

MINUTES

King George County Board of Directors

Work Session

Tuesday, May 16, 2023

The regular meeting of the King George County Service Authority was called to order at 5:30 PM by Chairman, Allen Parker in the Board Room of the Revercomb Building, located at 10459 Courthouse Drive, King George, Virginia, 22485.¹

Members Present: Chairman, Allen Parker
Cathy Binder
Jim Morris (remotely participated)

Members Not Present: Vice Chairman, Carrie Cleveland
Ann Cupka

KGC Administrator: Christopher Miller, County Administrator

KGC Attorney: Kelly Lackey, County Attorney

0:00:00.0 Mr. Parker: Due to a lack of a quorum tonight, we are going to open this meeting as a work session for the King George County Service Authority Board of Directors. We'll call the meeting to order an invocation by myself and the Pledge of Allegiance by Mr. Miller. Please stand as you're able. We have several, I guess, amendments to the agenda since we're opening this as a work session. We are going to pretty much just cover presentations and reports this evening, as most of the action items are un-actionable this evening. We will take public comment if there's anybody that has public comment at this time. Is there anyone online, Mr. Mr. Dines?

0:01:29.1 Mr. Dines: No, Mr. Chairman.

0:01:32.8 Mr. Parker: Seeing no public comment, we'll skip over the reports of the board members. And we'll go to report from the county attorney if there's any updates that you need to make.

0:01:43.5 Mr. Morris: Mr. Parker?

0:01:46.2 Mr. Parker: Yes.

¹ Due to a lack of quorum, the regular meeting of the KGCSA reorganized into a work session by the order of Chairman Parker.

0:01:46.8 Mr. Morris: Hi, I'm Mr. Morris here. For the record, I'm attending remotely, electronically, because I'm out of the county this evening, and I have no member report, board member report. Thank you.

0:02:00.7 Mr. Parker: Thank you, Mr. Morris. Report of the county attorney.

0:02:06.3 Ms. Lackey: Sure. Just by way of explanation to the public, the rules on electronic meetings provide that you have to have a physical quorum, even if you have a member remote. We appreciate Mr. Morris making himself available, but due to the absence of other members, we can't conduct voting this evening. I have a brief report I met this afternoon with the Walnut Hill folks who are here. If there are any questions for them I got them some comments on their agreement but we're not ready to have action, nor could we take an action tonight. But they are available for questions if there are any.

0:02:50.2 Ms. Binder: I don't really have one at this time.

0:02:51.9 Mr. Parker: Mr. Morris, do you have any questions?

0:02:57.7 Mr. Morris: Have they got that data that I requested reference to, what price range, and what size homes they're looking to build?

0:03:11.7 Mr. Parker: I think I've seen some data. I'm not sure exactly what.

0:03:17.2 Walnut Hill Developers: Good evening, Board, Mr. Morris, we do not have any information particular to our project in the houses that we would anticipate bringing. But I did provide Mr. Miller with some information that is available to me from afar, which is the Fredericksburg Area Association of Realtors. And I'm glad to share that with each of you tonight if that's appropriate.

0:03:39.2 Mr. Parker: Yeah.

0:03:40.0 Mr. Miller: Mr. Morris, I'll pass that on to you digitally.

0:03:46.4 Mr. Morris: Okay. Thank you.

0:03:55.2 Mr. Parker: Thank you.

0:03:57.8 Mr. Miller: And if I could emphasize, I know that Mr. Morris had also asked about, was the county... Did we look at the water's demands and things like that, and Mr. Young is here, who could speak to that, but obviously I think, as I pointed out, that was... That

prediction where their new proposal went was based on the fact that Mr. Young and Mr. Hoagland from county engineering had met with the developer and had arrived at an agreement that we felt very comfortable with from the water usage standpoint. Mr. Young obviously utilizes his analysis, and we can provide that as well if that's necessary.

0:04:54.9 Mr. Parker: Any questions? Alright, we'll move on to presentations and reports. Let's see about have Inboden Environmental Services, come up and give us an update on the water wastewater.

0:05:08.8 Mark Inboden: Good evening, everyone. There is a report that we sent to the county earlier today. It is twenty-two pages long and I think it has around 30 or so graphs or something like that. I completely understand. No one's had a chance to review this yet. But there are certain sections that I can just highlight for you. And then once you guys... Thank you. Have a chance to review it, our contact information is here. Feel free to ask us any questions about it as you'd like. This was very much, so the first utility report we've drafted. And as such, there's a lot of templating that we've had to put into this report. And so subsequent reports will be able to be finalized in a much faster manner. But we have to wait until the tenth of the month is complete before we can even start crunching a lot of our data, a lot of our analysis. Typically, we don't even have all the data back before the 10th of the month. That's when we have to report to DEQ. It's an all hands on deck to get everything reported to DEQ and VDH and the appropriate timeline. And then once that is completed, our compliance team kind of shifts over into doing a lot of this data analysis and reporting. The first page is simply an introduction, characterizing what the report is for and its purpose. We've broken it out into two different sections. One is the water section, then we have a wastewater section. And so, we have a brief overview section before all of the other reports will... And we'll get into all the other systems and wells as we go. But the overview is a synopsis, a summary, if you will, of the rest of the previous month's happenings. And so, under the overview, there were a lot of operational issues that we discovered on startup. Last meeting, we did discuss a few of those, but it really made us investigate the reliability of residual concentration of chlorine throughout all the water utility systems as a whole in the county. One of those, or several pieces to that would be inadequate chemical feed pump size, some clogged injectors and chemical feed lines. And then we also did a lot of adaptations and modifications to chemical mix ratios, instead of a 20:1 or a 50:1 chlorine to water mix ratio, some needed a bit stronger, or some needed a little bit less. And pumping rates were modified based on these known conditions. Through it all, there were about seven chemical feed pumps that were replaced, throughout the month of April we had five injectors that were replaced. And these repairs along with making sure we have the appropriate mixed ratios dialed in. And then with this, this really assisted us in improving the reliability of free chlorine residual throughout the distribution. We also identified that there were three sand filter systems that the automatic back washing process does is not

functional, it's not active. It's very much a manual process which is fine, but that automatic process should be brought back in. And we are trying to identify what needs to happen for that to take place, even if it can happen. More on that to come. We did identify that the Fairview Beach water treatment plant, the sand filter, it's a green sand filter with some anthracite, and it's designed to remove iron and manganese that are naturally occurring in the groundwater. The media is completely spent in sand filters. And when I mean spent, it's the sand has a specific charge, an affinity, a gravitation, if you will, for that iron to attach to that sand, and that charge, that affinity is no longer there. And so, it takes additional chlorine to oxidize that iron and minerals out before it meets the sand filter. And it's really rendering the sand filter non-effective. And we have been working with John Eisenbeis and his crew, which by the way I'll make a plug for John right now, you guys have a tremendous asset in the county with John. He has been instrumental in helping us. I would like to just mention that publicly here, so I appreciate your efforts, John. But the green sand, we've identified a vendor for the sand, and we are hoping a PO for that will come. Almost hit a button. Will come soon, and we can replace that sand in that medium for the Fairview Beach Water System. One of the main things to note, and as we get into the grass, it'll be very apparent for everyone involved, the significance of this issue. But the Saft well is offline. And the reason why it's offline currently is there are several holes in the well casing that allow silt and sand to fall into the borehole. It's just naturally occurring silt and sand. And it's not, it hasn't rendered itself a water quality issue, other than some sandy or silty water, but all the bacteriological samples have come back completely fine. But it is a concern of aesthetic quality of water. And then also, it's very damaging to all pump equipment that is put in there. And I believe there is a proposal or a quote from a well driller for that work to take place. And it's our recommendation as your contractor to expedite that as fast as we can. And once we get down into the grass, we'll be able to see why that's such an important piece of our infrastructure here. The circle system, there was a boil water notice that was issued for that system. A contractor dug into a water line and the water line had to be repaired. And due to that, we collected two special bacteriological samples. Both of those passed just fine. And the boil water notice was lifted. I won't go through each of these individually. I'll let you guys do that on your own, but just an overview. I'll go to, let's see this one, and I'll give you a rundown of what this data that we are presenting here for you and what it's really telling us here. At the very top, we do have water quality analysis, if there's anything that went wrong, complaints maybe or some violation of waterworks regulations, we would put that in the water quality section. Then we also have listed for you the bacteriological analysis that is routinely collected in the system monthly. We have those results there for you as well, and it's typical, you guys don't necessarily see this information, so it's very helpful that you do, in case there is an issue, it'll be made known. We have some operational notes for each of these systems. For the Dahlgren system, the Saft well is offline due to well casing failure, and then we also have a system production graph. This graph is a stacked bar chart, and each bar represents the total monthly flow in millions of gallons. Everything is color coded

based on well production, which well was producing what when. Now, some of the data we are working with here is of historical nature, so it predates us. And we're really pulling some of this information that was not gathered by us, essentially. So there have been some concerns about reliability. November, that's the data that we have. And so that's questionable. Also, in March of 2023, we do not have any production values for any of the water systems. We have some rudimentary data, but we were not supplied with those values. And we're trying to work with BDH to get those values. So, the data that you see here is an average, a 12-month annual average for each system. So, if you see here that the Saft well, well number two is indicated by this dark blue and as you can see, that is your main producer for the county. Well, for this system, for the Dahlgren system. That system easily produces 70% of your water for this system. And with that well-being offline, the other wells have to pitch in and do their best to keep up with the demand of that system. And I was just at the Monmouth well, and that well is running, yeah, 24 hours a day, or 1400 minutes in a day. Its uptime is 100%. And what that means is there's a potential for a critical failure. If that well goes down, what are our options? We do have significant reservoir capacity but that is a looming concern. And the effort to get the Saft well back online just makes it that much more important. And as we evaluate decisions based on either the cost of it, the economics of it and future development and future needs of the county, it's very helpful to consider the current needs and the current demands of that system. And so that's how we try to represent the data for you. And you guys are able to take this information and then make those decisions as needed. I'll give you guys some opportunity to ask any questions that you have about any of this information that we're providing.

o:16:26.9 Ms. Binder: Mr. Chair, Mr. Miller, did you send that to us? Because I just looked through my phone and I didn't see the...

o:16:33.8 Mr. Miller: The report. Yeah, I've got it, and I will send it right now. I was in Richmond most of the day, so I noticed that his report was sent.

o:16:43.8 Ms. Binder: If you can just send it to us. Thank you.

o:16:45.4 Mr. Miller: Yes, ma'am.

o:16:46.5 Mark Inboden: This report and apologize to Chris. This report was sent to Chris this morning at about 10 o'clock, so it, yeah and no fault of Chris. It was just a delay in trying to get it out there. So that's what I'm saying. Please go through it as you need and then feel free to ask questions.

o:17:08.3 Ms. Binder: I do have one question on the green, is green sand you mentioned, is that something unusual or an old process is why you having trouble finding it or?

0:17:17.5 Mark Inboden: No, we're not having trouble finding the sand necessarily. We did reach out to one of the vendors that we found online but they are a wholesaler, so we had to find a distributor. So that distributor has been found and they gave us a proposal to purchase the sand. There is some consideration based on the sand, the type of media, the size of media and the quantities that we need, but we were able to find those quantities and sizes that we need. And we're ready to go on that. We're ready to get that...

0:17:48.8 Ms. Binder: So, is it common to use or is it an older system use that product?

0:17:53.3 Mark Inboden: Green sand is a very common method of removing iron and manganese.

0:18:00.3 Ms. Binder: Okay.

0:18:00.5 Mark Inboden: Very an industry standard.

0:18:01.3 Ms. Binder: All right. Thank you.

0:18:05.8 Mr. Parker: No questions.

0:18:06.3 Mark Inboden: All right. So, we'll move on to waste water.

0:18:11.8 Mr. Miller: Mark, can you... I guess while we have you up here, can you describe what... And I know John Eisenbeis responded to it and took care of the situation in Hopyard, but last week they lost pressure and it had to do with something that switched over to automatic which is supposed to be manual but...

0:18:30.8 Mark Inboden: Sure.

0:18:31.1 Mr. Miller: Could you answer some of those questions? I know Mr. Parker in particular lives in Hopyard and I know he got a lot of calls and.

0:18:37.6 Mark Inboden: Yes.

0:18:38.8 Mr. Miller: Ms. Norris-Barker dealt with it and John Eisenbeis did a great job responding to it.

0:18:43.1 Mark Inboden: Absolutely, absolutely. So as mentioned, it's found, it's apparent that automatic processes are not active, not effective. And it's very much a manual process.

And there are components of that automatic process system interlocks, if you will, that are still present and so the way a green sand filter works is if there is head loss through pressure loss, if you will, through that filter. We call it TMP, transmembrane pressure. If there's a loss of pressure through that filter it indicates that it's clogged. And if you have an increase on the inlet side of that filter in pressure and a decrease on the outlet side, there's set points that are built into the system that will do one or two things. One, it'll call for a backwash, but if the backwash is not automated and it's not effective, essentially, it will go to an interlock state. And by that, I mean the system protects itself. It's kind of like your car shuts down. It will go into a limp home mode. And that's kind of what happened with Hopyard. There's a faulty valve on the inlet side where some air actuated valves are present that those valves had failed. And the solution was to just manually turn them off and not have that in an automatic process, was very much a manual process. And so going through this, there's one of those valves that was manually turned off failed and allowed air pressure, I'm sorry, water pressure to be present on the inlet side, but no pressure seen on the outlet side simply due to the nature of the processes that need to be fixed or that should have been fixed. And so what resulted is an extremely high pressure or high differential pressure that caused the well pump to fault out and causing that interlock and the system-wide that caused the loss of pressure in Hopyard. And that's what occurred there. So, we've made some changes. There's a secondary valve that we found, and John was able to respond to that immediately and got that system back online. And hopefully the redundancies that we've put in place will guard against that from happening in the future. So, happy to answer any questions about that too.

o:21:27.1 Mr. Parker: I'm good, thank you.

o:21:28.8 Mark Inboden: Okay. And then, this is April's report. The happenings in May, this was one of those instances that happened in May. That's going to be present in May's report when that comes out next month. All right. We'll go down to wastewater. Overall, the treatment plants did operate well. There were some permit violations on Purkins Corner and Oakland Park, and we will get to those specifically. And there were... Mostly the same issues that we brought before you at the last meeting. For the most part, the treatment plants did operate well, they. And they met the sanitation demand for the sewer service areas. We optimized several processes through the wastewater treatment plants to enhance better hydraulic management of the influent flows, to also better manage the nutrient reductions to gain better nutrient reductions, namely, nitrogen and phosphorus. And then just better chemical types that we have sourced and are using that will ultimately lead to cost savings and lower volumes being used and cheaper products that we have identified are still effective. That it also, those other chemicals do effectively increase our treatability at these systems. We'll go ahead and go to Purkins and Oakland. Those are the two facilities that we had issues with. Let me go down to, that's Hopyard. So, here's Perkins Corner. And

the issues that, or the violations that we had against the permit were TKN, which is a nutrient for nitrogen. It's inorganic and organic nitrogen combined. That's what that test is for and E. Coli. And the reason why these violations occurred is in plant A, there is a mixer, and a tank called the pre-anoxic tank. And in the process, there is a recycle from the main biological treatment process that circulates that mixed sludge or the sludge, if you will, back to that pre-anoxic tank, which is essentially an area in the treatment plant that has low or no DO, dissolved oxygen. And that is the main driver of nutrient TKN nitrates, nitrites, that's a main driver in the reduction of those nitrogen species. Additionally, because the mixer in that tank failed, that tank wasn't being turned over. And we had no effective treatment in that tank. But what it also did is it harbored the activated sludge that was sent back to that tank causing a decrease in biological mass in the aeration portion of the treatment plant. There were some immediate fixes that we tried to implement, and the first immediate fix is to shut down that train completely, plant A and try to send everything through plant B, but that will only overwhelm plant B. And we set up a temporary process of utilizing some blower equipment that was there. The King George County maintenance staff, John came in and was able to set us up. We modified a blower essentially to introduce some coarse air into that tank to provide sufficient or barely sufficient mixing in that tank to mix that tank good or well enough to bring our nitrogen and our TKN back down and restore treatment. And we've seen that to be effective, but it's a point of concern for us. The mixer that failed has been sent out for repair, and we're hoping that will come back quickly as these things are just not stocked on the shelf. Yeah, unfortunately we can't, there's no store to buy these at. Yeah. It's a very much a specialty item. It has to be ordered and I think it's from an overseas company too. So that was the reason, the cause, and the exceedance for Purkins Corner. Is there any questions regarding Purkins Corner and that issue that we had? Alright. Some of the data that you can see here. So, the first graph that we have is essentially combining all of the routine effluent monitoring data that we sample and test for the permit, on a routine basis. Purkins Corner has a three per week requirement, and we kind of trended all the data together so you can kind of see it all in one, not have so many graphs that you have to look at. The next graph below is the daily flow through the treatment plant and millions of gallons per day. And we can see that the treatment plant is averaging around 60,000 gallons per day. The next thing that is always a very helpful graph is a rolling 12 month look at historical flows and current contrasting month, that we are currently in for April. And you can see what flows were at this tree implant a year ago, and it's a very, very helpful statistic. And so that's what this graph here is for. Now we can go to Oakland. Oakland, there was, again, TKN issues that's the word of the day, TKN. And the reason for the TKN exceedances, it's a nitrogen species as first described. But we had nitrification inhibition, which essentially halted the denitrification process due to an organism that proliferated in the wastewater treatment plant itself. And that organism is a filamentous bacterium, and this was in plant A, and we were able to overcome that predominance by extremely wasting from that plant, plant A that side and receding it from another facility from the Hopyard, SBR plant. And that

quickly brought the treatment back to Oakland. And the TKN values, near the end of the month, dropped below the permit limits. And we always provide a letter of explanation to DEQ for each exceedance that we have on the permit. And so that is submitted to DEQ. They have all the reasons and the exceedance and what was done to correct the issue and also prevent it from happening in the future. And so that is essentially the report in a nutshell. And I'd be happy to take any questions that you guys have, and you certainly will probably have questions once you go through the report then and hold.

0:29:18.4 Mr. Parker: Do you have any questions, Mr. Morris?

0:29:23.6 Mr. Morris: No questions and I look forward to reading this more in depth. Thank you.

0:29:28.1 Mr. Parker: Ms. Binder. Any questions?

0:29:31.0 Ms. Binder: No.

0:29:32.8 Mark Inboden: Alright.

0:29:32.9 Mr. Parker: Thank you. Next up is the Service Authority expenditure report by Ms. Hahn.

0:29:47.1 Ms. Hahn: Good evening, Mr. Chair, members of the board. Included in your board packet was the cashflow report for the month of March for 2023. During the month of March, \$114,361 in revenue was received. This may look a little bit low when you look at it compared to every other month, and the reason being is that the reports from Munibilling were received after the treasurer's office had closed for the month. In the next report, you'll see April's usually a smaller month for revenues that'll show an increase in revenues next, in the next report. During the month of March, the water department had expenditures in the amount of \$190,090, and the sewer department had \$225,093. So total revenues, I should have said that for the year \$5,267,368, the water department expenditures of total \$1,354,268, sewer had \$225,093 in expenditures during the month of March for a total of \$2,207,726, for the year to date. And the transfers for debt service each month is \$114,961. The total that's been paid for that this year is \$1,034,652. The total expenditure for the year is \$4,596,646, leaving an excess of revenue to expenditures of \$670,721. Any questions?

0:31:38.0 Mr. Parker: Mr. Morris, Are there any questions?

0:31:47.7 Mr. Morris: No questions. Thank you, Ms. Hahn.

0:31:49.7 Mr. Parker: No questions from myself. Thank you. Did you want to do the general manager's report?

0:32:00.0 Mr. Miller: Unless you all want to go? I'm waiting. Okay. We have the general manager's report for today, the updates for the capital items for the Service Authority. And Bryce Young is here, but if you want to ask him more specific questions. Courthouse to Circle Interconnection project, the engineering and survey work is underway, reviewing 50% of the plans. This is one of the projects that's in the 5-million-dollar money that the Virginia Department of Health has provided the Service Authority. Courthouse to Canterbury Interconnection Project, which is also another part of this, there, that kind of similar work where they are engineering surveying work is underway and they're reviewing 50% of the plans. Arnolds Corner Well Replacement, that is also underway. It's under review and preparing for the bid process. We also then have the Saft Well Replacement, which is not necessarily the one that Mr. Inboden was talking about. There is a plan under the money that we received from the Virginia Department of Health to replace the Saft Well to do what we call Saft number two. We are in a situation, however, with the current Saft Well that we're going to have to replace a word of about 1000 foot of pipe, is that correct? Casing. So the status of that is, we reached out to a couple of contractors. We've got one. The plan is to make an emergency bid which shortens the time frame. That's the best option that Ms. Hahn has indicated that we would need to do an emergency bid that will probably run about a 10-day process, 11 days and then get that so that we can get this as soon as we can. We looked at doing an emergency procurement and we could do it that way too. I think the finance people will feel a little bit more comfortable with the emergency bid. We're going to do everything we can to get that so that we can get this well fixed so that it doesn't serve as a draw on our folks, on our system.

0:34:53.6 Ms. Binder: Quick question. How much could that run?

0:34:56.6 Mr. Miller: The quote that we got was about \$115,000. And so that's obviously something that we would have to look at doing perhaps that line of credit. And Ms. Hahn is working through the budget process right now. So that's something that obviously, if you send it out a competitive bid, you might get a little better pricing. But I think that, as Mr. Eisenbeis has indicated, you have got one big supplier, a big well repairer in the area, and they're the ones that responded. And we certainly have a good relationship with them. But I think there are others out there. It's just a matter of getting them to respond as quickly as we need them. Purkins Corner Water Wastewater Treatment Plant Decommissioning, as you can hear from Mr. Inboden, that can't come soon enough, but it is a lengthy process.

0:35:56.1 Mr. Miller: We're in year one of a three-year project. The engineering work is proceeding. Preliminary Engineering Report, PER, has been submitted and design work is

beginning. That is one of the projects that would be funded under the ARPA money that the county got, that the Service Authority got for roughly about \$16 million that is associated with wastewater projects. The Dahlgren wastewater treatment plant, sludge pond reconstruction. The contractor is Johnston, and they are on site performing the work. Fairview Beach Wastewater treatment plant pipe outfall project. That project is completed. This one will obviously stay on for a little bit longer in terms of being a completed project.

0:36:53.2 Mr. Miller: But those are essentially those major capital projects. We did talk about the AMI project at the last meeting and the AMI project, what that project is obviously, they kind of accelerated their time frame and so we're a couple of months ahead of schedule on that. But that is a multiyear project as well. But everything seems to be going well on that. I don't believe that anybody from the AMI folks or the Fortiline people are having any problems. Ms. Norris-Barker is doing a good job working with them and just coordinating all their needs. The only other item I think was in the General Manager's report and was setting up a time for the budget. I know that Ms. Hahn is working on that. I think we're going to be looking at the month of June because Ms. Hahn has obviously been deeply engaged with the Board of Supervisors budget and that we have another meeting scheduled to start our CIP on the 23rd. And I'll defer to Ms. Hahn if she wants to set a meeting up. I know she is going on vacation after the 23rd. There's a possibility that we could look at doing something on the 23rd before the Board of Supervisors, but I would... That would be something that I think we'd want to make sure we'd get a good amount of time. Like a 5 o'clock meeting. I think we're meeting at 6:30 on the 23rd. Is it 7:00 or 6:00? 6:00. Okay. We would have to obviously be gone by; the service store they must be done by 6:00. I'm just saying that could be a date that we could hold. I know we must coordinate with everybody's schedule. I know I'd have two board members there for sure. Right? And then miscellaneous other. I do think that we are very grateful that we have the Inboden contract and they're doing a great job for us. And I do think that I would echo Mark Inboden's comments about John and his crew. The maintenance crews have been indispensable working with them and doing all the other things that they're doing so far. The general office folks, Ms. Norris-Barker and Ms. Shelby Proctor are doing a good job working with this team in transition. But everything seems to be going well, addressing a lot of issues that they inherited and doing that in a way that... As minimal impact to the service as we can. I'll answer any questions.

0:40:00.7 Mr. Parker: Mr. Morris, do you have any questions?

0:40:07.9 Mr. Morris: No question.

0:40:08.5 Mr. Parker: All right. Thank you, Mr. Miller.

0:40:13.5 Mr. Miller: Thank you.

0:40:16.3 Mr. Parker: Do we need to make a motion to adjourn.

0:40:21.1 Ms. Lackey: So, we can't approve it, but you can call for adjournment as the presenter.

0:40:27.6 Mr. Parker: Okay. We're going to adjourn until June 6th, 2023, at 5:30 PM here in the boardroom.