

**RWSA BOARD OF DIRECTORS**  
**Minutes of Special Public Outreach Meeting**  
**November 18, 2004**

A special meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Thursday, November 18, 2004, at 6:00 p.m. in the Monticello High School Forum, 1400 Independence Way, Charlottesville, Virginia. The purpose of the meeting was to share information and receive public comment on the Community Water Supply Plan alternative to dredge the South Fork Rivanna Reservoir.

**Board Members Present:** Mr. William Brent, Mr. Michael Gaffney – Presiding, Mrs. Judith Mueller and Mr. Robert Tucker.

**Board Member Absent:** Mr. Gary O’Connell

**Authority Staff Present:** Ms. Anne Bedarf, Mr. Richard Defibaugh, Mr. Bruce Edmonds, Mr. Tom Frederick, Mrs. Mary Knowles, Mr. Glen Recknagel, Ms. Andrea Terry, Ms. Jennifer Whitaker, and Dr. Robert Wichser.

Also Present: Ms. Michele M. DeWitt – Facilitator, Mr. Aaron Keno – Gannett Fleming Project Team Member, Mr. Kurt Krueger – RWSA Attorney, members of the public and media representatives.

**1.0 Call To Order**

The special meeting of the RWSA Board of Directors was called to order by Mr. Michael Gaffney on Thursday, November 18, 2004 at 6:08 p.m., and he noted that a quorum was present. He explained that due to the number of Board members present, legal requirements specified that this public gathering become an official Board meeting. No Board actions would be taken tonight. Minutes would be prepared and submitted for Board approval at the December meeting.

Mr. Gaffney welcomed and thanked the public in attendance at tonight’s meeting. He commented that RWSA looked forward to presenting the information and receiving public comments and questions.

Mr. Gaffney next briefly provided background information for the benefit of the public who had not attended previous Community Water Supply Plan meetings. He stated that RWSA has a need to increase the community’s water supply for the next 50 years, which is the required time frame for permitting purposes. The four water supply concepts that have been selected for further study are the South Fork Rivanna Reservoir (SFRR) Dredging project, the SFRR Expansion by raising the dam four feet, the James River Intake, and the Ragged Mountain Reservoir Expansion.

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Mr. Gaffney further commented that at tonight's meeting, Gannett Fleming, RWSA consultant, would present factual findings regarding the concept of dredging the SFRR. Similar public meetings would be held to provide factual data on the other three alternatives. The next meeting has been scheduled for December 2, 2004 at 6:00 p.m. at the same location.

Mr. Gaffney commented that it is RWSA's intent to present the factual information to the public on each of the concepts, invite public questions and comments, and then clarify those findings as appropriate to questions and comments before undertaking the process of selecting the preferred alternative.

Mr. Gaffney added that information on tonight's presentation has not been made available to the Board or to the public prior to tonight's meeting. Copies are available on the sign-in table at the entrance to the Forum. This information will also be posted to Rivanna's website by November 22, 2004. By November 29, 2004, RWSA expected to have available for public review a technical memorandum from its consultant containing additional details on the dredging concept.

Mr. Gaffney stated that after Gannett Fleming's presentation, the public will be invited to offer comments and ask questions. He requested that the remarks be kept positive, constructive, and focused on questions and ideas that would assist RWSA to be as complete as possible. The Board has not made any decisions regarding the information tonight, has an open mind, and wants public feedback. The public can contact RWSA staff or email the Rivanna at its website with any ideas or questions that are formulated after tonight's meeting.

Mr. Gaffney then introduced Ms. Michele Mixner DeWitt, with Christensen and Associates, who was the facilitator for tonight's meeting. He stated that Ms. DeWitt was a University of Virginia graduate. She has a great deal of experience working with groups at the state, regional and local levels. Her facilitation work included the Virginia Strategy Statewide Economic Development Strategic Plan, the Governor's Post Attack Task Force Input Meeting, the Virginia Regional Housing Forums, and the Middlesex County Industrial Development Authority Strategic Plan.

Ms. DeWitt thanked Mr. Gaffney and welcomed the members of the public in attendance tonight. She inquired as to how many had attended or had heard about the September 21, 2004 meeting where all five alternatives were discussed. She noted that several in the audience had responded in an affirmative manner.

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Ms. DeWitt added that she recognized some in the audience tonight from their participation in the breakout session she facilitated at the September 21 meeting.

Ms. DeWitt next reviewed the agenda for tonight's meeting. She stated that the purpose of the meeting was to share additional information from the consultant on the SFRR Dredging alternative and to involve the community in the assessment of this strategy. The public would have the opportunity to ask questions and provide comments on the presented material. There would also be an exchange of ideas on creative collaborative solutions.

Ms. DeWitt next stated that in order to accomplish the above, Mr. Aaron Keno, from Gannett Fleming, would be presenting technical data on the Dredging alternative. Copies of his presentation are included in the meeting handout. She requested that all questions be held until the end of the presentation. Questions for clarity on the technical information will be taken at that time, followed by a public conversation on the alternative. The following questions have been included on the agenda for the public's consideration during this discussion period:

- *How does this alternative meet the community's need?*
- *What is troubling about this alternative?*
- *What are some potential opportunities or creative approaches?*
- *What are some dangers?*

Ms. DeWitt noted that since the meeting was scheduled to adjourn at 7:30 p.m., the "Requested Ground Rules for Participation" was included on the Agenda to afford everyone the opportunity to speak during the participation segment. She then proceeded to review the Ground Rules as follows:

- *Topics will be focused on the alternative presented during the meeting.*
- *One person speaks at a time.*
- *Prepared statements may be read, but we ask that they be less than 3 minutes in duration and be focused on the meeting purpose.*
- *Prepared written statements will be received and posted on the RWSA website.*

Ms. DeWitt requested that all comments be directed into the appropriate microphone in order to be accurately recorded for the meeting minutes. She also introduced Ms. Anne Bedarf with RWSA who would be serving as the timekeeper

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for the 3-minute rule. Ms. DeWitt then turned the meeting over to Mr. Aaron Keno for his presentation on the Dredging alternative.

Mr. Aaron Keno welcomed the members of the public in attendance tonight.

Mr. Keno briefly reviewed the slide outlining the Agenda for the Dredging Concept Review, which included “Meeting Objectives, SFRR Description and History, SFRR Current and Future Conditions, Concept Description, Evaluation Approach, Dredging Operation, Environmental Impacts and Cost Estimate, and Facilitated Input.”

Mr. Keno reiterated Mr. Gaffney’s earlier comments that Dredging is one of four concepts currently under consideration. Those four concepts were the results of the investigation presented in July 2004 in which all of the historical water supply alternative work was evaluated. Dredging and 4-foot crest increase at SFRR concepts each supply a safe yield increase, but do not provide all of the 9.9 million gallons per day (MGD) to satisfy the projected water supply deficit in 2055. The James River pipeline and the Expanded Ragged Mountain Reservoir concepts each could provide the entire 9.9 MGD. Detailed investigations on all four concepts are currently underway.

Mr. Keno stressed that the overall primary investigation objective is to “select the least environmentally damaging, most practicable alternative...”

Mr. Keno noted that the next two slides contained aerial photographs of the SFRR. The first one illustrated the reservoir’s long, narrow configuration. The second one highlighted the SFRR Dam area and included a schematic cross section of the SFRR Dam. The two blue lines in the graphics depicted the different water levels behind the Dam. He explained that the water level labeled as “Lowest Intake = El. 367” is the lowest level at the existing facility that water can be withdrawn from the Reservoir and used for the water supply. The 15 feet between the top of the existing crest and the lowest intake level has been designated as “Usable Storage.” The area below the lowest intake level is “Dead Storage” due to low water quality and the amount of accumulated sediment.

Mr. Keno stated that the next slide provided statistics on the original SFRR design, which was completed in 1966. The system safe yield at the original storage volume was 15.1 MGD.

Mr. Keno referenced the next slide which illustrated the projected sedimentation rate in the SFRR. The circled area on the left side indicated the original volume

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of the reservoir. The results of bathymetric surveys conducted since 1966 have derived an average sedimentation rate of 15 million gallons (MG) per year. Mr. Keno further stated that based on a 2002 bathymetric survey, the usable storage at SFRR has decreased from 1,250 MG to approximately 800 MG. The “Dead Storage” area has decreased from 450 MG to about 355 MG. Approximately 545 MG of sediment has accumulated since 1966. Mapping suggested that the sediment is located in the upper and middle portions of the reservoir. Data also indicated that the sediment is variable in particle size and not hazardous. Due to these factors, the system safe yield has decreased from 15.1 MGD to 12.8 MGD.

Mr. Keno pointed out that the graphics on the next slide illustrated a cross section of the lowest elevation level of the reservoir which indicated where sediment had accumulated.

Mr. Keno next described the characteristics of sediment obtained through material sampling. Samples vary from one with a fairly high sand content versus fairly low silt/clay content to absolutely the reverse composition. On the average, sediment is estimated to be roughly a 50 percent sand and 50 percent silt/clay mix. Results of chemical testing indicated that the sediment is non-hazardous material.

Mr. Keno noted that future sedimentation rate projections are depicted on the next slide. If dredging is not advanced as a water supply alternative, sedimentation is projected to continue at a rate of 15 MG per year. The use of forebays to capture the sediment before it enters the reservoir was discussed at previous meetings. After reviewing this option, it was determined that the large volume of sediment that needed to be captured in order to be effective made this an impractical strategy. In the July 2004 investigation, this concept was not advanced for further evaluation.

Mr. Keno also pointed out that if the dredging concept was not advanced and the sediment rate continued at the current average rate during the 50-year projected period, there would still be 400 MG of storage remaining in the SFRR in 2055. The reservoir would not fill up or become a “mud bog” due to accumulating sediment. Sediment accumulation would continue to be concentrated in the upper and middle portions of the reservoir and slowly migrate downstream. The sedimentation rate is likely to slow over time.

At this time, a member of the public requested that Mr. Keno explain further his last statements concerning the sedimentation rate. Mr. Keno referred to the previously viewed slide that illustrated the projected sedimentation rate. He

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explained that if the sediment continued to accumulate at the 15 MG per year rate, storage at the SFRR would reach 400 MG. The reservoir would not completely fill up during that time period. The sedimentation rate would likely slow over time due to less volume in the SFRR, which would increase the velocity of the reservoir flow. As a result, the sediment would flow through the reservoir and pass over the dam.

In response to another request from the public to ask a question, Ms. DeWitt asked that questions be held until the end of Mr. Keno's presentation due to the amount of material to be covered.

Mr. Keno next discussed future conditions if dredging is not advanced as a water supply alternative. He stated that water treatability is anticipated to be manageable through conventional water treatment. Water quality is not likely to change appreciably. The reservoir configuration will change over time as sediment would continue to accumulate. It is recommended that bathymetric testing be conducted in order to monitor the sediment. The sediment monitoring program would dictate future actions.

Mr. Keno next reviewed the slides dealing with the Dredging concept description. He stated that one of the keys to evaluating this concept is by the amount of the material that would be removed from the SFRR. It is projected that there is 450 MG of volume in the reservoir's usable pool with the existing sediment. There would be 600 MG of accumulated sediment in the usable pool by 2055. After 2055, sediment would continue to accumulate at a projected 15 MG per year, resulting in 75,000 cubic yards per year of sediment to be removed in order to sustain available volume.

Mr. Keno further stated that it is anticipated that there will be difficulty removing all of the sediment out of the usable pool due to dredging limitations associated with location of material and hydraulic equipment restrictions. It is estimated that 85 percent of the usable pool can be reclaimed, which equates to 900 MG of material. Associated with the nature of the hydraulic dredging, it is anticipated that some "Dead Storage" will also have to be removed. As a result, 1,050 MG of material would need to be removed in order attain the 900 MG figure. The 1,050 MG of volume converts to 5 million cubic yards (CY) of volume that would need to be removed from the reservoir, resulting in 100,000 CY of dredged material per year for 50 years plus 75,000 CY per year after 2055.

Mr. Keno commented that the next slide was included as a visual aid to better illustrate the magnitude of the 100,000 CY of dredged material per year figure.

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In Scott Stadium, the annual dredged material would stack up to approximately 26 feet deep covering the whole field. The total dredged material removed over 50 years would fill the stadium roughly 20 times.

One member of the public inquired if that figure represented wet or dry sediment. Mr. Keno responded that it was dry sediment.

Mr. Keno added that the removal of 1,050 MG of material would result in a system safe yield impact of 14.1 MGD and an increase in safe yield of 5.5 MGD.

Mr. Keno next discussed the approach used in evaluating the dredging options. After reviewing the various dredging operations, hydraulic dredging was chosen as the appropriate option for the South Fork Rivanna Reservoir (SFRR). Reasons for selecting this method included the long reach of sediments in the reservoir, removal rates, and approval of this option by the Corps of Engineers. Dewatering, sediment disposal/removal, and environmental mitigation are some of the activities associated with the dredging operation.

Mr. Keno briefly reviewed the major dredging requirements as follows: Site access, length of dredging/pumping, dewatering facility location/size, disposal requirements, and reuse of dredged material. All these issues were investigated, and pictures are included in the slide presentation to illustrate these operations. Local contractors and suppliers were contacted concerning the use of this material as structural fill or as some form of a fertilizer. During this investigation, it was discovered that currently there is a limited market in either of those categories for reuse of this material. A range was established reflecting the potential different levels of future material reuse in calculating project costs.

Mr. Keno noted that the next slide was key to understanding the evaluation approach and gave a brief overview of that process. He stated that the cost and feasibility were based on a range of particle size of the sediment. The material was assumed to be non-hazardous. The dewatering site needs to be adjacent to the SFRR due to the hydraulic dredging operations. Due to the topography of the area, there is insufficient room to build a large enough facility to conduct dewatering and disposal activities for the next 50 years without significant stockpiling. After removal, it is proposed that the material would need to be transported by truck to a permanent disposal site within 10 miles of SFRR. Cost estimates were developed, and as previously discussed, a range was developed to deal with the issue of marketability of the material. Cost estimates were based on zero, 20 percent, and 50 percent reuse of the material. The reused material must

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be delivered to a remote site within 10 miles of SFRR due to the reasons stated above.

Mr. Keno next discussed the hydraulic dredging process, which would operate 70-150 days per year each year for the entire 50 years depending on the material composition. Gannett Fleming estimated an operating schedule of 120 days per year. This is based on a 7-hour per day active operation, 5 days per week. The work must be done when the temperature is above freezing and requires access to the reservoir and staging area.

Mr. Keno referred to the next three slides which pictured hydraulic dredging operations.

Mr. Keno stated that based on survey data, the sediment is likely located over at least 14,000 linear feet of the SFRR, which is roughly 2-3 miles. A transmission pipeline would need to run from the hydraulic dredging operation up to the dewatering site. In the areas where the sediment is located on the same side of the reservoir as the dewatering site, that pipeline would move fairly quickly away from the floating operation and become a land-based pipeline up to the dewatering site. If the sediment is located on the other side, the pipeline would need to be strung across the reservoir to reach the dewatering site. Pump stations are necessary due to the amount of lift required to reach the dewatering site and must be located in cleared areas.

Mr. Keno noted that examples of pump stations were pictured on the next three slides.

During the discussion on the dewatering site, Mr. Keno stated that the site would require 20-65 acres adjacent to the SFRR. Gannett Fleming estimates were based on a 40-acre site. The area would include sufficient room for cell construction, embankments, material spreading, and material removal. The site may need to be cleared, although there are cleared sites adjacent to the SFRR. Access would be required for significant daily truck traffic. It also would require facilities for discharging water back to SFRR and erosion control.

Mr. Keno briefly reviewed the next five slides which depicted various dewatering sites.

Mr. Keno discussed the transportation and disposal aspects. He stated that the material would be dried and then trucked to a permanent disposal site. Gannett Fleming estimated 67 truck loads per work-day (assuming they are 6 CY trucks

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and 5 days per week). The disposal area would need to be 225-360 acres in size,

depending on the amount of material that is reused. The assumption is that the land would be located within 10 miles of the SFRR. It also assumed that the material depth at the disposal site does not exceed 8 feet.

Mr. Keno next reviewed the environmental impacts. He noted that the environmental impacts in general are not extremely large for a dredging operation and included the dewatering site, transportation corridor, disposal site, erosion control, noise, visual, recreation, potential dust and odors. Impacts to the drinking water and the reservoir would be minimal.

Mr. Keno gave an overview of the costs associated with the dredging operation. He stated that the total dredging project cost over 50 years is projected at \$127 million to \$145 million. The range is based on the percentage of material that is reused. Additional dredging in perpetuity is required after 50 years at \$2.1 million per year. These costs are raw water costs only and exclude water treatment, upgrades/expansions and other improvements. They are also not analogous to Appendix A Costs in the July 2004 Report. The concept does provide an estimated 5.5 MGD in safe yield increase, which results in a \$23 million - \$29 million per MGD of added safe yield.

Mr. Keno summarized the benefits and the risks of dredging. The primary benefit is an increase in the safe yield by 5.5 MGD, which is part of the 9.9 MGD needed to satisfy the projected deficit. There are long-term impacts to the adjacent community as discussed earlier in his presentation. There is also an ongoing need for a disposal site, which is tied to the public permitting process.

Mr. Keno stated that he had completed his presentation and turned the meeting back over to Ms. DeWitt.

Ms. DeWitt thanked Mr. Keno for the information he provided during his presentation. She requested that during the next two segments, questions and comments would need to be directed into the microphones in order to be recorded for the minutes. She then asked if there were any questions for clarity at this time.

**Public Question:** “I just want to know if you have done these figures for keeping the reservoir the way it is now? Have you worked out anything? When you look at the need for 2055 and you look at a combination of alternatives, keeping the reservoir at its present state can be part of an up scheme to do that. Have you worked that out?”

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Mr. Keno stated that at this stage in the investigation, they had not evaluated

proportions of dredging smaller than dredging the entire amount all the way back to the existing conditions. Gannett Fleming had done enough investigative work though that they could evaluate other options for lesser amounts of dredging in the reservoir. After each of the four concepts are reviewed at the same level as had been done for dredging, the next step is to look at combinations of concepts that would satisfy the 9.9 MGD deficit. During that process, the concept of whether it is a full dredging operation plus another concept or a lesser level of dredging combined with another concept would be investigated.

**Follow-up Question:** “So you do plan to do that?”

Mr. Keno responded in the affirmative and stated that they would consider various combinations of the four concepts that could satisfy the 9.9 MGD deficit.

**Public Question:** “I have two questions. 1.) Do you know anything about the turnover rate and the accumulation in the ‘Dead Space’? 2.) What is your assumption for the amount of watershed changes that are contributing to that sediment rate that you continue to model? I am assuming that the changes in the landscape do not seem to make a difference and be instrumental and how? Because a lot of vegetation we have in place now might be removed because of the land use practices and erosion of the beach and that sediment load is going into the creek.”

Mr. Keno stated that he would respond first to the latter part of her question concerning sedimentation. The sedimentation rate had been projected based on the average rate of sediment accumulation in the reservoir. It has been recommended that the amount of sediment accumulation be monitored over time. There are various factors that would affect the sedimentation rate, such as diverse uses in the reservoir over 50 years and the application of best management practices for erosion control. As pointed out in her question, watershed changes could impact the sedimentation rates. For projection purposes, the historical average from nearly the last 40 years is being used as the best information available at this time.

Mr. Keno further stated that there were two water quality issues associated with turnover in the reservoir. The first one dealt with treatability for drinking water purposes, which he felt was manageable as no appreciable change in water quality was expected. This would be the case whether dredging occurred or did not occur.

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**Follow-up Question:** “I was just wondering about that ‘Dead’ space. It’s just sitting there. There’s a lot of action going on, and it’s not turning around and not

being circulated.”

Mr. Keno commented that there is a natural turnover rate in reservoirs each year in this part of the country as temperatures change. The colder water is on the top and vice versa.

Ms. DeWitt stated that in order to keep on schedule, further comments on this issue would need to be deferred to after the meeting.

**Public Question:** “Could you clarify the testing that has been done and what needs to be done further on the sediment as far as chemical composition and hazardous nature. One place you said that the interpretive results say that it is non-hazardous. Another place in your evaluation you assume that it is not hazardous. How much do you really know and what are the ramifications if that changes and when would you know more for certain?”

Mr. Keno replied that as the investigation process continues for the four concepts, comparisons would be made to determine ways in which the 9.9 MGD water supply deficit could be met. During the evaluation, a determination would be made on which of those concepts would emerge as a preferred alternative and additional investigations would be conducted. It would be very costly to perform detailed investigations on each of the four concepts. Sufficient investigation would be advanced in order to have feasibility and cost estimates on all of the four concepts. Once the preferred alternative has been identified, various issues such as the one raised by this question would undergo a detailed investigation.

**Public Question:** “I’ve been thinking about what you just said just now. Some of these things are really important when you are going to decide which one you are going to take out. I have a couple of questions. 1.) I want to understand exactly what your vision of the reservoir is going to be as it builds up with sediment. You said that in 50 years, it was not going to fill up. When do you expect it to fill up? Do you ever expect it to fill up? What are the signs going to look like when it’s doing it? Will there eventually be some kind of plain on the side? 2.) You said that forebays would have to be too big to completely take care of the sediment. Have you looked at taking out part of the sediment to reduce the incoming material?”

Mr. Keno responded that it had been determined that the use of forebays was not a feasible option to be implemented solely as a water supply concept. They were

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too costly, too large in size, and impractical to continue as a water supply concept. The option of using smaller forebays to reduce sediment accumulation is still a possibility.

Mr. Keno referred back to the aerial photograph of the SFRR during his response to the part of the question concerning the vision of the reservoir. As illustrated by the slide, runoff from rainfall would continue to convey through the SFRR regardless of the amount of accumulated sediment. As stated previously, the 15 MG per year average historic sedimentation rate would likely decline over time. With a decrease in volume, less sediment would drop and more material would pass through the SFRR. In the larger flows, the accumulated sediment would be moved downstream. Over time, material would collect along the sides of the reservoir. Along the main channel, water would still move and push the sediment through the reservoir. The reservoir would trend to appear more like a river versus a mud bog.

**Public Question:** With sedimentation continuing to build up, inquired if the reservoir would get muddy sides with vegetation growth.

Mr. Keno felt that would be a fair description of the reservoir's appearance. He added that there were reservoir management techniques, such as varying the level of the reservoir, which could be utilized to control the vegetation growth.

**Public Question:** "My name is Carlton Ray. I am an aquatic ecologist. First, there is no question that pesticides are going into the reservoir. Have you looked at them really thoroughly? That is the first question, and maybe you want to answer that now."

Mr. Keno replied that the reservoir is being used now as a drinking water supply. The raw water is regularly tested at the SFRR plant for any materials that would not be suitable for raw water quality. Unless the usage changes in the watershed, it is not anticipated that pesticides would be a problem.

**Follow-up Question from Mr. Ray:** "The usage will change and they are changing. I think that will cause a real wrinkle in your machinery. Second, the national overturn rate in these lakes does not compensate for stagnation in the summer. You are going to have stagnation, particularly if there is a drought in the summer. The other thing that may be a problem is as the reservoir fills up, lot of the sediment goes over the dam. I don't think that is a very good idea to take our sediment and export it down the Rivanna River. That could be another real problem. To get to the point, I think that dredging is one of the only alternatives.

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My belief is that you must take care of the infrastructure we have now because in my view, and now also for a lot of other people, going to the James River is unacceptable.

“So, one thing I know that you are not responsible for is land use in the County. If it isn’t, I think it is your responsibility to recommend land use for profit seekers who could slow this sedimentation problem down and maybe even partially eliminate it. That could be done with some of the restoration, but I think we have to couple this whole problem with land use because our reservoir is going to come up; it is, over time. So, I wonder what kind of things you could recommend if the alternative is to dredge, dredge, dredge, dredge, and dredge? Your costs are going to go way beyond what you estimated because of what’s happening in Albemarle right now.”

Ms. DeWitt commented that the group had naturally moved on the public comment period.

**Public Question:** “First, does the dredging figure include dredging Ivy Creek? The second question has to do with access to the dredge equipment in the reservoir. It’s not small, often not clean, and you know that they are loud. The pictures showed both that the equipment has to get into the reservoir and has to get through from site to site on the reservoir. That has a lot of impact, both visual and noise. I wonder if you could speak to that as well?”

Mr. Keno commented that she made an excellent point and was accurate in her comments concerning the large impacts of dredging. He stated that the hydraulic dredging operation would move slowly over time but would cover several miles of the reservoir. Pipelines would have to be moved, as well as the pump stations along the shore line at times. The dewatering site should stay in the same location as envisioned at this point at a 40-acre site, but would need to be removed by trucks to a permanent disposal site.

Mr. Keno next addressed her question concerning Ivy Creek. He referred to the slide containing graphics on water levels behind the dam. He explained that water above the red line is usable volume which could be withdrawn from the Intake going into the South Fork Rivanna Water Treatment Plant. Any part of Ivy Creek that is in that usable volume area naturally is part of the reservoir fluctuations and would be dredged.

There were some additional follow-up questions concerning accessing the Ivy Creek area that were not audible enough to place in these minutes in their entirety.

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In response, Mr. Keno stated that new access would be required for dredging operations in the Ivy Creek area.

**Public Question:** A comment was made prior to asking a question concerning

dredging operations in other communities but was not audible enough to be understood from the meeting tape recording. “My question has to do with your investigation of what to do with the sediment. In doing some reading, I found that there seems to be a whole growth industry. They are using it with a mixture of glass; they are using for cement products. The Army Corps of Engineers actually has a development program for sediment use. How far are you willing to go with your investigation into the use of the sediment? I know you have talked to some community people about their sediment use as fertilizer, etc., but have you gone beyond that and contacted the Army Corps of Engineers?”

Mr. Keno stated that at this stage, cost estimates have been calculated over a range of potential for reuse from 0 percent through 50 percent. If the 50 percent level could be attained, he would anticipate contacting the Army Corps of Engineers and anybody else who might be interested in this material. He agreed with the statement that this is a growth industry and that reuse options do exist. After the reuse operations have been located, they need to be matched with your location and sediment type. In agricultural areas you get runoff, and sediment is very useful as organic material for land applications, such as topsoil and fertilizer. Due to the sand/silt composition of the sediment, it is not envisioned that it would be used for that purpose. While this investigation has not been conducted, their evaluation has accounted for a very aggressive reuse up to 50 percent. It was felt that evaluation of sediment reuse beyond 50 percent would not be reasonable due to the amount of the material.

**Question from Mr. John Martin:** “I talked to Mr. Keno beforehand, so I think I know the answer to the question. Make sure I understood. Until yesterday, it’s my understanding that the firm has not consulted with any other community in the United States to find out what their actual experience has been with a reservoir dredging project. Yesterday, insisted on making phone calls to Decatur, Illinois. Is that correct?”

Mr. Keno replied that it was a correct statement. Communities were not directly contacted, but a great deal of information had been obtained about dredging. The information presented tonight was based on contacts with dredging contractors, dredging experts, and suppliers dealing with reuse material, in addition to the detailed investigation that was conducted on this concept. As Mr. Martin indicated, his firm just became aware of the Decatur, Illinois project, which has

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been of interest to some people in the community. Based on the investigations done yesterday and today, he felt the Project Team had a better understanding of Decatur project. Mr. Keno offered to address further questions on this issue, but added that his information was limited to what was obtained during the last two days.

Ms. DeWitt commented that it was clear that there were a number of knowledgeable people in attendance tonight. She stated that it was time to move on to the comment period. She suggested that those who had not yet been heard tonight be allowed to express any comments they might have at this time. She reiterated that Ms. Bedarf would serve as the timekeeper during the comment period and asked that the 3-minute limit be respected so that the meeting could proceed as scheduled.

**Public Comment:** “I apologize for not making a comment, but the question is motivated by seeing this graphic. The three bumps on the right that represent the material that you believe would be dredged out could also be bedrock, like a ridge, no?”

Mr. Keno replied that if you look at the large relief across these depths, it is very likely to be sediment. There is also some indication of where the sediment is located from aerial photographs. He referred to the aerial photograph displayed in front of the room and stated that you could actually see where some of the sediment has been accumulating by the lighter areas. The volume calculations are known to be correct due to the surveys that have been done since 1966.

Ms. DeWitt added that Mr. Keno and RWSA staff would be available after the meeting to address additional comments and questions not covered during this comment period.

**Comment from Mr. John Martin:** “The SFRR is a very valuable reservoir and serves this community well. Many people think it would be unethical to do no more than dispose of it and walk away from it. There are some very important governmental decisions that need to be made with respect to whether to dredge or not to dredge. Unfortunately, look around here tonight; our government is not here. One Supervisor was here for a short period of time at the beginning, and he is not here now. We cannot do this by ourselves folks. We cannot do it. We have got to have the people who we elect to office to be knowledgeable about this and to work with Rivanna. There is no other way to do it.”

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Public Comment: “Just a follow-up on that. I apologize for commenting more than asking a question before. What Mr. Martin has in mind is exactly the point I was making. We have to couple land use. You have to get specific on that. Not just a little bit specific.

“I have a comment and a follow-up question too about this pesticide business.

There's been a lot of research lately about things that are getting into the groundwater. It's pretty scary. Tragedy is for those things to cause babies to go crazy. It's happening to frogs and not to people yet. Getting into the groundwater are hormones, growth and birth control pills. A lot of stuff like that. Those aren't being tested for. Another problem with the pollution thing is that the acceptable levels keep going down. Today's levels will not be tomorrow's levels for acceptable levels. The question is exactly how are the sediments tested? Unless deep sediments, and even shallow sediments, are tested rather than just water. Water test is no good for detecting contaminants in the sediment that you need to know. Exactly what is the testing procedure for finding out whether those sediments are contaminated or not?"

Mr. Keno stated that the testing was done on the sediments removed from the location under the water. He referred to his response from an earlier question on this issue in which he indicated that composition testing had to be conducted as part of the design operation before a dredging program could be implemented. This would include rigorous testing on all the requirements for hazardous materials.

In response to a follow-up question, Mr. Keno responded that sediment testing requirements would be based on all the regulatory agencies that are necessary for project approval.

**Public Question:** "During the worst of the drought, less than a mile above the 743 bridge, you could walk across the stream. I was wondering if this dredging is not done, how long do you think it would take before it looked like that again?" Mr. Keno stated that he was not sure that he could answer that question at this time. Ms. DeWitt stated that his question would be noted for future response.

**Public Comment:** "It seems we have an incredible problem trying to figure out what to do with the reservoir and/or where we are going to get our water in the next 50 years. If we can't seem to address the problems we are having here in the Rivanna Reservoir, how do we expect to be able to figure out the other problems we are going to have with the other reservoirs, and even going to the James River. Because the sediment problem and land use problems are going to be with us

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forever. They are only going to get worse. If we can't address these issues right here in the space that we have, with one watershed, how do we expect to manage ourselves in the future?"

Ms. DeWitt commented that if the person making the comment was able to attend future meeting, she could restate her comment at the meeting pertaining to this issue.

**Follow-up Comment:** ‘Living within our means.’”

**Public Comment:** I think that you said earlier that hydraulic dredging was the only feasible method. I may have missed where you talked about any consideration of doing some dredging with less expensive conventional excavation equipment from the shore the next time we do have a drought. Because two years ago, it seems like several areas were accessible and there were peninsulas throughout. Where their used to be islands, now they are underwater. At the time, some people from RWSA said they didn’t have permits. Wondered if there had been any progress on applying for those and having them on hand in case that seemingly cheap and simple solution presents itself again.”

Mr. Keno stated that was an excellent point. The areas referenced in his comment consist partly of the sediment that is exposed at reduced water levels. He noted the graph that illustrated the location of the sediment in the upper level of the reservoir. There was discussion at that time on using conventional excavating equipment to remove the sediment. The difference between removing some of that sediment and all of that sediment is the depressed level of the reservoir down to where all of that usable volume is gone in order to access the material by conventional methods. The need to be without the usable volume so that all the sediment could be removed is not considered a feasible option. Removal of part of the sediment in the upper level of the reservoir using conventional methods is still a possible strategy.

**Public Comment:** “I know you are going to try to sell this, but I guess it would be helpful for people, as it would be helpful for me, to visualize certain things. You talked about 67 truckloads a day coming out on an average. So, I think it would be great for the public to consider how many trucks come out of Luck Stone maybe a day. Since it might sound like an awful lot if you lived in the middle of nowhere, but maybe not a lot if you could imagine what it looks like on 250. The reason I asked that earlier question about what would it look like and would you be able to walk across the reservoir. I can’t get over the idea that you talk about that there would be less sediment; the rate of sedimentation would slow

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down. You said that it would go over the dam. It occurs to me that maybe it’s just too obvious. As it continues to fill in, there will be less water running through it and would carry less sediment. It’s going to have to turn into a bog at some point. I just think it would be helpful to put into a context that people could imagine what it’s going to look like if we don’t do anything. I think antidote information about communities that have experienced this would also be very helpful as we consider this option.”

**Public Question:** “As I look at that picture in the lower right-hand corner, how big is that dewatering site?”

Mr. Keno stated that he did not have that information at this time but would research the matter further.

**Public Comment:** As this comment was not directed at the microphone, Ms. DeWitt restated it for the record. The comment spoke of the opportunity to do multiple dewatering spots that could even be turned into wetlands.

At the conclusion of the public comment period, Ms. DeWitt thanked everyone for attending this meeting and reiterated that Rivanna appreciated their participation. She encouraged them to contact RWSA with any further comments or questions they might have after tonight’s meeting. She also invited them to visit Rivanna’s website for Community Water Supply Plan updates. Written comments were welcome and would also be posted to that site. She then turned the meeting over to Mr. Gaffney.

Mr. Gaffney thanked Ms. DeWitt for facilitating tonight’s meeting and also Mr. Keno for his very informative presentation. He stated that whatever choice is made after this round of evaluations, he believed visits to communities involved with the different aspects under consideration would be made. He commented that personally, and not speaking as a Board member, he hoped that this alternative moved forward for further investigation.

Mr. Gaffney also thanked the RWSA Board members who came to tonight’s meeting. Mr. Ken Boyd, Albemarle County Board of Supervisors member, was at this meeting for a short time, but his attendance was required at a Master Plan meeting held at another location this evening. Mr. Gaffney felt that the Albemarle County Board of Supervisors would be following the Community Water Supply Plan process closely and would be updated on tonight’s proceedings by the County Executive who was present tonight.

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Mr. Gaffney further stated that most importantly, he wanted to thank the members of the public who attended tonight’s meeting. The public’s input was vital to this process. The goal was to refine the questions and answers, get additional information, and have it posted on the website by November 29, 2004. He reminded those who had not done so already to add their name to the email list located on the sign-in table outside the Forum if they wanted to receive future meeting notices and updates. He also encouraged the public to visit Rivanna’s website at [www.rivanna.org](http://www.rivanna.org) to view the section designated for the Community Water Supply Plan.

Mr. Gaffney announced that the next Public Outreach Meeting would be held on Thursday, December 2, 2004 at 6:00 p.m. in the Monticello High School Forum. The purpose of the meeting would be to discuss the concept to expand the SFRR by adding a bladder. Meetings on the remaining two concepts would be held after the holidays.

Mr. Gaffney stated that RWSA would appreciate if you could complete an evaluation form concerning this meeting to assist Rivanna with planning future meetings.

Mr. Gaffney added that Mr. Keno and RWSA staff would be available after the meeting for questions and comments.

Mr. Gaffney adjourned the special meeting of the RWSA Board of Directors at 7:32 p.m.

Respectfully Submitted,

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Mr. Robert Tucker  
Secretary - Treasurer