



**1. Board of Commissioners to receive an update from Jamie Emery of Emery & Garrett Groundwater Investigations/GZA to include:**

**a) Artificial Recharge**

Jamie Emery informed the commissioners that he was asked to revisit the artificial recharge (AR) program that he had proposed a number of years prior. According to Emery, with Underwood's evaluation of the water supply options coming forward, the AR system, along with Mitchell Woods, is something that is being seriously considered. At this time, Emery shared his screen with the commissioners. On a map, Emery located Wells 4 & 5, and noted the proximity to the Merrimack River. He explained that the concept is to take water from the Merrimack River, which is not threatened, and artificially recharge Wells 4 & 5. He reminded the commissioners that the aquifer is capable of producing more water than what is available from natural recharge. Currently, MVD is able to pump roughly 625,000 gallons per day (gpd), or about 420 gallons per minute (gpm), but MVD is permitted to pump over 800 gpm. If MVD were able to provide sufficient recharge to these two wells, there is a potential net gain of 600,000 gpd. This would help to dilute the sodium and chloride levels that have been increasing over the period of the last 20 years, associated with the salting of the roads and subdivisions. According to Emery, this would also prolong the ability to provide good quality water to the wells, and with very low concentrations of PFAS in the river, this would reduce the maintenance of the carbon. It would be expected that this would prolong the life of the carbon. Emery stated that a few years ago Emery & Garrett looked at the various options to run a pipeline out of a surface water body. They looked at the Baboosic River, the Souhegan River, and the Merrimack River. The shortest pathway would come from the Merrimack River, across the railroad tracks, and onto MVD property. Emery noted the groundwater flow contours and explained that recharge basins would have to be put in the area where the flow of the surface water would migrate towards the well. According to Emery, test pits had been conducted to see if this had the potential to work, but nothing further was done. He also noted that there were some monitoring wells placed (AR 1, AR 2, AR 3). For preliminary consideration, Emery showed what AR basins would look like. He noted that they would be rectangular in shape and estimated them to be 100 feet by 35 feet. Emery informed the commissioners that he had put together a budget a number of years ago that included the total cost to be roughly \$3.5M - \$4M. He noted one of the bigger issues to be getting underneath the railroad. Emery stated that this cost to pick up about 600,000 gpd fell into the category that Underwood, in their cost benefit analysis, identified AR and Mitchell Woods as the next best options to consider.

Emery noted that it has been questioned whether AR can be something Merrimack can depend upon. At this time, Emery presented the commissioners with an article from the NH Business Review. He explained that this was a project that Emery & Garrett had done for the University of New Hampshire (UNH) and the Town of Durham, which was written up in the NH Business Review as one of the best projects in NH for water sustainability. He shared an image of what an AR basin looks like. He noted that this was a saving grace for the surrounding community and UNH during the drought of 2016. At this time, Emery shared a short video with the commissioners that describes the AR system. He noted that in Dover the AR system serves two purposes- it acts as a recharge system for the well, but also protects from migrating PFAS contamination from a major source of contamination. Emery explained to the

commissioners that one thing he really likes about this particular option is that MVD will be able to use their existing infrastructure. Emery stated that this option will take some time but is a great opportunity. Emery explained that in order to start the process to determine if AR will be technically viable, they will need to start pilot testing to determine if the river water will be able to be treated by the aquifer deposits. The aquifer deposits need to take out the total organic carbon, the bacteria, and the pieces of the equation that could potentially contaminate the ground water. He further explained that the pilot test is necessary and could be done through a column test at the wastewater treatment facility. The pilot test could also be done by creating the basins and placing a temporary pipeline to pump water from the Merrimack River into the basins to determine how quickly the basins can accept the water and monitor the treatment around those basins. He noted that MVD would end up spending roughly \$400,000-\$500,000 in the groundwater piece to get to the point of determining if the construction piece is needed or reasonable. That budget number includes determining if the aquifer deposits will remove the contaminants that might be in the Merrimack River.

Commissioner J. Lyons asked J. Emery to walk him through the outline. Emery explained that MVD is currently pumping roughly 600,000 gpd (or 420 gpm) and is capable of pumping 875 gpm, which is equivalent to 1.25M gpd. Commissioner J. Lyons asked if the treatment system can handle all of this. Emery explained that he believed the treatment system was designed to be able to handle the full 1.25M gpd. Peter Pitsas, of Underwood Engineers, stated that he would have to go back and check, but he believes that the carbon volume is based on the 625 compared to the 870 (no units of measurements were given with these numbers). He stated that he believes that the treatment vessel can handle it but will require more carbon. Commissioner Lyons asked what would happen if the pilot test was done in a basin at the location and the water was found to be of poor quality. Emery explained that the water would be tested prior to being put in and if it did not handle the water, it would only cause a short-term impact that would not involve taking the well offline. Commissioner J. Lyons asked how long the water can sit in the basins. Emery explained that they will likely be able to pull from the Merrimack River for ten months of the year because it is such a large source. He noted that this is a rare opportunity to take water on a more regular basis, but at other locations they have been able to mound the water and save it for use when necessary. How long the water can be held is something that will need to be modeled as part of the permitting process.

Chairman Provencher stated that he believed they had discussed having Underwood do a revised estimate for the cost of AR. Emery stated that he did a full detailed assessment in 2020, which came out to roughly \$3.5M, but bumped it up to \$4M as a budget number. Chairman D. Provencher noted that in the cost comparison AR came out as one of the top costs regarding cost per gallon per day. Emery stated that it was his understanding, based on a conversation with Pitsas, of Underwood Engineers, that AR, along with Mitchell Woods, was one of the top options to consider in the next 3-5 years. Chairman Provencher noted that he has asked for, and has yet to receive, an updated source alternatives cost evaluation from Underwood.

Returning to an earlier discussion, Chairman Provencher stated that he thought that the carbon vessels at Wells 4 & 5 were designed for 870 (no units of measurements were given). Pitsas explained that they are designed for that, it would just require more

carbon. He did note that he would have to verify that, but he believes that to be the case. Emery stated that the point of the AR would be to reduce the concentration of PFAS compounds found in the waters pumped from Wells 4 & 5. The reduction of PFAS would in turn increase the carbon filter life. Emery also noted that any additional source outside of AR would likely require the purchase of land, building a new pump station, running a pipeline, and other potentially high-cost infrastructure. Emery explained that there is some risk involved with AR with the potential to discover that it will not work. He also explained that they have done enough work in the past to feel comfortable stating that it is worthy of moving to the next step. Emery stated that it will take a year to determine if AR is a viable option. Emery reiterated that the initial steps indicated that it was worthy of consideration.

Chairman D. Provencher mentioned that he is aware that Pennichuck Water Works (PWW), amongst others, uses the Merrimack River as a surface water supply and asked if they were ever in jeopardy if the water runs to low, or if they have ever been advised to stop drawing out of the river. Emery answered that he does not believe so but can find out. Chairman D. Provencher asked if Emery was aware of any grant funding that may be available for a project like this. Emery answered that there is a Strategic Planning Grant that is due on December 9<sup>th</sup>. It would provide \$50,000 to a municipality for water supply projects, with one option being water supply availability. Emery stated that he would be able to submit for this, but it would require him to put together a scope. Commissioner Lyons stated that he would like to revisit the cost analysis chart. Peter Pitsas stated that he would have Keith Pratt revisit that. Chairman Provencher noted that he does not want to make a decision without all of the facts and would like to hear back about the source evaluations before moving forward.

**b) Sodium and Chloride Reduction Project**

Emery informed the commissioners that Chairman D. Provencher and Superintendent R. Miner went to the Selectmen's meeting, where Chairman Provencher provided a discussion on what will hopefully be accomplished by having public works reduce their salt use in the sensitive recharge areas to the wells. He noted that Well 3 has been taken offline because of high levels of sodium and chloride. That discussion led to the town board requesting a meeting with the Town Manager to discuss with Public Works what can be done to satisfy some of MVD's concerns. Emery stated that they did meet with Public Works and brought in a few people that are experts on the use of brine, which is using liquid salt to reduce the overall salt use. This would also reduce the cost of salt. Emery stated that he felt the meeting was very productive and created more active discussions.

**c) Wellhead Protection Signage**

Emery informed the commissioners that the Wellhead Protection Area signs have been ordered, have arrived, and MVD is now in possession of the signs. He noted that Superintendent R. Miner is coordinating with Kyle Fox (PWD) to install the signs. Superintendent R. Miner confirmed that he has all of the utility clearances and is all set to go. He is working with Lorrie Barrett (PWD) to schedule the placement of the posts so MVD can go in afterwards to put the signs up. It was noted that Superintendent R. Miner believes they will rent a hydraulic hammer for the post setting.

Emery informed the commissioners that he had an article published in the NHDES newsletter in the fall regarding treating the sodium and chloride levels in Merrimack, and the whole story behind it. He noted that it is getting a lot of press and people are interested in what Merrimack is doing.

**d) Well 9 permit progress**

At this time, Emery stated that it would not be inappropriate to put in a for a Strategic Planning Grant for the monitoring program in the wetlands in the area of Well 9. Chairman Provencher stated that he likes that idea as MVD has already committed to that project. Emery noted that he is frustrated with how slow the state has been with the permitting process and he has yet to hear back. The board was in favor of Emery moving forward with an application for the Strategic Planning Grant for the monitoring program at Well 9.

**2. Board of Commissioners to receive an update from Underwood Engineers for ongoing projects to include:**

**a) Wells 2 & 3 (9)**

Peter Pitsas, from Underwood Engineers, informed the commissioners that since the last BOC meeting, Underwood has received word that the VFD for Well 2 has been shipped to the electrical subcontractor's office. He also noted that they found out today that the Well 9 VFD is also there. The VFDs are very heavy, and a rigging company is being hired to bring them in and place them. Pitsas stated that the contractor was not forthcoming with information on when things would get delivered. Pitsas informed the commissioners that Underwood received an email from the contractor on November 7<sup>th</sup> stating that VFD for Well 2 was being shipped that week and the generator had already shipped. Some things have since been delayed and when Underwood reached out for an update, they received a response of "no new updates." The electrical engineer was on the email chain and responded saying that he had received the VFD for well 2. Underwood requested a schedule that they could share with the commissioners and the contractor did not submit one. Pitsas informed the commissioners that Underwood had a conference call with Superintendent R. Miner and together, with the information they had, decided to allow the contractor to start the work on the existing Well 2 building. Barry Miller is currently there cleaning the well and the well pump will be set this week. The process piping will be finished after that. Pitsas noted that most of the electrical work is done as well. Once the VFDs are in they should be good. Pitsas noted that he still does not know where the class 250 butterfly valve for the Well 2 building stands. If that has arrived everything should be available to put Well 2 together and get it online. He noted that rigging may have to be done twice due to the VFD cable for Well 9 not being on site. Pitsas explained that it was ordered too late. He noted that it was ordered in Spring of 2022 but had approval in August of 2021. Pitsas stated that he does not know why there was a delay. Pitsas reiterated that he does not have a schedule for the contractor and does not know when the GAC will be loaded, and the well will be ready to start up. Commissioner J. Lyons asked for the name of the contractor. Pitsas answered that it was Kinsmen Corporation.

Pitsas reminded the commissioners that Well 9 has not yet been approved by the state.

Chairman D. Provencher asked if the lack of power at Well 2 was no longer an issue. Pitsas answered that it was no longer an issue. Chairman Provencher asked if the butterfly valve was affecting Well 9 and Well 2 or just Well 9. Pitsas answered that it is only affecting Well 2 and is the critical component right now. Pitsas stated that he does not know where the generator currently stands, despite it having shipped, and the contractor has provided no update. Pitsas stated that they can function without the generator as it is not as critical as other components. Chairman Provencher asked if Well 2 was out of service now until the VFDs are installed. Pitsas answered that it is out of service until the treatment plant is functional with the VFD and the butterfly valve. It was noted that Well 2 should not be needed over the winter unless there was a mechanical issue with any of the other MVD supplies.

**b) Wells 4 & 5**

Pitas informed the commissioners that Underwood has heard back and is looking to coordinate the final day for Evoqua to come out and get the GAC. Underwood will coordinate this with Superintendent R. Miner. Superintendent R. Miner stated that they were looking at as early as November 30<sup>th</sup>. A purchase order has been signed and MVD has signed the contract for the media changeout.

Chairman Provencher asked if there was any follow up on the bed volume warranty with Evoqua on Wells 4 & 5. Pitsas stated that he was not prepared with that information.

**c) Wells 7 & 8**

Pitsas informed the commissioners that Underwood has straightened out the maintenance bond issue for Wells 7 & 8. He stated that they can move towards closing this out. Pitsas informed the commissioners that Wes still needs to get in and mount the iron analyzer.

Chairman D. Provencher asked if they were trying to do anything more to determine what was causing the restriction in the media. Pitsas answered that he will double check with Lynnette Carney. It was noted that Well 8 was just cleaned and Pitsas stated that he would like to see if that would help with the issue. Chair Provencher stated that the PFOA was breaking through much faster at Wells 7 & 8 and questioned if they would need to start discussing a media changeout, as it's a 6-month process. No real answer was provided but Pitsas noted that he believed the contract wording is what added time to the process.

**3. Board of Commissioners to review the proposed area for PFAS Mainline Extension Grant.**

At this time, the commissioners reviewed the proposed area for the PFAS Mainline Extension Grant. Superintendent R. Miner informed the commissioners that MVD has received all of the official documentation from NHDES and noted that MVD was approved for one extension. Once the location is chosen, Superintendent R. Miner can return the necessary documents to the state. Chairman Provencher noted that the front of the packet that had been distributed to the commissioners appeared to highlight Area 5: Gerard Drive and Palmeri Drive. Superintendent R. Miner noted that Area 5 is what he had in mind for the extension. Superintendent R. Miner explained that MVD tends to hear the most from people in that area and they are eager to access MVD water. Of the five areas, the commissioners had expressed that they were interested in which area was more vocal in their desire to connect to MVD. It was concluded that MVD has heard the most from residents in the area of Palmeri Drive. It was noted

that the entire neighborhood would be eligible to connect, but the red dots shown on the map document that had been shared with the commissioners indicated homes that would be eligible for a rebate program/grant as well. This program offers up to \$10,000 towards the connection to a municipality and would partially cover the entrance fees and the SDC charges as well. The application is done through NHDES, and MVD does the entrance application. *It was also noted that there is a grant available for up to \$5,000 for eligible homes who choose home filtration versus connection to a municipality.* It was noted that there are six homes on Gerard Drive that are not currently eligible for the grant, and two that are, all would still be eligible to connect.

Chairman D. Provencher noted that he sees the Area 5 estimated cost to be \$544,000, with the grant totaling \$1.5M. He asked what happens if the project comes in under the \$1.5M allotment. He asked if the remainder of the grant money could be used in another location. Business Manager J. Lavoie explained that it was \$1.5M per project. Chairman Provencher expressed that it was unfortunate. Area 2 (Greatstone Drive, Tomahawk Drive) is estimated to cost \$1.59M and could catch nine effected homes. It was noted that there is a lot of ledge in that area. Chairman Provencher did note that he was in favor of Area 5, based on the expressed interest of the residents, but was disappointed in not utilizing all of the \$1.5M available grant money. Superintendent R. Miner informed the commissioners that he applied for grants for each of the areas 2-5. NHDES only awarded one grant to MVD and MVD will get to choose where the grant is applied. Superintendent R. Miner noted that there will be additional money becoming available in time, which he does intent to apply for. Commissioner J. Lyons asked how the project gets funded if it were to exceed the \$1.5M grant. It was answered that MVD would be responsible for covering any additional costs. Vice Chairman K. Ayers asked how soon NHDES needs to be notified of which area MVD has chosen. Business Manager J. Lavoie answered that the sooner the better because it still needs to go in front of the Governor Council, which may take a few weeks. There was a concern that if not done quickly the funds could run out, but Business Manager J. Lavoie reminded the commission that MVD has already been approved.

**MOTION BY COMMISSIONER J. LYONS TO MOVE FORWARD WITH THE SELECTION OF AREA 5 FOR THE GRANT THAT WAS AWARDED FOR THE MAINLINE EXTENSION PROGRAM**

**MOTION SECONDED BY COMMISSIONER K. AYERS**

**MOTION CARRIED**

**3-0-0**

Chairman D. Provencher asked Superintendent R. Miner to confirm that NHDES will not allow MVD to piggyback another project onto the \$1.5M grant. Chairman D. Provencher asked the other commissioners if NHDES were to allow the leftover grant money to be used towards another project, if all would be in agreement of completing area 4 because the numbers add up nicely. Commissioner J. Lyons expressed his agreement.

**4. Board of Commissioners to review request from Ashley Lund of 9 Sharon Ave for the installation of additional hydrant in that neighborhood.**

Superintendent R. Miner explained to the commissioners that Sharon Ave is located in the area of Cota Road, off of Turkey Hill Road. He also noted that everyone within that neighborhood is within 600 feet of a fire hydrant. Vice Chairman K. Ayers referenced a map that the commissioners had and asked if the red dots represented current fire hydrants. Superintendent R. Miner confirmed that they did. It was noted that there was a fire at the power lines, which is where they would like to add a hydrant. It was also

noted that the fire was in close proximity to the homes in this neighborhood. Chairman Provencher asked what it would cost to add a hydrant. Superintendent R. Miner gave an estimate of roughly \$5,000. Superintendent R. Miner stated that it does not look to be a bad spot to put a hydrant in and noted that it would help with flushing. Superintendent R. Miner noted that there was money in the budget for adding new hydrants into the system, but it is done on a case-by-case basis. The MVD tries to be sure every residence is within 600 feet of a hydrant. The commissioners were in agreement that moving forward with this new hydrant was a good idea.

**5. Board of Commissioners to review the minutes from the September 19, 2022 regular BOC meeting.**

**APPROVAL OF MINUTES**

Board of Commissioners Regular Meeting . . . . . September 19, 2022

*No amendments were offered*

**MOTION BY COMMISSIONER J. LYONS TO ACCEPT THE MEETING MINUTES OF THE SEPTEMBER 19, 2022 BOARD OF COMMISSIONERS REGULAR MEETING AS PRESENTED**

**MOTION SECONDED BY COMMISSIONER K. AYERS**

*A Viva Voce Roll Call was conducted, which resulted as follows:*

Yea: Donald Provencher, Ken Ayers, John Lyons

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Nay:

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**MOTION CARRIED**

**3-0-0**

Board of Commissioners Regular Meeting . . . . . October 17, 2022

**TABLED**

**6. Board of Commissioners to review Action Items from previous meetings and items to be added from this meeting.**

The Commissioners reviewed the list of Action Items, removing tasks that have been completed, and making necessary additions. Of this numbered list, the commissioners addressed number 61, Underwood to present addendum to the source alternative cost analysis, as being important and noted that they would like to have this squared away at the December BOC meeting. Chairman Provencher stated that he is not comfortable moving forward with a source alternative until the updated cost

analysis is presented. Item number 65, Superintendent R. Miner to report on the hydrant investigation, was also discussed and the investigation is ongoing.

**7. Old Business - None**

**8. New Business - None**

**9. Superintendent's Report**

Superintendent R. Miner informed the commissioners that the Well Head Protection Area signs came out on the 14<sup>th</sup>. MVD has both the signs and the posts, and all of the areas have been marked out for Dig Safe. They will be ready for installation after the 18<sup>th</sup>. It was clarified that it will be done by pounding using a post pounder. Seventy-five signs have been ordered and there will be an initial installation of thirty-two signs.

Superintendent R. Miner let the commissioners know that Well 8 has been cleaned. Well 2 is being cleaned out and the pump will be getting set. Well 7 is scheduled to be cleaned in the spring.

Superintendent R. Miner informed the commissioners that he had priced the change out of carbon to cost \$66,588. He noted that he went with the acid washed for the makeup carbon.

Chairman D. Provencher asked about MVD switching to monthly billing. Superintendent R. Miner explained that MVD is still working on this, but he did not want it on the agenda until all of the information was available since there will likely be a lot of questions.

Chairman D. Provencher noted that in everyone's packets there was a letter from The Planning Board that was highly recommending that MVD drop the odd-even irrigation ban. It was noted that MVD is required to have a conservation plan when applying for grants, and the odd-even irrigation ban is included in MVD's conservation plan. It was explained that if a conservation plan is not in place, MVD would not be eligible for grant money as it would be viewed as not using resources to the best of their ability. It was also noted that the odd-even irrigation ban is not time restricted, that irrigation can be applied for the entire 24 hours of the odd or even day is allowed if a customer desires, and odd-even irrigation helps prevent further restrictions. Chairman D. Provencher requested that Jill research where odd-even is required as part of MVD's conservation plan, so that the planning board can be better informed as to why the odd-even restriction is in place.

**10. Questions from the Public/Press - None**

**ADJOURNMENT**

**MOTION BY COMMISSIONER J. LYONS TO ADJOURN**

**MOTION SECONDED BY COMMISSIONER K. AYERS**

**MOTION CARRIED**

**3-0-0**

The November 21, 2022 meeting of the Board of Commissioners was adjourned at 8:04 p.m.

Submitted by Amanda McKenna, Recording Secretary