

**South Fork Rivanna Reservoir Stewardship Task Force
DRAFT Minutes of Task Force Members Meeting
December 8, 2008**

A meeting of the members of the South Fork Rivanna Reservoir (SFRR) Stewardship Task Force was held on Monday, December 8, 2008, at 7:00 p.m. in Room 241 of the Albemarle County Office Building, McIntire Road, Charlottesville, VA.

SFRR Stewardship Task Force Members Present: Ms. Holly Edwards ó Charlottesville City Council, Mr. Mark Fletcher ó citizen from University of Virginia (UVA) representing recreational interests on the SFRR, Mr. Michael Gaffney ó Rivanna Water & Sewer Authority Board of Directors, Mr. Thomas Jones ó citizen representing property owners along SFRR, Ms. Karen Joyner ó Ivy Creek Foundation, Mr. Chris Lee ó Charlottesville Regional Chamber of Commerce, Mr. John Martin ó Rivanna River Basin Commission, Ms. Wren Olivier ó Sierra Club, Dr. Liz Palmer ó Albemarle County Service Authority Board of Directors, Mr. Dennis Rooker ó Albemarle County Board of Supervisors Mr. Ridge Schuyler ó The Nature Conservancy, Ms. Dede Smith ó Citizens for Sustainable Water Supply, and Ms. Sally Thomas ó Chair, member of the Albemarle County Board of Supervisors and representing the League of Women Voters.

SFRR Stewardship Task Force Members Absent: None

Also Present: Ms. Tamara Ambler ó RWSA Water Resources Manager, Mr. Tom Frederick ó RWSA Executive Director, members of the public, and media representatives.

Ms. Thomas said that the minutes have just been distributed and would need to be approved at the next meeting. She reported that she had communicated with Blue Ridge Sand and they agreed to have a telephone conversation but they never got back to her. They appeared at the meeting, and Ms. Thomas said that she would try to provide time for them, but wasn't certain that would work out.

Ms. Smith reported that 315 survey responses have been received.

Ms. Thomas mentioned that county staff summarized written comments that were mailed or handed in and integrated them into the total results.

Ms. Smith expressed her thanks to Lee Catlin and county staff for executing the survey.

Ms. Smith reported that of the 315 respondents, 52% were from Albemarle County, 44% were from the City of Charlottesville, and 2% were from other counties. She indicated that 10% had never been to the reservoir, 71% said that the reservoir was used for drinking water, 57% noted the Ivy Creek Natural Area; only 15% of respondents were rowers, another 33% were canoers and kayakers, and 15% used it for fishing. Ms. Smith reported that greatest number of responses related to use referenced drinking water and the Ivy Creek Natural Area. She stated that other uses mentioned were aesthetics, wildlife watching, etc. Regarding the question of how public

access meets people's needs, Ms. Smith reported that 19% of respondents thought it was a problem. She said that only about 100 respondents commented on how the use of the reservoir has been affected by changes, and they mostly talked about rowing and canoeing, with water supply mentioned secondarily. Ms. Smith noted that the questions regarding expectations and desires for the future of the reservoir received the most responses – 251 out of 315 – with about 85% talking about “preserving, maintaining, restoring, enlarging” the South Fork, mostly mentioning the water supply. She reported that 70% talked about restoring the reservoir, and half of those respondents used the word dredge.

Ms. Smith said that in the section for additional comments, most people used this opportunity to talk about the overall water supply. She reported that people mentioned losing Ragged Mountain, losing South Fork, and almost half did mention dredging the South Fork under that question too. Ms. Smith commented that she found the survey responses interesting and surprising, with an overwhelming number of respondents indicating they cared about saving the South Fork.

Mr. Schuyler reported that he combed through the surveys and the qualitative answers can be very instructive about what people want, but individual motivations for wanting dredging are not clear. He said that many people may not know that under the current water supply plan 85% of drinking water will still come from South Fork, as it will still provide a “safe, stable and consistent water supply” even though it is not going to be the main storage area. Mr. Schuyler commented that it is hard to know when people say “dredge it” what they are really trying to achieve, adding that it is not well understood that the SFRR will provide drinking water most of the time for most people. He stated that it is only in times of drought when the storage is needed that it would shift from South Fork to Ragged Mountain for storage. He added that some people want to dredge it because they believe it is the cheapest water supply option, and if it is not the cheapest perhaps they would want to do something else. Mr. Schuyler stated that some people believe there is a legal, moral and/or ethical obligation to maintain what is built, and not be a disposal society. He said that there is a natural tension between the desire to build the cheapest option and to maintain what is built.

Dr. Palmer said that people might not be aware of the issue of aging infrastructure folded into the existing water supply plan. “It’s not just that we’re trying to build this big fancy new dam, we’re trying to restore a very old decrepit system in the Sugar Hollow – Ragged Mountain area.”

Mr. Martin commented that doing the survey was very worthwhile, but said it must be decided – particularly related to the dredging issue – how much weight should be given these opinions, as it is unknown what the knowledge base of respondents is with respect to the approved water supply plan. He expressed concern that there is implicit thought that reservoir was built in 1966 and then the county walked away from it. “Nothing could be farther from the truth.” Mr. Martin mentioned Mr. Bowler’s report detailing all the efforts that have gone into maintaining the watershed, including down-zoning in 1980 and regulatory provisions in Chapter 17 of the County Code. “Our county has done a great deal to protect the watershed and to protect the reservoir in terms of water quality over many years, and I don’t think any of us should forget that.”

Mr. Schuyler added that it is not known what people have thought going into his, and some respondents have made comments such as dredging being able to meet the community's water supply needs but even with \$30 million spent on dredging that would only meet 24% of water supply storage needs. He emphasized that while the survey is very beneficial, it's hard to glean what's behind it.

Ms. Smith commented that she was impressed with how much people knew, and is glad people are paying attention. She expressed her thanks to people who took the time to respond.

Ms. Thomas thanked task force members for their comments about the survey, and began discussing the format for their report. She indicated that she had planned for the report to be five to ten pages with lots of attachments, with one attachment being a link to the survey; county staff has indicated that they can keep that link active. Ms. Thomas said that at the last meeting the task force should have a report they can agree on or leave open for modifications if not everyone agrees. "So how are we going to get there from here?"

Ms. Thomas indicated that Mr. Jones has drafted a proposal with some recommendations, and her PowerPoint presentation tonight is her attempt to compile what was learned for each piece of the seven charges. She commented that John Martin had pointed out that when the four chairmen re-emphasized their charge to the task force, they simplified it and came down with four pieces.

Mr. Martin clarified that the task force is instructed to "build a well-rounded case to address four specific matters: how the reservoir benefits our community; what measures would be most effective in maintaining those benefits; what is likely to happen to the reservoir if no such measures are undertaken; what the next steps will be in order to move those steps forward." He added that in their clarifying statement, the board chairs said quite explicitly that this task force was not charged with "reassessing the fundamentals of the water supply plan."

Ms. Thomas commented that using the four points makes for a better report, and she will take what comes out of this meeting compile it with what's been covered previously, come up with a draft, and use email to elicit responses from task force members. She said that it is possible to come together and have a report, and the four chairs have indicated that they are hoping for a majority and not necessarily expecting a consensus. Ms. Thomas commented that there will be room for disagreement on points, and told task force members that they shouldn't feel constrained if they don't agree.

Ms. Smith asked if the Freedom of Information Act (FOIA) prohibits use of email in any way.

Ms. Thomas responded that as long as it's discussed in public, email is fine.

Mr. Rooker said that under the FOIA, no email exchanges are considered to be a meeting, but instant messaging may be.

Mr. Martin stated that he has circulated a copy of the comments Dave Norris made to the task force at their October 27th meeting.

Dr. Palmer suggested that following the four board chairs' format would help organize the task force's report and make the process easier.

Ms. Thomas said that Mr. Jones spent the most time on task force recommendations, he should get the floor; she referenced the recommendations that he distributed.

Mr. Jones stated that he enjoyed talking to each of them over the last few weeks and learned a lot about points of view, and that process changed some things he thought about as being important. He thanked everyone for their input, stating that he had concerns as to the affordability of proposals and how they might fit into priorities. He emphasized that the draft recommendations are intended to be a starting point for discussion as the task force has not spent a lot of time on conclusions for dealing with the reservoir, adding that his draft does assume that the approved water supply plan will go forward on time, as described, and none of these things undermine the plan and essentially could strengthen the plan.

Mr. Jones reported that his recommendations are built around the basic recommendation that dredging should occur in the near future, for two primary reasons: the community should not lose the ability of the SFRR to be a reservoir and a source of water storage in the long-term, as it may be needed beyond the 50-year plan or because of changes in demand or rainfall patterns. The second reason, he said, is a short-term benefit achieved during the period of construction of the approved water supply plan – the construction of the Ragged Mountain Reservoir, the construction of the South Fork Rivanna Reservoir to Ragged Mountain pipeline, and the ancillary structures of the de-sedimentation plan. Mr. Jones said that if dredging is pursued in the near term, the first step in implementing that would be a feasibility study along the lines of what Gahagan & Bryant described but with a few more questions related to specific objectives.

Mr. Jones explained that regarding preserving ability for the SFRR to serve as a reservoir, sedimentation is already filling in some portions along the margins of the reservoir. He referenced the presentation made on Ivy Creek and the main body of reservoir near Panorama Farm, with pictures of Turtle Island and encroachment of new ground over the last 40 years. Mr. Jones said that he was careful not to use the term "wetland" as there is considerable doubt that those "wetlands" would be able to be removed within the boundary of the reservoir – whether in Ivy Creek or the main body of reservoir.

Mr. Rooker said that it seems very important to get that information, because if the answer is you can't dredge certain areas because they are protected wetlands and more will be created as time goes by, it may accelerate interest in dredging sooner rather than later. He commented that the whole issue of what can legally be taken out of the reservoir by normal permitting process is an important issue, and an answer is needed relatively soon if dredging is going to be considered.

Dr. Palmer commented that if capacity is needed, it is more likely that wetlands will be removed and mitigated, but if there is already a water supply plan with sufficient capacity and the reservoir is desired for other reasons – that's a different regulatory question.

Mr. Rooker said that the question from a regulatory standpoint has not been answered yet.

Ms. Thomas said that it would be useful for local governments to make a list of things they ought to find out.

Mr. Rooker said that knowing that nothing with vegetation can be removed may affect kind of study that is done.

Dr. Palmer added that that question must be expanded to include the reason for dredging, as the study would need to be expanded if the goal of dredging is restoring contours for rowing, etc.

Mr. Martin commented that it is troubling to him to reach a conclusion that dredging should be done to avoid creation of future wetlands.

Ms. Smith responded that one of the benefits of using a group like Gahagan and Bryant is they know what questions to ask and what the implications are.

Mr. Jones said that there has been a clear trend toward more restrictions on disturbing wetlands, and even if an answer was available today that said definitively dredging was no problem as long as it's within reservoir boundaries, the long-term answer may not be that at all. He commented that there are a number of areas that are too shallow to be traversed even by kayak, and it won't take much more siltation to turn them into wetland areas. Mr. Jones also said that there is a long-term concern about more water needed in the long run and the long run could be after the 50-year plan or if water demand has been underestimated in the case of failing wells, etc. It's happened before, so what if we're wrong about how much water the system has to supply, or what if we're wrong about the nature of droughts? He added that climate change information indicates that future weather patterns will likely consist of more severe storm events followed by longer, more severe periods of drought.

Mr. Martin said that he characterizes the long-term benefit presented as nibbling around the edge of the reservoir on the theory that that will make it easier in the long-term if dredging is needed in the future. I don't know if there's any scientific basis for suggesting that nibbling around the edge short-term is going to save money long-term.

Mr. Jones said that he didn't say it would save money, but if Turtle Island (an island built from sedimentation within the South Fork reservoir) is allowed to connect to the shore and there is a problem of disturbing wetlands, the ability to dredge would be lost.

Dr. Palmer stated that reuse is the wave of the future, and was listed as one of the original 32 alternatives but was nixed because of expense and reluctance about the process. She said that states such as Florida and California have shifted to reuse and the technology continues to improve. Dr. Palmer commented that it is difficult to get rate-payers to support plans that are 60-70 years in the future, especially if there are future options such as reuse available.

Ms. Smith said that if the reservoir is not dredged, it will be lost forever because of regulators.

Dr. Palmer responded that the question must be answered as to why it should be kept.

Mr. Rooker said that the decision about impact to rate-payers is not an issue for this task force, and if a recommendation for dredging consideration is made it is ultimately up to the RWSA. He added that one of the problems in the water supply plan ó which he supported ó is that the cost for dredging was estimated at õextremely high numbersö and no one thought it was cost effective to do that and nothing else. He stated that if the estimate is much lower, the community could make a decision about whether it's worth doing, whether or not it impacts the water supply plan that's been adopted. Mr. Rooker said that this all depends ultimately on the cost, mechanics and environmental impacts of doing it. õThose are things we can only hypothesize about here.ö

Dr. Palmer replied that this group is charged with identifying benefits, and storage is not a long-term benefit because storage is in the water supply plan. She emphasized that dredging was not only nixed because of cost, but because it was hard to put in the water supply plan due to logistics of where to place material, etc. õThe charge of this committee is to decide what the benefits of the reservoir areí .I just don't think that's a legitimate long-term benefit.ö

Mr. Rooker read from the revised charge presented to the task force by the four chairs: õIt is also important to note that in our resolution the city and county both acknowledge the valuable role of the South Fork Reservoir plays as a water resource for the community, not just a place where people go to fish and row and play and enjoy nature. While the reservoir benefits our community in many ways, the reservoir was created as a water supply vehicle and will continue to serve in that capacity under any water supply scenario offered today.ö

Ms. Olivier commented that it is reasonable for the study to consider the potential of the reservoir as a storage facility.

Mr. Martin responded that the task force is not supposed to consider that.

Mr. Rooker indicated that Mr. Schuyler had said that dredging would assist in every way, not just capacity, adding that the community can only make a decision about dredging if they have cost numbers.

Dr. Palmer commented that the task force is supposed to be identifying benefits of the reservoir, and long-term capacity is not a reason to dredge.

Mr. Gaffney clarified that this group is asked to give recommendations to the four chairs as to what should happen with reservoir, and inherent in that request will likely be the need for a dredging study. He said that in terms of looking at it for storage capacity, whatever study comes out of it, the results will go to the four parties and the city and county must agree on what happens with the study. Mr. Gaffney said that the study would include cost estimates and known storage capacity increases that will meet the needs of the community water supply plan, and that information may allow for reduced dam height. He added that Rivanna could allocate the savings toward dredging, with the remainder coming from the community and not RWSA. õWe're thinking way beyond what this committee needs to think about, and we really should get back to the charge of the committee and let the city and the countyí .handle the bigger picture.ö

Mr. Martin said that there seems to be an assumption that there will be a feasibility study, and he is not on board with that yet. He said that he is on the service authority board and he doesn't feel that rate-payers have received enough attention. Mr. Martin said that there is no way the community can build a new water supply under the approved water supply plan and dredge at the same time, without enormous burdens on rate-payers. He stated that a dredging operation cannot be done in the short-term, as it cannot be justified when the money for one element of the water supply plan or the pipeline from South Fork to Ragged Mountain is not available. Mr. Martin said that the \$300,000 for a study is "the people's money" and to spend it without a realistic possibility of an actual dredging operation coming forth is problematic. He added that he would like to see the reservoir dredged "for the right reason at the right time," but a feasibility study isn't needed right now. Mr. Martin commented that the city started all this, and if they want a study they can pay for it and can work "some kind of a deal" that they are reimbursed after dredging actually begins.

Dr. Palmer said that this task force has spent a lot of time about how to get sediment out of the reservoir, but hasn't spent a lot of time on how to keep sediment out of the reservoir through land use policies, etc. She stated that she would like to spend some more time with that issue, as there are good ordinances in place now or such as the Water Protection Ordinance or that might not be implemented effectively due to staff constraints.

Mr. Martin commented that the \$300,000 would be better spent on filling those positions.

Mr. Rooker responded that those expenses are annual operating costs, not one-time allocations. He also said that Stephen Bowler has indicated that there are no land use measures the county can take to yield significant quantifiable reductions in sediment.

Ms. Thomas said that Sam Austin of the Rivanna River Basin Commission had planned to come address the task force.

Mr. Schuyler commented that it would be a very good idea to spend an equal amount of money to stop sediment from coming in the reservoir in the first place, and there has been "quite a revolution" in thinking about how to stop sedimentation, as stream bank erosion has been pinpointed as a primary source of the problem. He noted that state storm water regulations now incorporate the idea that every new development should replicate the function of the forest in terms of dealing with runoff and stopping sedimentation. "There's all kinds of work being done on that." Mr. Schuyler said a feasibility study that includes recommendations on arresting sediment could bring forth some of these concepts and address the long-term problem.

Mr. Rooker mentioned that the Rivanna River Basin Commission is undertaking such a study right now.

Mr. Schuyler confirmed that this is going on.

Ms. Thomas noted that the Commission is asking for a grant from the Chesapeake Bay Program, but it's a long way from being able to do this study.

Mr. Schuyler pointed out that the Commission requested early on that Virginia Tech give an idea for a feasibility study to identify the sediment source and which stream banks are eroding, and they came back with a \$1.2 million study. He added that preventing sediment fill should be invested in with equal vigor.

Mr. Rooker said that a study that provided technical information on dredging could also include feasibility on using forebays to stop sediment, and several experts he's spoken with have provided different opinions on this as an option. He mentioned that land use policies could also address sediment, and Albemarle has one of the most stringent water protection ordinances in the state, but concepts such as those have to be turned into ordinances in order to be effective.

Dr. Palmer asked him how much the water protection ordinance is being enforced.

Mr. Rooker said that he believes the county is implementing the ordinance when issues come before the Board.

Dr. Palmer noted that there used to be a dedicated person to address that, but that position has been frozen.

Ms. Thomas mentioned that the Southern Environmental Law Center and other organizations provided a report on county ordinances and made some recommendations about how to better implement them.

Mr. Rooker commented that the problem of frozen positions cannot be cured at this table.

Dr. Palmer agreed, but reiterated Mr. Schuyler's point about putting an equal amount of money into preventing sediment from entering the reservoir and added that there also needs to be investment in enforcing ordinances.

Mr. Rooker responded that Stephen Bowler and David Hirschman have indicated that the source points of sediment have never been able to be established, and enforcing ordinances and improving land use practices will help.

Mr. Schuyler said that people are looking into those measures, and this task force should recommend investment in this as well.

Mr. Rooker asked if he is recommending that RWSA invest some of the \$300,000 into land use issues.

Mr. Gaffney asked if the recommendation was being made to Rivanna or to the community as a whole.

Dr. Palmer said that the \$300k from RWSA was out of the watershed fund, and she has no idea what they would have spent that money on.

Ms. Thomas asked if there was any consensus about the "two sides of the coin" of dredging and sediment prevention.

Ms. Smith commented that she has been assuming all along that sediment prevention as part of reservoir maintenance would be one facet of the long-term strategy after dredging is done.

Ms. Olivier said that preventing sediment fill does pertain to maintenance of the reservoir.

Mr. Jones said that the task force hasn't really studied what kinds of measures the Rivanna River Basin Commission is doing, but he does believe in buffers and storm water control. He stated that he's not educated about what's in place, but it seems that enforcement is "very limited" and the monetary fines are "pathetically small." He acknowledged that localities are limited by state law as far as what teeth can be put into regulations, and he doesn't know how specific their report can be.

Ms. Thomas said that research may be leaning towards turning floodplains back into floodplains in the upper reaches of streams, and paying farmers to grow crops that will profit from having periodical flooding may be one of the most effective measures that can be taken. "It may not be regulations, and it may not be something that you do for free, but there may be ways that you can slow down the scouring of your stream beds and actually dramatically reduce the amount of sediment that's coming into the reservoir." She added that the Rivanna River would be the primary source of drinking water in the long-range plan.

Mr. Rooker responded that he supports what Ms. Olivier said, and the Commission's work should be specifically mentioned in their task force report.

Mr. Schuyler said that he is reluctant to recommend how elected officials spend money, but perhaps associating costs with specific objectives would be more appropriate.

Mr. Martin commented that if the task force recommends a feasibility study, that is a recommendation as to how to spend the people's money.

Mr. Schuyler stated that his understanding from the four chairs' directive was that this task force is to establish why dredging is needed and what the benefits of that would be, and once that is done the chairs can decide whether to spend money on a dredging feasibility study. "So our recommendation would be these are the reasons to dredge and then based on our knowledge these are the next steps you would take to pursue that option."

Mr. Rooker said that the impression he took away from last week's meeting with the four chairs is that the task force would make a recommendation one way or another as to whether or not to do a feasibility study, and then the next steps to be taken. He added that before this group was created, an RFP was created in July by the RWSA to pursue a dredging study. "My question would be have we found anything out in the interim that in effect should lead us to recommend that they don't go forward with that study."

Mr. Martin responded that the RWSA was trying to respond to public comments and mollify a very small number of people in the community "and now we're beyond that." He said that this task force is now looking for valid reasons as to whether to conduct a dredging study and when.

Dr. Palmer asked if the \$275,000 study was intended to get the reservoir back to capacity, and if dredging is done for other reasons perhaps that full amount won't be needed.

Ms. Smith replied that the study was going to provide information on which to make those decisions.

Dr. Palmer said that if it were being done for capacity, a feasibility study performed 10-15 years before capacity would be needed in the reservoir doesn't seem to rank higher in priority than repairs to aging infrastructure and other measures needed to implement the water supply plan.

Mr. Rooker asked how she knew it would be down on the list.

Dr. Palmer responded that she knows there isn't funding in the CIP for the dredging.

Mr. Martin emphasized that dredging for capacity isn't needed because the water supply plan has already been approved and doesn't call for that.

Dr. Palmer said that there would also need to be investment in repairing the sewer system, and the dredging would be added to the CIP.

Mr. Jones commented that there is a general assumption that dredging is a \$50 million project, but if you go back and adjust Gannett Fleming's numbers related to sediment removal figures, their cost would come down considerably. He added that selective dredging may be able to be accomplished with 1/3 million cubic yards instead of 2 million cubic yards, which is 1/6 of the original estimate.

Mr. Gaffney said that this gets back to the importance of clarifying the reason for dredging, as preserving the reservoir for rowing, fishing, etc. will likely require a different plan and associated costs than preserving for capacity. "I think we ought to design what the reservoir looks like that meets community needs beyond the water supply."

Mr. Martin said, "Rowing is one reason why should we dredge" the question is when would we need to do that." He added that the University of Virginia is well aware of this task force as Ms. Thomas has presented to them before, and if they thought there was a short-term need to preserve the program they would have come forward with that concern.

Ms. Thomas commented that rowing requires 100-foot wide, 4-foot deep channels as far up as down as possible, and she has asked Greg Harper to look at the shoreline. She said that through aerial photos he indicated there is plenty of room for that, but the reality experienced by rowers is quite different. She asked Mr. Fletcher to comment on how urgent the University feels dredging may be to the survival of their program at the reservoir.

Mr. Fletcher responded that the University clearly sees this as a community resource, but rowing was not the reason why the reservoir was created. He said that the reservoir has been there longer than the rowing program, and the University would need to consider other options if it were to disappear. He emphasized that it is important to view the reservoir as a water supply, but it is definitely appreciated by the University and others as a valuable community resource. "I think at the end of the day we'd have to evaluate the options."

Mr. Martin asked if a recommendation from this task force should be working with the University to establish when dredging would be needed for the purpose of rowing. He added that it wouldn't just be considered for U.Va., as a lot of other citizens row there as well. "At some point there would need to be a conversation as to who is going to pay that would be a complex conversation."

Mr. Fletcher responded that he doesn't see anything in their charge that should take them to that point right now.

Mr. Rooker emphasized that the real variable with dredging is how to handle sediment, where to sell it, whether it can be stored close to the reservoir, whether it can be sold, etc., and those factors impact the cost of the operation as does the supply of land that may not be available in the future. "Whether or not we dredge is a decision that is going to be made by the four boards—the city and the county ultimately with their input on RWSA. I think we need the information that a study would produce to help quantify some of those things." He added that the cost variance from \$30 to \$200 million is a huge differential, and there are many people in the community that want to see dredging considered seriously to maintain the reservoir. Mr. Rooker noted that Ragged Mountain is being used today but was built over 100 years ago, and suggested that quantifiable information is needed to make decisions now for the future.

Mr. Schuyler emphasized the importance of clarifying the reasons for dredging, and that information should in turn be shared with the four board chairs. "The why becomes the scope of work which then narrows the focus of the feasibility study which then, we hope, reduces its cost."

Mr. Fletcher said that he does not think that this group needs to concern itself with the specifics of an actual dredging project, as there is an RFP process and the specifics are up to the firm who gets the bid.

Mr. Rooker responded that there is a huge difference in cost depending on available sites, but there may be existing sites that may lower the cost that may not be available in the future, and that needs to be taken into consideration.

Dr. Palmer commented that if the lowest dredging cost is even \$28 million, that money could be used for putting in a pipeline from Ragged Mountain sooner than 2021.

Mr. Jones said that he doesn't think this committee can refrain from making recommendations based on the fact that they may not move up high on the priority list.

Ms. Thomas suggested that the group present options that address steps needed for additional storage capacity, ongoing recreational use, etc.

Mr. Jones stated that he understands the Ragged Mountain Dam would be filled by the "fragile Sugar Hollow pipeline," and an outage during an inconvenient time could create a problem in the short term until the whole system is up and working. "It seems to me that an additional benefit is to provide that cushion before the new storage capacity of the water supply plan capacity comes into place." Mr. Jones said that if dredging is done to try to arrest incursion of dry land, you also get some amount of storage capacity that could immediately be put to use.

Ms. Thomas said that there are short-term drought management plans that involve things such as tapping Chris Greene Lake although it wouldn't be desirable as a permanent source. "There could be a comparison made of the known ways that we're going to deal with the drought in the next ten years versus dredging for some additional capacity in the reservoir." She added that it is up to the task force to decide whether to include that, but she wants to ensure that people are aware that there are drought management plans.

Dr. Palmer said that the management of the water system is better than it was in 2002, and the only reason that the water supply plan has been drawn out so long is the money issue so it could be done sooner. She asked Mr. Jones about his reference to the interim period when the new dam is finished and the old dam has to be drawn down.

Mr. Jones responded that he has heard questions about the need to lower the water levels at some point during construction.

Dr. Palmer explained that after the new dam is completed the old dam is lowered, and Ragged Mountain Reservoir would need to be drawn down to about 20%. She said that one of the reasons that the flows in the permit for the first 30% of the fill are damaging to the Moorman's River is that the risk is trying to be managed to get that flow up to 30%.

Mr. Martin said that the suggestion is to dredge to have safety net while building the new water supply plan, but the whole sequence including delay in construction of the pipeline has all been modeled, and under this scenario the community can get through worst drought of record without any additional storage capacity. "It's all planned."

Dr. Palmer added that it would take a year and a half to actually get to the dredging operation, and Mr. Frederick has found some issues that would probably increase that timeline to two years or more.

Mr. Jones commented that he understood that the dam would be done around the same time as dredging or maybe sooner, but the concern remains of how to fill it and keep it filled. He said that the answer to that seems to be the Sugar Hollow pipeline.

Dr. Palmer responded that she would prefer to spend the money to get the pipeline sooner, rather than for dredging.

Mr. Martin said that there is a flaw in logic to recommend dredging because of the delay to build the South Fork to Ragged Mountain pipeline. He said that if delay in the pipeline is a problem because of funding, then the money for dredging should be spent on building the pipeline sooner.

Mr. Jones said that the more facets to a project the more potential there is for delay.

Ms. Smith stated that the money decisions are not up to this task force to make, and she believes the South Fork can offer a side benefit. She emphasized the significance of the reservoir's community benefit, noting that it is the largest public body of water anywhere in the area. "If we lose it, if we delay too long it's gone, and we're not getting it back." She clarified that she is referring to the inability to make it a large body of water again once land has formed.

Mr. Rooker noted that years ago the community purchased land at Buck Mountain with the idea of making it a reservoir, but because of the presence of the spiny mussel and the potential environmental impact "which is five times the impact of the current water supply plan as measured by the Army Corps and DEQ" it would not be approved today. He said that in conversations with regulators, they have indicated that creating a new impoundment is a last resort if there are no other options. "We do have a reservoir that is there and it may be worth something to maintain capacity in that reservoir." Mr. Rooker said that he is in favor of obtaining the information necessary to take the steps as a community to preserve and maintain it in some fashion, as another impoundment will not be approved in this area. He added that at one point the plan was to dredge South Fork and put a bladder on the dam, but that became non-approval because of impact on streams. "Regulations get tighter, they don't get easier."

Mr. Martin said that if dredging isn't done for another 10 years, an entire new feasibility study might be needed.

Ms. Olivier said that it's not possible to assess that without more information.

Mr. Martin said that looking at this rationally, it's not possible to implement the water supply plan and engage in dredging at the same time without driving the community broke.

Several task force members indicated that it is not their decision to make.

Mr. Rooker said that he is not here to support dredging or not dredging, but he is in favor of a feasibility study in lines of an RFP similar to what RWSA developed in July, to gather valuable information for the community and understand what it would take to maintain the reservoir.

Ms. Thomas asked if that should happen without the question of why being answered first.

Mr. Rooker replied that there are community aspects "rowing, fishing, aesthetics" that are valuable, in addition to maintaining capacity; for all of those reasons, it's important to find out information on the cost of dredging and how it would be accomplished.

Ms. Smith stated that the reservoir is an invaluable community resource ó the largest public body of water in the area ó and it will be lost and unrecoverable if nothing is done in the short term. She emphasized that the community resource aspect is huge, and there is added benefit of capacity as a safety net. She agreed with Mr. Rooker that what is needed is information and she supports a feasibility study on what can or cannot be done.

Mr. Lee said that the question of whether to do a feasibility study now versus ten years from now is debatable, assuming there is agreement that there ought to be a feasibility study.

Ms. Edwards said that she feels that if it's not needed for water storage, it should be returned to a natural river. She said that regarding a feasibility study, the question of why pertains to what it means to be a steward, and how maintenance should be defined ó if maintenance is important to the health of the reservoir for recreation, water supply storage, or other reasons. She said it is important to decide whether to move forward with a feasibility study if for no other reason than to reach a conclusion.

Mr. Fletcher stated that there is a need to provide a feasibility study to give the four chairs good information, to give them the opportunity to make informed decisions.

Mr. Gaffney said that the reservoir should be designed for its continued use as an asset to the community, and then adding capacity so that in five years it hasn't already ósquashed its use.ö He added that doing so moves towards a dredging feasibility study of some sort, and what happens with that study is a community decision not a Rivanna decision.

Mr. Jones commented that he has also presented his thoughts, but there has not been a lot of discussion about habitat and wildlife and the reservoir has some unique characteristics ó including a high ratio of watershed to surface area. He also mentioned that he and Kevin Sauer discussed that there are approximately 50,000 hours spent on the reservoir by rowers every year. Mr. Jones added that it is worth being preserved for aesthetics, nature, rowing, etc., and the study should be done with parameters to address future loss of capacity.

Ms. Joyner said that she had raised the issue earlier of keeping sediment out, and hopes that it is covered in task force recommendations. She said that if a study is recommended, the parameters should be well-defined and added that there are other issues around the reservoir that could be addressed in the near-term such as tree removal.

Ms. Thomas noted that Ms. Joyner has brought up access issues and removing snags to that, and the county has the responsibility to provide access points.

Ms. Joyner responded that she thought there would be more discussion about access, but there is a plan to achieve better access in the future. She added that it makes sense to invest in this if the reservoir is to continue being used for recreation.

Mr. Lee said that he doesn't know the value or the risk of not being able to use the reservoir for long-term water storage, and expressed concern about the possibility of needing it to serve that purpose in the future. Given the parameters provided to the task force, he said, other reasons to

dredge are aesthetic and recreational. He commented that he is a little disturbed that dredging is considered the primary means of stewardship or maintenance, and other issues should be considered as well such as invasive species and further siltation. Mr. Lee also indicated that the outline provided by the four chairs clarified for him how the report should be crafted, and Mr. Jones' presentation seemed to take a different approach. He emphasized that it is not up to this task force to decide the value of a particular use of the reservoir – water supply, recreational, aesthetics, etc. – and it's up to elected officials to decide how to invest to protect the resource. Mr. Lee stated that funds should not be committed to a dredging in the near-term if the actual dredging is going to occur in the long-term, but he would like more information about the possibility of regulations impeding future dredging.

Mr. Martin commented that the reservoir is, and always will be, a valuable community resource for water supply and community recreation because of what county government has done during the past 40 years to protect the watershed and the reservoir, particularly restricting high-density development around the reservoir. He said that there will come a time when dredging will be useful to preserve benefits of the reservoir, primarily rowing and recreational uses, but acknowledged that he doesn't know when that will be necessary. Mr. Martin also expressed interest in dredging to remove "fairly artificial" things such as the island that started with a tree stump, and also to improve public access. He stated that dredging for capacity is not needed and should not be done now as it will constitute a waste of public funds, adding that a feasibility study should be done "at the appropriate time" when the results would not grow stale. Mr. Martin emphasized that spending \$300,000 on a study now would be spent to "solve a political problem."

Ms. Olivier stated that she believes a feasibility study does need to be done now, and public comments show that the reservoir is a valuable resource.

Dr. Palmer said that as a representative to rate-payers, she believes the ideal thing would be to let the reservoir gradually become a river and doesn't think "we should throw good money after bad." She stated that someday the dam could be removed or reduced in height, and as a citizen who enjoys parks she is torn about maintaining it for that purpose. Dr. Palmer said that she is not convinced of the importance of restoring capacity to the reservoir in the short term, adding that about 1% is being lost every year. She commented that she doesn't see a problem with waiting a few years to see about dredging the reservoir to maintain it as a park, and she would support a feasibility study with that focus. "I also would like to see that money spent on keeping the sediment out. We know a lot more about that now than we did a decade ago." Dr. Palmer added that she would like to see the county's natural resource manager position refilled, and more erosion control inspectors hired.

Mr. Schuyler emphasized the importance of clarifying the rationale for dredging, and acknowledged Mr. Jones' summation of the "most compelling" reasons, none of which includes restoring capacity: to preserve future options to the community and a safety net in the short term, and to preserve recreational benefits. He said that this task force owes the four chairs that kind of specificity, rather than just recommending a feasibility study, especially if the reservoir is not being dredged to restore capacity. Mr. Schuyler stated that if there is a sufficient purpose and need to dredge a wetland, it would be permitted even though mitigation would likely be needed.

He mentioned that Greg Harper's report indicated that 20 acres of wetlands are likely to be created in the main stem of the South Fork over the next 50 years; wetlands are \$85,000 per acre which means it would cost \$1.7 million to mitigate them. Mr. Schuyler said that the cost of dredging should be weighed against that. He emphasized that dredging to maintain recreational benefits was the most compelling reason he could find, and it is likely that dredging for capacity will likely cost more than building a dam in the long-term. Mr. Schuyler said that the feasibility study should focus on dredging for recreation and perhaps to maintain the reservoir for future purposes; the study should include an examination of disposal sites. "Dredging is easy, getting rid of material is the hard part. Disposal site selection is the cornerstone of any good project."

Ms. Thomas expressed her appreciation to Mr. Jones for his work, and to other task force members for sharing their viewpoints. "I'm very optimistic that we can actually come up with something by our next meeting." She noted that 100% agreement is not needed, and there are different ideas around the table as to why. Ms. Thomas said that she would draft a report and distribute it to members.

Ms. Thomas acknowledged that Mitch King, who works in renewable energy and reselling hydroelectric power, and Mark Fendig of Blue Ridge Sand which maintains the reservoir on the New River in southwest Virginia are in attendance. She recognized that the meeting is now beyond the scheduled time for adjournment, and indicated that task force members could stay or go as they wished.

Mr. King said that during the drought of 2002, he read in the paper that RWSA was looking for dredging opportunities and contacted Mr. Fendig; they submitted a proposal in 2004. Mr. King said that Mr. Fendig is an experienced dredger in Piedmont Virginia reservoirs, which are very different from coastal reservoirs. Mr. King said that an "amphibious" dredge is used in the Piedmont, as is a system where sediment falls through screens of different sizes and eliminates the need for a large riparian de-watering facility. He also said that they would be happy to do a demonstration for RWSA in the wintertime, and that could all be done on existing city property.

Ms. Thomas asked what kind of land would be required for the de-watering system.

Mr. King responded that there is enough riparian land on city property on Reas Ford Road.

Mr. Fendig said that it takes less than an acre for equipment, and they determined that there are several acres available for short-term storage; the footprint would be considerably less than what has been proposed by other firms. He confirmed that this would take about two to three acres, and his firm can do about 100 cubic yard of material per hour to successfully de-water, which equates to 800 to 1000 cubic yards per day at a capacity of 1.2 yards per ton. He explained that his company would haul the material to an off-site location and would manage disposal. Mr. Fendig said that some of this material would be recycled and reused, and he has identified several markets for this locally as asphalt, road construction, building industries, concrete, agricultural uses, topsoil, etc. He confirmed that his firm has identified two companies with an interest in the material for concrete.

Mr. King added that Blue Ridge Sand took core samples during their preparation of the proposal, and prospective customers said they would take 100% of what was removed from the reservoir.

Mr. Fendig said that the sample was mostly sand with a percentage of fine silt at the top and stone and gravel at the bottom.

Ms. Thomas asked where the core samples were taken.

He confirmed that the samples were taken from the area between "Turtle Island" and the Reas Ford Road bridge, as the RWSA identified that island as an area of concern.

Mr. Jones asked how close the dredge would need to be located to the two to three acres.

Mr. Fendig said that typically 2,000 feet would accommodate a booster pump, and any further distance would require an additional booster pump set on flooding platform. He indicated that essentially the system would de-water material and dump it on a pile, then take the water back and return it to a sedimentation area, then return it back to the reservoir. Mr. Fendig added that a company is exempt from permitting below a certain level.

Ms. Thomas noted that the county would have some significant soil erosion issues at that location.

Mr. Fendig explained that the material would be de-watered within same day it's removed, then loaded on a truck and delivered to a user for material, or the user could come and collect it. He said that the material is classified into several separate grades, and his company has been trying to eliminate disposal costs as that added significantly to the overall cost. Mr. Fendig added that a study would show what they would be dealing with as a dredger.

Mr. King said that he recommended in 2004 that the RWSA move forward with geotechnical studies to see what was in the reservoir.

Mr. Rooker asked what the cost would be to set up and do a demonstration project.

Mr. Fendig replied that the only cost would be the mobilization/de-mobilization of equipment from southwest Virginia - \$15,000-20,000. He said that that process would give the community an idea of what dredging would look and sound like. Mr. Fendig explained that in southwest Virginia, the material is very valuable so the cost to remove it is covered by the resale value. He noted that Blue Ridge Sand has two reservoirs that they own and operate - Big Shoals in Grayson County, and the reservoir on the New River.

Mr. King noted that the cost issue is directly related to the desired timing of removal, and if the reservoir sludge needs to be removed and disposed of quickly, the disposal costs would be much higher as the market might not be immediately ready to purchase it. "Slow and steady is the most cost-effective way to do it." He added that Mr. Fendig would like to cover his removal costs, but the disposal costs are something separate.

Ms. Thomas asked what percent of the 100 cubic yards per hour is dirt to be hauled off versus the water.

Mr. Fendig said that the entire amount would be dry, as it is being de-watered.

Mr. King said that the 2004 proposal was to remove 33.7 million gallons per year, and it would all be recovered storage ó 18.2 million gallons per year maintenance and 15.5 million gallons per year restoration.

Ms. Smith asked how they might deal with larger debris.

Mr. Fendig replied that while they can't dredge up a stump, they can bring it up to the surface and load it on a boat to take to shore for disposal. "We do that all the time in the river we operate in." He reported that in the reservoir near Fries, VA, they have a hydroelectric facility that they dredge behind, and that dam was constructed in 1900 and has significant sediment and materials.

Dr. Palmer asked if his company was proposing to remove a similar amount to what Gannett Fleming had proposed.

Mr. King responded that Gannett Fleming assumed removal of 5 million cubic yards, which is more than seven times the amount of material Blue Ridge Sand had proposed to remove.

Ms. Thomas noted that to dredge 2 million cubic yards at 1,000 cubic yards per day would take 18,000 hours ó or 13 years.

Mr. Fendig said it would be possible to use a second dredge if necessary.

Mr. King added that their initial proposal was short-term based on available resources.

Dr. Palmer said that a small operation may be all that's needed.

Mr. Fendig added that no one was willing to do a study, so they did their own.

Mr. Rooker commented that this supports the fact that there are lots of options for dredging, and his concern is that a recommended study might become focused on just one type of dredging, and several potential options should be included so that a reasonable cost comparison can be made by the community.

Mr. King pointed out that estimates from Gannett Fleming and Gahagan & Bryant are based on large navigable waterways, where barriers can be built for spoil disposal areas. "You have to take a different approach if you want to do it cost-effectively in this reservoir."

Mr. Fendig clarified that the estimated 33.7 million gallons per year was based on what they know they produce with the equipment they operate now, but all of that can be changed with a larger pump put on the dredge. He added that his estimate would be the minimum for the first

year, and would increase as material became available and the market opened up. "We might have more demand than we can actually produce," he said, adding that they could also stop if the demand wasn't there. Mr. Fendig mentioned that they would identify storage sites and bear the cost for material storage until the market is ready for it. He said that the estimated cost for material removal would be \$6-8 per cubic yard, with fuel costs being a factor.

Mr. King confirmed that the dredge would be able to pass under Reas Ford Bridge.

Mr. Fendig also stated that aggregate costs have increased, and that demand is likely to increase in the future, driving the cost of building materials up.

The meeting ended at 10:05 p.m.