mismatch between where we need to be and where we currently are.

As a result of that, there are a few things that we will likely be talking to staff about, and talking to you about in the coming months. This is particularly if there continues to be delays with the filtration system at Cove Bay. These things could include things such as increased monitoring, and we are in discussions with staff right now, as to how that could happen, and how could that come online.

Increased notifications. So, as all of you know you know, we have that ongoing notification that has been on for many years, that warns people with immunocompromise, that they need to treat, boil their water. But it is possible that if the current situation continues, that we might need to expand that. So for instance, you know, there is quite a lot of tourism on the island, folks who come over from elsewhere, to stay on island, and some of them may not be informed, because they don't, you know, they're not able to read the Undercurrent, they don't know that it's on the website. And so notification of those folks, might be one of the things that's required. Another thing that could be, that could have implications, is the permits that we would be allowing. We have permits being issued conditional upon completion of the, um, of a filtration system that has been [inaudible]

So, you know, if you flip to the next slide now, you know we do have a number of concerns, but this is this is really what it comes down to. We have a water system that has been like this for many years and we recognize that, but the population has grown, and our treatment objectives have modernized, and there is a growing gap between these two things which has led us as VCH to have more concerns, which is why we're coming here to you today. There are some other ones on this on this list that have to do with that.

So, you know population growth is obviously part of it, because again, the more people you have, the potential greater the risk, because you just have more people at risk from the system. You know, there are also some structural things that I have to, I have to admit I think could be a challenge, to actually solving some of these issues. So the governance system you know, just to be completely honest, of the water systems of Bowen Island is more complex than we typically see.

And the funding model is somewhat more complex than we typically see. And you know, in my personal opinion, and again, this is my opinion, but you know typically with water systems, we see funding available for ongoing capital improvements, because water, you know, costs money, and maintaining a good water system costs money maintaining this kind of infrastructure for this kind of population growth costs money. And so, you know, in order to maintain sufficient treatment capacity, sufficient quality, there does need to be ongoing investments.

There are also part, parts of the island, and Ross mentioned these, that do have limited water supply, and that's going to be another issue that we would like to flag. Again, you know our role within this, we are flagging some of these risks, and our tools would be things like notifications requiring more monitoring, as well as some of the permits. Those would be some of the tools that we might be discussing.

You know we haven't, we haven't arrived at the final plan yet. We would like to do that in conjunction with your staff, in discussion with you. But we would like to, we wanted to have this conversation, to let you know that it is there, the concern is there, and we would like to start having these conversations with you.

With that, I think that's all we have prepared for our presentation. But we're very happy to take questions. As I said at the beginning, you know I do feel this as sort of the beginning of a conversation.

These are ongoing things that we're going to have to work together on. But we would like to really work collaboratively with you at every step of the way, and you know we've already been speaking with staff, um, and are very thankful to Liam and Patrick and others, um, for their incredible work. This is a very complex issue that's been inherited, but you know I'm confident by working together, we can, we can come up with something that works.

Mayor Andrew Leonard

Thank you Dr Choi. I'm going to take questions in a minute. Just possibly the first one, because I know that there will be members of the public watching this as water issues on Bowen continue to percolate up into public consciousness, and I was wondering if just before we get into questions and discussion, whether you can comment more specifically on VCH's role in water systems vis-a-vis you know what a municipality has.

I would just hate the public to think that VCH runs the water systems and then you're ultimately responsible. So I just wanted to give you an opportunity to get out ahead of ahead of that one.

Dr Alex Choi, VCH

Thank you, I think that's an excellent, excellent point. And you know I try to sort of flag in the presentation, but I think it is very complex because, as you know with water there is many different folks involved. So you know, for instance if you're going to look at the licenses to take water for you know commercial purposes for instance that's a that's completely different area that's that really belongs to industry.

We are really looking at the per..., like looking at the water system from a regulatory point of view. We are not water system operators. We do not build water systems, nor do we operate water systems.

What we do is we look at how those water systems are functioning, and comment on the risk to public health stemming from those water systems. And then we work collaboratively with water system operators and yourselves, um, to work on some of those issues. I don't know if Phil or Ross, would you like to add to that?

Phil Muirhead, VCH

I think you summed it up quite well. Yeah, like we just we're the regulatory oversight, really. We're here to kind of help you guys understand, what the requirements of the Act and of the regulations that are placed on all water systems and how to move towards that, sort of keep that process going forwards.

And it's also, we've had lots of experience with other water systems and these things, so we can, we can sometimes give advice on certain things, but we're not, we're not, we don't make the choices of what type of system goes in, like Alex said. We don't design systems. We don't say you know, thou must put this in, all we can say is you have to put treatment in to meet the treatment objectives, which, which way, which piece of equipment you use to do that, and what works with your system is kind of up to the water system operators like you guys have done before. Getting an engineer on board to help out with that [inaudible] Alex said, and oversight, is kind of the best thing going for you.

Yeah, and just, and then, it's the ongoing things too, like we're just making sure that things like the emergency response plans is a big thing for us right now, making sure that we have a very robust [inaudible] we work with you guys as well, operators, to make sure that they've looked at all aspects of their system. We've said, well you know with this system over here. we knew that this happened. Do you have coverage if that was to happen to your system?

That just kind of opens your eyes to maybe some things you're not aware of. That's where our expertise comes in.

Mayor Andrew Leonard

Great, thank you so much for that additional context. So, you know, for anybody watching, and listening, Vancouver Coastal Health is the regulatory, regulatory authority, um, um, that oversees some of the water systems, some of the testing, and then the municipality's role is the capital investment, the choice of the type of system, the building, the operation and the financing. I just wanted to make that very clear, so that you folks don't get a ton of letters from the public saying fix our water systems.

Okay so I'll take a list, so we have Councillor Saunders, Councillor Morse, Councillor Gedye and Councillor Fast. So, starting with Councillor Saunders.

Councillor John Saunders

Thank you. Thanks very much for, um, reiterating stuff that unfortunately we already know, [inaudible] but on as well as that like I think you understand you gener[inaudible], the information you gave us and the way you present it means that you understand the sense of frustration we have, because we are aware of these things and we are trying to do what we can. Um, my, I mean I've got questions, so I'll only ask one, and I think probably this is, this would be directed at you, Mr Muirhead. You indicated the level of turbidity in our source water is higher than we want to see and that may be causing

some of the problems, well, it doesn't meet assessed the rank, so it is a problem. Have you experienced it, you know, across your, or any of you I guess, across your experience, have you come across where that turbidity level could actually be contributing to the problems with getting the place commissioned, getting, you know, like the source water, there's too much turbidity, therefore the system can't work.

Phil Muirhead, VCH

Um, well it's just how much levels of treatment is required, right, and then certain forms of treatment can handle certain turbidity levels, so it's knowing the [NTU?] and I understand you guys did do a pilot project, maybe Ross can speak a bit more of that, but yeah, the piloting is the importance to see, and through all times of the year, we've had water systems where we've gone through like three years of piloting, because we really wanted them to have a really nasty weather situation to know whether their system could handle, robust enough to handle the turbidity, and it turned out that they were going with a point of entry type system where every home had, had treatment and it turned out at the scale that they're doing at it was unmanageable. Does that answer your question? Or...

Councillor John Saunders

It's close enough because I know I can't pin you down on this, on legal opinion or anything like that, it is one of the issues we're facing though. Is, is the plant at fault because it's faulty equipment or because our water sucks to start with or anything on those...

Phil Muirhead, VCH

it's just the level of how much you got to treat it, right, and just you have to put in more and more pre-treatment, yeah, if your filter clogs up, yeah you put in a coarser filter to get some of the gap, and that kind of thing. Um...I think...

Councillor John Saunders

I think you answered it though, as well as we can at this point.

Dr Alex Choi, VCH

I think this is another area where, um, the rules become really important, because I think again, you know, we're not professional engineers, we're not water system designers, so what we would not be able to comment on is whether, you know, current issues with the plant are the fault of the [inaudible] and any, we're not able to comment on that and ...

Councillor John Saunders

that's what I was trying to get [inaudible]

Dr Alex Choi, VCH

Yeah, of course, what we can comment on is the different types of treatment that we would require as the regulator for different types of turbidity, and different types of notification we require for turbidity, but I know that's, kind of, like, it's not exactly what, what the question is..

Councillor John Saunders

You've done the best you can, thank you.

Dr Alex Choi, VCH

Thank you.

Mayor Andrew Leonard

[inaudible] Councillor Morse

Councillor Alison Morse

I've got four questions. Um, so looking at the treatment objective guidelines, just so I understand, um, the minimum treatment objective, so log reduction of viruses, so you want to see 99.99 percent of the viruses removed from the water is that, that's treatment effective, is

Phil Muirhead, VCH

Yeah

Councillor Alison Morse

Okay

Phil Muirhead, VCH

Providing that your source water is at a certain level and that's another document that's out there, it's um source water guidelines, it's by ministry of environment for drinking water.

Councillor Alison Morse

So then the next question is, how do you know that those treatment objectives have been met or not met, is that the weekly samples that go into the Vancouver Coastal Health lab, or how did...

Phil Muirhead, VCH

it's it's putting in equipment that's been validated and some known log reduction stuff, so every piece, like you know, chlorination is given a certain amount of credit if it's done a certain way, and so what we make sure is that you're monitoring all the little checks to ensure that the treatment's working, not the end of the line. And if you're just waiting for something to show up...

Councillor Alison Morse

...at the end...

Phil Muirhead, VCH

in a test bottle..... you're not actually looking at all the risks that your system could be open to, right, we want to make sure every stage of the way, there is a way to monitor to know that equipment is working right, every single day, because if your water test is telling you don't drink the water from two days ago, it doesn't really help the population. It does help show that maybe there's something going on in the distribution system, but we want to make sure that every step in the treatment has got steps that you can monitor and check and have your operators look at it every day, and then Ross and his role as a drinking water officer will come in and say, let's look at your test, you know, your log sheets from the last few months since I've been here, and you'll look for areas where there might be some dips, or, or, you know things have gone abnormal, and ask why they were, the action that's been that went on at that point.

Councillor Alison Morse

So, the next question is, relates to water supply some of the systems are on wells and they're sharing an aquifer with a whole bunch of individual wells at private houses, so we have no idea how much water those wells are drawing out of the aquifer. Now, is there any way so we can't necessarily test the whole aquifer recharge if I'm understanding things correctly, um, so is there any way that you people can require private well people to put meters in or advise how much....

Phil Muirhead, VCH

No that's under a whole different water branch and I mean...

Councillor Alison Morse

So we need to bug them...

Phil Muirhead, VCH

there is aquifers that, there's places that people do monitor aquifers, there is groundwater specialists, and in water land and resource sectors or resource stewardship ministry and maybe even ministry environment are out there and there's a whole well law too. The only way that you're going to get every well known is you might have to do a survey in that community to understand what what people's wells are and do it under the premises like you're here to try to understand how much water is being used in your community to try to figure out water balancing. It would be, it would be a good extra thing to do, if you're unsure of it, because registration of wells while it's required now, wasn't really a requirement before 2016, it was more of a voluntary....

Councillor Alison Morse

we know where all the wells are it's just we don't have any idea whether they're using...

Phil Muirhead, VCH

there's a whole mapping system ...

Councillor Alison Morse

200 gallons a day or 500 gallons a day sort of thing, yeah. And then my next question is, um, the GARP assessments, I assume we're doing those.

Phil Muirhead, VCH

Yes. That's a requirement for you to look at, and that's to answer all those question marks...

Councillor Alison Morse

...because we're just in the budget process for the water systems for this coming year so if there's money needing to be spent we need to know quickly, yeah

Phil Muirhead, VCH

Yeah, and it can make a huge difference between, you know, the cost between a GARP and a GARP virus, well, can be quite a bit, because you're not having to look after a lot of

it, put in a lot more treatment, and so it sort of pays off in the long run. First of all, it answers your questions whether, at what level, uh, risk is there but if you can get the hydrologist to show that it's just for virus, you can save quite a bit of money on the treatment later on.

Councillor Alison Morse

And I guess my last question is, as you know, there's lots of private systems on the island and they have to follow the same rules that you've like here

Phil Muirhead, VCH

depend, when you're speaking of private, what, how do you talk about community systems that are [inaudible] or..?

Councillor Alison Morse

like Cowan Point Utility, for example, is a very large utility and then there's a bunch of smaller systems that you know would have 20, 30 users,

Phil Muirhead, VCH

Correct, yeah, all the same.

Councillor Alison Morse

Yeah, thank you, and they and everybody has to be licensed by you people, right?

Phil Muirhead, VCH

Um, no.

Dr Alex Choi, VCH

It does depend on the size of the water system, so as Phil was saying, you know, two or more, there are some water systems, there are some sources for instance that are just used by one, one property, or one by one user with one connection and those would not be...

Councillor Alison Morse

Yeah

Dr Alex Choi, VCH

Um, but as you're saying like many of them um would um would be under our...

Phil Muirhead, VCH

There's, there's three things, [inaudible] come up, well, one is registration. That's somebody who drills a well, registers a well. It puts your pinpoints you on a map you can everybody can go to and it can say there's a well here. The next one is, um who's going to be licensing, so you're needing it for certain situations other than a sink you know for residential use um, it would need to have a license and that's given by [] so Minister Water Lands Resource Stewardship

Dr Alex Choi, VCH

[muttering] yes...yes...

Phil Muirhead, VCH

and then in certain situations if it's now a system that's serving a lot of people then you need a permit, that's what we issue, is the operation permit..

Councillor Alison Morse

and same applies for surface water

Phil Muirhead, VCH

uh surface water, would, they would need the, they wouldn't do the registration, they would need the license and they would need the permitting part. Yes.

Councillor Alison Morse

Thank you.

Mayor Andrew Leonard

Thank you, Councillor Morse. Uh, Councillor Gedye, Councillor Fast, and Councillor Jergenson.

Councillor Judi Gedye

Thank you for your presentation, it's, um, I think really important for my, my understanding, and I think several other people. I'm on the Cove Bay Water System and, um, when you say, you know, if there's more delays and it doesn't fulfill what we're expecting eventually then um what you're going to have to take action, so what would those steps be? I mean we should be putting out a notice it's got three x's across that chart um

Dr Alex Choi, VCH

That's right. So I would say that there's maybe three different areas where we're thinking about taking action right now. One is extending the notifications. Um, so we have that notification that's on the municipality website, that tells folks about the need to boil your water if you are immunocompromised, um, same goes out in the Undercurrent but I think what we'd be saying is that if there are further delays, which to be honest, um, this is not a six months from now thing, this is something that we're going to start talking to staff about right now, um this would be extending those notifications meaning requiring that folks who are, um, you know who have their airbnbs, who are renting out their spaces, that they would need to have this sort of notification in their space. Um, perhaps putting something near the ferry terminals, more public notifications so that people would be able to see them more readily. Um and in times of greater turbidity, extending those notifications to encompass other groups, not just those who are immunocompromised.

Most extreme version of this obviously would be a boil water notice on the entire system um, but you know, I don't think we would get there quite yet. We'd be looking at sort of a graduated kind of approach, um, based on the risk that we see in the system. So that's number one. The notifications.

Number two would be requiring uh, increased testing, so for instance um, right now, if we're looking at commissioning a different system, one that encompasses the tank but not the filtration plant, um that allows us to do more real time monitoring of the system for things like turbidity, and so that might be the second group of actions that we require is increased notification, or, sorry, increased monitoring, so that we have more tools to make actually make our assessment. And that's again, if we see increased risk we want increased monitoring, to make sure that we have a good idea of what's happening on the ground.

The third area that we'd be looking at in terms of action would, um, be potentially changing permitting. So, you know, obviously, this is an island where we've seen a lot of growth. And in order to have more connections to the existing system we may require that you have a completed commission system before those connections would be allowed to occur. So you know I I again I want to be honest here, like I I know that that would have implications for growth and development, and that's why we want to come to you early, because those are some of the things that we are considering right now.

So those three action areas, notification, monitoring, um, and permitting, are the three areas that we're currently considering, but again, you know, this is what we'll be discussing with staff and with yourselves as time progresses.

Councillor Judi Gedye

Okay, and the, Grafton Lake, um, that's the primary source for the Cove Bay Water, so there's considerable growth that is just starting around there, and plus, there's the whole island is, um, noticing increase in tourism, and that particular lake is getting an increase in terms of recreation, so lots more people swimming, apparently there were boats on the lake last summer, um, there's suggestion in terms of a parking lot being built in the um the south shore of it right, right up against the lake, so, um, in addition to these um viruses um cysts and turbidity, um, one of the things that we learned about at the last trust council meeting was some research that's coming out of Washington in terms of a new chemical that they're using in tires that affects salmonids. May or may not have an effect on humans. So in addition to these three particular major concerns, are there other substances, I've heard stories about, anecdotal stuff about the chemicals that are in some of the sunscreens, and you know various other things, so as there's more people in the water are there more contaminants that are not being tested for that we should be concerned about. And, and I'm personally quite amazed that we haven't actually, and I'm speaking a heresy here that I'll get letters about this, but, um, the swimming in the lake, and that kind of public access, um, it's not just the, the deer and the beavers and the wildlife, but it's uh it's quite a significant increase in the use of that lake recreationally. So are there other things that aren't being tested for that we should be paying attention to and thinking about for the future, especially as in, there's more droughts, it goes down, and it's you know more concentrated, maybe. I'm not sure what the, the scientific terms would be, and more people and more, uh, attraction in terms of all the tourists coming and doing the walk around the lake and maybe having a swim and bringing their dogs and all the rest of it. Um, is there some something that we should, is, are there things that we are not paying attention to that we should start to.

Dr Alex Choi, VCH

Yeah, great question. So, there's a, there's a few things in there, I think. So first of all, um, when we talk about these requirements, those are not the only things that are tested, but those are some of the things, um, that are in our guidelines, so you're totally, you're absolutely right, there are new concerns that arise over time that are evaluated, um, by usually federal authorities that let us know you know what sort of, um, what sort of you know chemicals or contaminants might be a new concern and they do do regular reviews on those things, so we keep track of exactly these issues. But you know, I think that your question around source water protection is you know a very important one. I think there are definitely areas where, ah, drinking water source is used for recreational purposes as well, um, but you're right, I think that's one of the things that we can also take a look on, look at, so you know source water protection. Um, if you know, and you're on the ground, you know best, and if you're saying that you know source water,

um, may not be as protected as it was in the past, that is something that we'd want to take a look at as well, and so, so we can definitely discuss that with staff. Is there anything else you'd like to add?

Phil Muirhead, VCH

No, I think you got it right. Yeah, what we, uh, we do, the 43210, it's a disinfection that's referring to biological stuff, but the guidelines for Canadian drinking water quality applies all across Canada, it is our go-to book, that you list every type of thing that could be in the water, like a lot of chemicals as well as just general chemistry. It's two different things, chemistry is all your things you normally find in water, whatever levels it is, and then you have all the other stuff that you look for like arsenics, which is not as big of an issue. Surface water, but as, as, um, Ross has pointed out there is some, a lot of wells around that do have to go for that level of treatment, so yeah, that is another level of treatment. And, yeah, I guess, you know it is going to be a balance between how many people are using the water um over certain times if there's certain things going in. It is hard to test for every chemical out there unless you, you know, very specifically look for one, and you have to go and take, spend a lot of money for that. I mean, we are kind of fortunate here, we're, a lot of our water is fresh it comes in rain, unlike other places where their water is coming out of a river which was another town city. Discharging, you're dealing with a lot of pharmaceuticals, pf ...it wasn't a p... pfas is which other those old forever chemicals that are showing up in some places, um, you know unless you've had specific incidences of dumping in the area or, probably not going to be a concern for that type of water, but that is showing up more and more and the more we look for it and the levels are talking about like parts per trillion. We're going to be finding it everywhere too, so you have to kind of look at the balance of what's in the water and what comes out of it and um, there's other forms of treatment that can help with with removing some of those things too if you find that you're getting more and more of it showing up. But specifically? Yeah, I I don't think, I think it's just highlighting the concern, the biggest concern is going to be things like um cysts and grd and parasites and and those type of things which elevates the need to have the you know the water treatment happening sooner than later

Councillor Judi Gedye

especially with our population of little people and old people.

unknown female speaker

exactly

Councillor Judi Gedye

Yeah, okay, so we're about to start an OCP amendment process um, hopefully, so um what if any role um might we tap into in terms of Vancouver Coastal Health when we start getting into some of these future, um, ideas in terms of water protection and possibly permitting and you know, regulations from the municipal side of it.

Dr Alex Choi, VCH

So we're very happy to, uh, review OCPs and provide input on really anything, um. You know, we're, we're, we have a number of different types of [tape jump] happy to provide comment on things like active transportation, how we're developing healthier communities, so we, we definitely have members of our staff who are happy to be involved in that process. So feel free to reach out and we will definitely assign members of our staff to help with those aspects as we receive those requests

Councillor Judi Gedye

My last one I guess

Mayor Andrew Leonard

...your very last question...

Councillor Judi Gedye

It was a letter, um, and I'm, I simply draw it to your attention, I'm not expecting, it's very late uh addition to the agenda, and I don't want to blindside you with anything but there is a letter that talks about um person's experience, I don't believe it was on a system, but there were um you know some groundwater issues so um, Mr Adamson your name is mentioned specifically so uh I brought it to your attention. I'd be very interested in, in terms at some point, somehow, hearing comments but you know in terms of just how we process some of these issues would be very helpful. i think

Dr Alex Choi, VCH

Yeah, so we, we did see that. I think that was the letter that was attached to the agenda package, is that right, on page 260? Was it...

Mayor Andrew Leonard and various unidentified speakers

...it..

...agenda...

...prepared—

laughter
it's on the whole agenda

Dr Alex Choi, VCH

But I think, uh, some of these issues are where those, those pieces of jurisdiction become very important. Unfortunately, it is not within our role to approve water usage, um, it is also not within our role to deal with, um, dumping, that is that is not part of our, that's not part of our role. What we would deal with actually is, whether or not it was impacting the, um, the quality of the complainant system. At the time the system that was being written about was actually not in compliance. It is now being brought into compliance as a system because it does serve multiple connections. So, but, but that is now uh being, being done, so that is underway, um, and the, uh, the facility that the person was complaining about is also in compliance in terms of the way that they're dealing with their grey water as well. So, that has been, um, you know further updates on our side, but we are very happy to be part of those conversations, um, over time. That would be an interest.

Councillor Judi Gedye

Thank you.

Mayor Andrew Leonard

Thank you, uh, Councillor Fast, and Councillor Jurgensen.

Councillor Sue Ellen Fast

Thank you

unknown female speaker(s)

page 279...
laughter..
...who cares...

Councillor Sue Ellen Fast

Very close. I just uh, uh, thank you for coming to us to talk about human safety, it's important for all of us to be uh thinking about. Um, my, uh, following up from, I've just got a couple. Uh, following up from, uh, Councillor Gedye here, do you have, uh, baseline data from wells on Bowen about what chemicals or

Dr Alex Choi, VCH

Yes

Councillor Sue Ellen Fast

or pharmaceuticals or pc, you know, petrochemicals, anything that's down there, because I'm thinking with climate change, uh, more extreme weather events, sometimes flooding, the forever fire chemicals,

unknown male speaker

Yes

Councillor Sue Ellen Fast

Is, I'm talking about there any of these kinds of baseline data, or would you recommend that we get this. We're an island. Because we have really high density of wells and septic beds island wide some of which are in our municipal system.

Phil Muirhead, VCH

Well, some of our community systems are required on certain frequencies to take a chemical analysis and send that in for all the chemistry, so that's again, just your general chemistry, um, if there's been a specific thing like a hydrocarbon spill or something, then, we we've been dealing with one up in Powell River right now, it's an old site, there was a gas station, then, we, that's an extra level testing on top of what it is, but under the general chemistry it's been happening, um, I'm gonna have to be honest to say our database on that it's been really poor. Because right now it's just, literally, just pdf documents in a in, a file, we are in the process right now, the whole province is been working hard on a, it's the environmental health information system and a big part of it's going to be the drinking water system where all this information is going to be going into a common database along with Ministry of Environment's testing information for theirs, they've got a lot of wells out there that are just measuring, um, groundwater in certain areas, that's all going to be going into a big massive database which then we're going to be able to access and pull out information like that. Right now, it's, it's, it can be there but it's, it's difficult to find. Unless you ask for sampling at a specific well and for a specific system then we have to go through our, they're almost like paper files in a way, electronic paper files, to find it. It's not coming out, it's a real query that we can pull out easily ...

Dr Alex Choi, VCH

But some of the information can be found in the regular water reports that are published every year for the municipality. Yeah, so some of that testing is accessible readily for the public.

Councillor Sue Ellen Fast

Great, thank you, because I'm just thinking cumulative over time and with the changes in uh not only growth and density of humans but uh uh My second question is just about uh possibilities of wildfire on our Mount, our three big water towers that we think of, is that the mountains that have the forests on them, uh, uh, wildfire or logging, industrial logging, could either of these be something that would uh uh [e]ffect the water quality and is there suggestions from a health perspective that you would have or other things

Dr Alex Choi, VCH

Yeah, so you know, a lot of these to be honest would require specific assessments, so even something like looking whether or not we need to look at a specific chemical in the water, honestly, would be a significant assessment to see, you know, what is that land being used for, to see if we need [inaudible] test for a specific chemical and I think a lot of these are the same, um. But I think some of the issues that we've already flagged, um, would be significant issues that, um, would potentially get more severe over time. With things like climate change the possibility of wildfires because obviously if you have a water quantity problem, you know, having further growth and wildfires is not going to help that, and that's part of the reason that we're flagging some of these issues for you today, because we do suspect that over time, these may become more severe and so we do want to make sure that we are anticipating those, because those kinds of infrastructure, uh, pieces can't be done overnight.

Councillor Sue Ellen Fast

Thank you. That, yeah, I just I'm, I'm thinking we need the healthy forest ecosystems, and what you're saying is, is reinforcing that, and my question I think was more really about, uh, turbidity than the chemistry, and, uh, and I think you answered that before, Phil. So my last question is just, um, the timeline here. We, you mentioned that the uh, uh, guidelines have changed over the years to be safer, and uh I remember a couple of terms ago when we first heard from Vancouver Coastal Health if I've got this correct that we need to a plan to have a water treatment plant. Uh, um, was that because guidelines have changed federally or is it just that they generally incrementally were changing, or is, what, what's the timeline that we're still responding to. When did it change.

Dr Alex Choi, VCH

So, I think it's hard to pinpoint an exact point in time because I think these things are quite incremental, and they, you know, they extend over years. Um, I guess in terms of you know what level are they changing at, this is not you know like a VCH change or a Bowen Island change or a North Shore change, this is something that's happened federally, that the guidelines have changed over time. Even if you look at you know our recreational water guidelines changed a couple of years ago, these are things that happen incrementally, um, and I think you know part of the part of the reason that was flagged at the time if I remember correctly and you know I think that was 10 to 15 years ago, it was a while ago that that occurred, but, um, you know my understanding is that it was a combination of the guidance has changed and the population has increased. So. Again, that, that split between where you need to be and where you are is growing because the population is increasing and the guidelines are changing. Um that has only continued since over the past 15 years, um, and you know I don't think there's a there's a hard point where we'd say that you know this is the point at which things change. But I think you know we are getting to a point where you know we're waiting for this treatment system to come online for quite a while, and now we're reaching the point, in our opinion, where we do need to take some action. So you know, in terms of our timelines for action, I think they are pretty much now. Like, we are, you know, we are planning on taking action imminently as a result of a change that has happened over a prolonged period of time.

Councillor Sue Ellen Fast

Thank you.

Mayor Andrew Leonard

Thank you, Councillor Fast. Uh, Councillor Jurgensen.

Councillor Alex Jurgensen

Okay, um, I just have one question regarding the systems we already have, like the Alison, uh, Councillor Morse, sorry, refer to them, the private systems. Um, you mentioned there being a kind of a size requirement. Does that size requirement automatically come into effect when two systems, uh, sorry, two users make a system? Uh I know you mentioned certain systems where it's one, one user, uh, one connection, it's a lot simpler. Does that automatically kick in as soon as there's two users on a system, or is it, uh, [inaudible]

Phil Muirhead, VCH

Yeah. it um. Currently at the moment we have a situation where single family dwelling, anything other than a single family dwelling, um, is a water system, so you could have

one connection that's serving a restaurant, that's a water system. If you have two neighbors that are sharing a well, that's a water system if you have a person who has a primary residence and they have a coach house in the back of their yard, that is considered a water system. Are we looking for those ones that are, got somebody's coach house, no, but we do come across them and that's why we have to bring them into compliance. Now there has been a slight change with what we've defined as a single family dwelling. You can now have up to three rental units within the same building providing that they're the primary owner is living there, so basically your in-law suites which were technically a water system even within the same house, because it's no longer you know a single family, you're renting it off to a student or something, that would technically be a water system which was totally unmanageable. So the province has recognized that they've adapted that, yeah, you can have like three little rental places either short term or long term within your primary residence and still have it. It doesn't carry on to the coach house, if you have a separate building off from your house it's still at this moment going to be basically considered a water system. Now there is a big push to change that, you know the recent changes with the zoning in the province where they're looking at allowing more than just a single family dwelling on a property or actually, I think they're trying to wipe that completely off, we pointed out, well that's going to create a water system every time somebody puts a coach house on so they recognize that there's probably going to be some change in the next few years. But of course you're changing Acts and regulations do take some time, but there there'll probably be a time where that's going to get relaxed a little bit. It might get to the same point where you can have a I know like as long as it's on the same property you might be able to have one or two outdoor outbuildings and it will still not be considered a water system, but for now it is.

Councillor Alex Jurgensen

Perfect, that answers that question and then some. Thank you so much and thank you so much for the presentation as well.

Phil Muirhead, VCH

You're welcome.

Mayor Andrew Leonard

Thank you Councillor Jurgensen. I see our CAO with his hand up.

Liam Edwards BIM CAO

Thank you mayor, I just wanted to extend my appreciation to Dr Choi and um and the team for coming out and presenting to council. I really do appreciate all the work and support that you provide to us, and I look forward to, um, having you back when we

actually commission this Cove Bay system, and so, that that's something that we are all very, very anxiously awaiting, so and I think I think you can appreciate that so thanks again.

Mayor Andrew Leonard

Thank you, Mr Edwards. And just a question here, so bringing us back into the scope of our own water system and what's on island and and some of the pieces of the presentation here, um, one of the pieces I I picked up on, which is around the governance and funding model of these, of the water systems as they sort of stand here on the island, that I'm curious and perplexed about, given, um, the way that we seem to have structured water governance here on the island with our seven LSAs, um, you know since the inception of municipality, 99, with, uh, local advisory committees that are supposed to be neighborhood oversight into, um, uh, into, into these water systems, while at the same time coming into a term of office where the cupboards are bare financially, all of our systems need work, and the money hasn't been put aside over the long term for the capital renewal and replacement, which leaves me with some very significant wonderings of how we got ourselves here, and and possibly what might need to change, and, um, one of the challenges I think that municipalities face is sometimes we can't see the forest for the trees, because we're so wrapped up here on our own island so I'm just curious if you've seen, you know, comparatively in other jurisdictions, you know what would be some changes to governance structures or or funding models that we could perhaps make, knowing that that's not officially your purview, but given that you gave some personal opinions, I'm, I'm curious about what you've seen in other, uh, in other jurisdictions.

Dr Alex Choi, VCH

Yeah, I suppose my overall comment would be that, um, it is unusual to have these, uh, local advisory committees and to have staff need to, um, have these decisions be put through that. It does create, um, just a bit of a hurdle, you know, in order to get these things approved. I think that the fact of the matter is, for a municipality this size, you know, having good infrastructure and safe water does cost money, and so you know, it might be a matter of how are we going to refill those cupboards so that money is available for ongoing capital investment. Because otherwise, you know, I think it's possible that we will find ourselves in this situation again. Um, you know, all of these water systems, you know, they even, even after the plant is commissioned it's going to need ongoing maintenance and it's very challenging um if that is only taken from, you know, the small group of users of that specific system. That to me feels like a very challenging environment. Um, typically, you know we, we find, and you know I think Mr Edwards may have um quite a lot of experience in this area as well as to how these things are structured, but you know I I do think that there are some hurdles here that staff need to overcome in order to make changes when they have to go through individual advisory committees, when they may not have the amount of funding that they need to make these ongoing capital investments, so you know, I think I, and I

recognize nothing changes overnight, um, but when I look at the water system, those are some of the things that jump out, um, in terms of what the barriers might be going forward.

Mayor Andrew Leonard

Thank you, that's, uh, that's helpful, and you know, I think even just getting that into the, everybody's had a chance to speak, so we're gonna, we're gonna move on after this

Phil Muirhead, VCH

{inaudible} one [inaudible] point, there's like I don't, Columbia Shuswap regional district dealing with this, and they put, I don't know if you ever seen it, but they put together a whole guideline on how they were going to take over operations of water systems for utilities that were failing, and they basically put together a whole package on that, and they looked at, you know, the viability of it, and how it was all structured, and how they were taking over. And actually they won an award at [inaudible] from it I remember years ago. Because it really set out how to take over, it says and that's something too, like, if there's other water systems on the island that are struggling that want to get, 'cause they can't get access to funding, whereas you guys as a municipality can get funding, um, and so looking at that, uh, for an island wide, what would it mean if another water system came up and said, listen we're struggling could, could Bowen Island municipality take us over if they're willing to do that...

unidentified male speaker

Right [inaudible]

Phil Muirhead, VCH

and have that structure set up ahead of [inaudible] so that was a good model to look at if you ever wanted to take a look at how to structure things.

Mayor Andrew Leonard

Well, I just I really want to thank you for taking the time to, uh, come here today and share both your thoughts and your expertise and, um, you know, really in a helpful and collaborative tone to ultimately work with the municipality so that we can, um, find a resolution to having safe, clean drinking water across, across the island, and from my seat, I think it gives us a lot to think about, particularly as we're going into an OCP review, particularly as, uh, we find ourselves in funding stresses as we're in this place of needing to renew all of this capital infrastructure around water, that the time, you know, is right, and maybe I'd like to signal the council, a little bit, that I I you know I think we're

due to have a conversation about what water systems and water governance on the island looks like, about those funding models, I know that we're doing dcc work and all that's coming down the pipes, um, but given the place that we find ourselves in and given the challenges that we experience with our water infrastructure and our utility infrastructure generally on the island, I think it's time to have a very serious conversation about um, um, where this goes and what it looks like for the future so that 30 years from now, ah, whoever's sitting in these chairs aren't dealing with the same, the same issues. With that, thank you.

Phil Muirhead, VCH

You're welcome, [inaudible] to come back anytime you want us but

Mayor Andrew Leonard

Sure, what are you doing two weeks from now....