

An adjourned meeting of the Board of Supervisors of Albemarle County, Virginia, and special meetings of the Albemarle County Service Authority Board of Directors (ACSA), the Charlottesville City Council (CCC), and the Rivanna Water & Sewer Authority Board of Directors (RWSA) were held on Tuesday, September 21, 2010, at 3:00 p.m. on Tuesday, September 21, 2010 at 3:00 p.m. in Conference Room A at the Albemarle County Office Building - Fifth Street, 1600 Fifth Street, Charlottesville, VA. The Board of Supervisors meeting was adjourned from September 8, 2010. The purpose of the meeting was to discuss the community water supply plan.

ALBEMARLE MEMBERS PRESENT: Mr. Kenneth C. Boyd, Mr. Lindsay G. Dorrier, Jr., Ms. Ann H. Mallek, Mr. Dennis S. Rooker, Mr. Rodney S. Thomas and Mr. Duane E. Snow. Also present was County Executive, Robert W. Tucker, Jr., Attorney, Larry W. Davis, and Clerk, Ella W. Jordan.

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ACSA BOARD OF DIRECTORS PRESENT: Mr. Richard E. Carter, Mr. Jim Colbaugh, Mr. John Martin, Dr. Lizbeth Palmer, Mr. Clarence Roberts, and Mr. David W. Thomas.

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CHARLOTTESVILLE CITY COUNCIL MEMBERS PRESENT: Dr. David Brown, Ms. Holly Edwards, Mr. Satyendra Huja, Mr. Dave Norris and Ms. Kristin Szakos.

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RWSA BOARD OF DIRECTORS PRESENT: Mr. Kenneth Boyd, Mr. Michael Gaffney, Mr. Maurice Jones, Ms. Judith Mueller, Mr. David Norris, Mr. Gary O'Connell, and Mr. Robert Tucker.

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ALSO PRESENT: Albemarle County, ACSA, Charlottesville City, and RWSA staff and legal counsel; members of the public; and media representatives.

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Agenda Item No. 1. Call to Order by Chair of Each Board.

The special meeting of the RWSA Board of Directors was called to order by Mr. Gaffney, Chairman, at 3:07 p.m., and he noted that a quorum was present.

The adjourned meeting of the Board of Supervisors was called to order by Ms. Mallek, Chair, at 3:08 p.m., and she noted that a quorum was present.

The special meeting of the Charlottesville City Council was called to order by Mr. Norris, Mayor, at 3:09 p.m., and he noted that a quorum was present.

The special meeting of the ACSA Board of Directors was called to order by Mr. Roberts, Chairman, at 3:10 p.m., and he noted that a quorum was present.

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Agenda Item No. 2. Review and Approval of Meeting Agenda.

Mr. Gaffney commented that he felt the review and approval of the meeting agenda was pretty straightforward and suggested proceeding to Opening Statements from Each Board, which is Item No. 3 on the agenda.

**(Following is the agenda for the meeting:)**

1. Call to Order by Chair of Each Board
2. Review and Approval of Meeting Agenda
3. Opening Statements from Each Board
4. Review of Dam Safety Compliance Schedule
5. Questions from Members of Boards
6. Identification of Issues in Agreement
7. Identification of Unresolved Issues
8. Discussion and Agreement on Next Steps
9. Adjournment by Chair of Each Board

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Agenda Item No. 3. Opening Statements from Each Board.

Mr. Gaffney began the process by stating that he felt they were very close to having an agreement between all parties. He said that he thinks by the end of the day they will go forward and take care of water needs for the County and the City for the next 50 years. Mr. Gaffney said he hopes that is everyone else's goal here today.

Mr. Gaffney further suggested that, after the opening statements from each Board, Mr. Norris go over the resolution that was approved by City Council at its September 20, 2010 meeting. Mr. Frederick would next discuss each of the bulleted items included in the Resolution, noting those that were in agreement with the approved Community Water Supply Plan and where there were differences so that the focus of today's meeting could be on resolving those differences. Mr. Gaffney then recognized Ms. Mallek, to present the opening statement on behalf of her Board.

Ms. Mallek stated that the Board was present today to listen and very much wanted to know specifically where the issues are and then they will be able to respond. She added that she was very glad to be here.

Mr. Roberts stated that his Board was present today to listen as well and make sure that they obtain all the information possible in order for a good decision be made by the ACSA Board of Directors.

Mr. Norris next thanked everyone for their attendance at today's meeting. He stated that City Council had a very extensive public hearing and discussion last night which resulted in the adopted Resolution. He said that Council did not necessarily see its' role today as going back, redrafting and re-voting on the resolution. However, Council does see its purpose here today in explaining the different components of the resolution. He added that his hope is in getting the support of the region as they move forward in implementing some of these changes.

Mr. Norris noted the sentence in the fifth paragraph of the resolution, which states that the City Council had readopted and reaffirmed its June 2, 2008 approval of the local water supply plan. Mr. Norris added that Council was neither talking about starting over nor talking about throwing the plan out the window. They are talking about the fact that the plan itself does not call for all components of the plan to be constructed at once. Mr. Norris added that it specifically talks about ways in which they can phase in the plan and essentially that is what Council is looking to do. They are committed to building however much capacity this region needs to meet its long-term water supply goals, that is fundamental. He said that he does not want anybody present to think that the City of Charlottesville is in any way, shape, or form trying to starve this region of water, or trying to put this region in a position of water insecurity.

Mr. Norris said that Council is very committed to meeting the water needs of this region and if it turns out that the region needs the full capacity at the Ragged Mountain Reservoir, at the end of the day through this resolution, they would actually end up with more water supply than the original plan envisions because they are adding in the element of dredging the South Fork Rivanna Reservoir (SFRR), which increases the supply even further. Mr. Norris said Council feels, at least certainly right now, that it does not need the full capacity at the Ragged Mountain Reservoir. Council is going to commit to designing the dam to its full height, building a base of the dam that could sustain a full height, but phasing in construction for the first phase would be a 13-foot rise.

Mr. Norris then read the entire Resolution as follows:

**WHEREAS**, on June 2, 2008, the Charlottesville City Council adopted a Resolution approving a local water supply plan for the City of Charlottesville, a copy of which is attached hereto; and,

**WHEREAS**, since the adoption of the June 2008 Resolution the Council has considered additional information provide by members of the public and commissioned additional studies and investigations regarding the feasibility of various options and the available alternatives within the water supply plan; and,

**WHEREAS**, during the consideration of the available options for a water supply plan the City Council has continued to place a strong emphasis on developing a water supply that would (1) meet the needs of the community for the next 50 years; (2) be within a watershed area locally controlled by Albemarle County; and (3) represent the least environmentally damaging, practicable alternative; and,

**WHEREAS**, after a thorough examination of the available alternatives with due consideration to the financial and environmental consequences of the proposed plan and the possible alternatives that would meet the community's potable water needs for the next 50 years;

**NOW, THEREFORE, BE IT RESOLVED** by the Council for the City of Charlottesville that the Council hereby adopts and reaffirms its June 2, 2008, approval of the local water supply plan with the following components and modifications:

- To aggressively promote conservation of water and reduction in leakage in the next 20-40 years;
- To conduct restorative hydraulic dredging of at least Segments 1 - 3 of the South Fork Rivanna Reservoir, (areas identified in the 'South Fork Rivanna Reservoir Dredging Feasibility Study' prepared by HDR Engineering, Inc.), and to conduct continuous maintenance through hydraulic dredging of the South Fork Rivanna Reservoir. The Rivanna Water and Sewer Authority shall seek a separate state permit for these activities;
- To commit to adequate water flow to the Moorman's River and South Fork Rivanna River, as expressed in the initial joint permit application for the water supply plan
- To keep in place the pipeline from the Sugar Hollow Reservoir to the Ragged Mountain Reservoir for use in the event of a failure in the water transmission system;
- To permit a dam with a height of up to 42' by adding additional feet to the existing dam or by constructing a new dam up to a height of 42'. In case the existing dam is built upon, improvements, repairs and modifications to the existing spillway structure will be constructed to bring the dam into compliance with all applicable dam safety laws and regulations. The construction is to be done in phases, the first phase being

the construction of a 13' raise to the current height of the dam and construction of up to an additional 29' as needed based on ten-year evaluations of actual use and population growth. The dam will be filled in phases, as water is needed.

- A new 36 inch transmission pipeline from the South Fork Rivanna Reservoir to the expanded Ragged Mountain Reservoir, which will replace the 18 inch pipeline from the Sugar Hollow Reservoir, constructed in 1927;
- The complete replacement of the piping and pumping transmission system between the Ragged Mountain Reservoir and the Observatory Water Treatment Plant, which will replace the two cast iron pipelines constructed in 1908 and 1949 and the Royal Pump Station;
- A major overhaul of the Observatory Water Treatment Plant to advance public health by providing state-of-the-art facilities that will increase the Plant's rating to 8 million gallons per day;
- The expansion of the capacity of the South fork Rivanna Water Treatment Plant to 16 million gallons per day; and,
- The expansion of the capacity of the Observatory Water Treatment Plant to 10 million gallons per day; and,

**BE IT FURTHER RESOLVED** that the construction of the improvements contemplated by this water supply plan is contingent on the approval by City Council of a cost allocation agreement for each component of the plan between the City, the Albemarle County Service Authority and the Rivanna Water and Sewer Authority, and City Council's approval of any agreement required for the use and / or conveyance of City-owned assets. The City of Charlottesville will be credited with the sale price of trees cut and sold due to the development of the dam and additional water impoundment.

**BE IT FURTHER RESOLVED** that all prior resolutions and actions taken by City Council approving the components of a local water supply plan that are inconsistent with this Resolution are hereby superseded by and replaced with the provisions of this Resolution. This plan will be reevaluated in ten-year increments based on actual use and actual population.

The Clerk of Council is directed to send a certified copy of this Resolution to the respective Chairs of the Albemarle County Board of Supervisors, the Albemarle County Service Authority Board of Directors and the Rivanna Water and Sewer Authority Board of Directors.

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Mr. Gaffney next recognized Mr. Frederick who noted the items in the resolution that were in agreement and also the ones that differed from the 2006 Community Water Supply Plan.

Mr. Frederick prefaced his remarks by stating that this was his best interpretation and any disagreements would be points of discussion during the meeting.

Mr. Frederick stated that there were 10 bulleted items in the resolution just read by Mr. Norris. He stated that he believes there was agreement with seven of the 10 items, which included the following:

- To aggressively promote conservation of water and reduction in leakage in the next 20-40 years.
- To commit to adequate water flow to the Moorman's River and South Fork Rivanna River, as expressed in the initial joint permit application for the water supply plan;
- A new 36 inch transmission pipeline from the South Fork Rivanna Reservoir to the expanded Ragged Mountain Reservoir, which will replace the 18 inch pipeline from the Sugar Hollow Reservoir, constructed in 1927;
- The complete replacement of the piping and pumping transmission system between the Ragged Mountain Reservoir and the Observatory Water Treatment Plant, which will replace the two cast iron pipelines constructed in 1908 and 1949 and the Royal Pump Station;
- A major overall of the Observatory Water Treatment Plant to advance public health by providing state-of-the-art facilities that will increase the Plant's rating to 8 million gallons per day;
- The expansion of the capacity of the South Fork Rivanna Water Treatment Plant to 16 million gallons per day; and
- The expansion of the capacity of the Observatory Water Treatment Plant to 10 million gallons per day;

As there was no disagreement with the seven items identified in the 2006 Community Water Supply Plan, Mr. Frederick noted that the remaining three items would probably be the focus of today's meeting. He then referred to **Item 2, which stated the following: "To conduct restorative hydraulic dredging of at least Segments 1 - 3 of the South Fork Rivanna Reservoir."** He noted that HDR Engineering had divided the reservoir into nine segments. Segments 1 - 3 were called "Part 1 Dredging," and Segments 4 - 9 were called "Part 2 Dredging." Mr. Frederick said that Segments 1 - 3 are the same grouping as identified in Part 1, which is dredging with mechanical dewatering and sand recovery. It was

noted that City Council's resolution includes conducting the Part 1 dredging, as well as to conduct continuous maintenance through hydraulic dredging of the South Fork Rivanna Reservoir (SFRR). Mr. Frederick said he assumes that it also referred to maintenance of the area encompassed in the initial dredging.

Commenting further on the dredging item, Mr. Frederick noted that this is about what the local community needs to do but, in order to be successful, whatever they decide will require permission from the Department of Environmental Quality and the Corps of Engineers. Mr. Frederick stated that the permits essentially grant permission to impact the waters of the United States – i.e. “environmental impacts” to the waters or the streams of the U.S., adding that the permit approved granted permission to build a dam and a pipeline. While the 50-year plan has included other issues, he said, some of which are addressed in the permit support documents, in the mind of the permit agencies what they gave the region permission to do was to disturb the waters sufficiently enough to build a dam and pipeline between the two reservoirs. Mr. Frederick further noted that the permit does not say they have permission to dredge but they can apply for a separate permit to dredge the reservoir and there is a reasonably good chance of success with that. He added that, with respect to modifying the existing permit, if they want to stay within the framework of a permit, they need to stay within the framework of a dam and pipeline and not try to add extra things in there as it makes the regulatory process more complicated.

Mr. Rooker asked for clarification about whether including dredging in the plan meant that an additional regulatory process would need to be undertaken under the existing permit. He said that he interpreted the resolution, as written, to imply that a separate permit could be obtained for dredging without impacting the permit for the approved plan. Mr. Frederick responded that he is not an attorney, but obviously, as long as appropriate procedures are followed in pursuing a permit, a new resolution may not be necessary.

Mr. Rooker next questioned whether pursuing the dredging option as written in the resolution would require an amendment of the existing permit. Mr. Frederick said that if they seek to do dredging outside of the approved permit with a separate application for a separate permit then he does not think dredging would require modification of the existing permit as it is “a procedural matter.”

Mr. Rooker said he heard Mr. Frederick comment the previous night that if the existing permit is amended, it would probably take 9 to 12 months to get that done. Mr. Rooker also said that he thinks they should be cautious about amendments to the plan that would require them to go back through a lengthy regulatory approval for a plan they already have permitted.

Ms. Palmer said that Mr. Frederick had already told them that dredging Segments 1 - 3 gives provides 3% of the total volume that is needed. She asked if keeping dredging separate meant that 3% of the volume could not be counted in the Virginia Waters Protection Permit.

Mr. Frederick responded that he would prefer not to answer that question until he has talked to counsel to get their thoughts.

Mr. Gaffney commented that City Council was fairly explicit that they wanted dredging to be permitted separately.

Ms. Mallek then asked if the time frame for the separate permit would be about a year or if it would be longer. Mr. Frederick responded that HDR had suggested it could take as long as two years from the time the design work was started until the permit was obtained. He said he had hoped it would entail a shorter time frame, but he thinks the community should be prepared for the length of time suggested by HDR.

Mr. Boyd said that he assumes the City's inclusion of dredging in the resolution was not going to be permitted for capacity or water needs, but more for maintenance and operations issues. He said he thinks the formula that would be applied for maintenance reasons would be similar to the one being applied to the operating costs.

Mr. Norris said it was Council's intent that dredging would be to obtain additional water supply.

Mr. Boyd said that the County is going to pick up the biggest part of this dredging because Council wants to do it, but it is not necessary to provide the supply. He added that he thinks the reason for undertaking it would have to be because of an operating issue.

Mr. Gaffney said that he felt one of the keys is going to be when they take the dam to its full height or some height below that, with the lower height to be determined by the demand and storage capacity at that point. He added that they will probably be considering everything, and clarified that they are talking about a timeframe of 25 to 30 years from now if they do the dam in stages. He stated he does not think it is necessary to have a mandate that, in 30 years, the height would have to be 42 feet if 38 feet is sufficient.

Mr. Boyd said that wasn't what he was implying, but believes this particular issue seems to be more of a maintenance issue - maintenance for the existing water supply and not to add capacity. He emphasized he does not view it that way because the capacity is going to be added with the additional dam, whether it is 30 feet, 13 feet, or 42 feet. He added that he would not be willing to support the County paying for the biggest bulk of this particular operation because it is maintenance and not an additional supply that would be divided into a shared formula.

Mr. Norris said that he thinks Mr. Boyd is jumping ahead to the cost allocation. Mr. Boyd responded that this is exactly what he is talking about. Mr. Norris said he is not sure that is the point of today's meeting.

Mr. Gaffney said he wanted to go through the bullet points first, identify the differing opinions and then come back to discuss each point.

Mr. Thomas asked Mr. Norris if the City was interested in dredging to keep the flow of the river going, and if that was the goal of this exercise.

Mr. Norris said that Mr. Thomas' statements were correct.

Ms. Palmer commented that the SFRR was a seven and one-half mile long run-of-the river reservoir that drains 260 square miles, so the hydrology is such that dredging is not necessary to keep the river open. She added that, if that really is a goal, it needs to be clarified.

Mr. Gaffney asked Mr. Frederick if there were any other issues to discuss concerning Item 2.

Mr. Frederick responded that the two other points needing to be addressed concern dredging. He stated that the resolution implies that this is going to be a separate permitting process, and the other Board and Council members expressed agreement with that statement. From his conversations with folks within Albemarle County, he said, he understands there may be some interest in an RFP. He said it should be clarified who makes the decision after an RFP has been issued on whether or not to dredge based on the proposals received. Mr. Frederick added that he also thinks maintenance dredging has been clarified as being the second step after the SFRR has been previously dredged.

Mr. Martin said that, as a point of clarification, the issue about who was going to pay for dredging needed to be discussed and resolved before a decision is made to seek a permit. Mr. Gaffney said that that issue was further down in the cost sharing discussion.

Mr. Frederick next inquired if the resolution was a commitment to conduct the dredging or for the issuance of an RFP, and said the other question concerned the decision-making process for the extent of the dredging operation. He said the resolution refers to restorative hydraulic dredging of at least Segments 1 - 3, which he felt "leaves the door open." Mr. Frederick clarified that the third issue dealt with cost allocation particulars.

Mr. Martin stated that if the City wants to dredge and if the City says it's going to bear the entire cost, he would have no objection to it. He added that if the ACSA is going to have to share in the cost of dredging, he has got to know that early on because there are a lot of other expenses to meet in terms of dam construction, repair and maintenance. He emphasized that there is a "huge burden" being placed on County ratepayers now and out into the future.

Mr. Gaffney commented that they are really just going over the questions HDR had recommended and Rivanna had discussed. He said they would probably like to proceed on actually doing an RFP for dredging Segments 1- 3 because that is where the sand is and that is where they think the cost could break even. He added that he has no problem with this approach and suggested moving on to Item 4, stating that the group can come back later to issues arising from Item 2.

Mr. Frederick then discussed **Item 4, related to maintaining the pipeline from the Sugar Hollow Reservoir to the Ragged Mountain Reservoir for use in the event of a failure in the water transmission system.** He said he has put that on the list of items where the two localities differ in opinion, because he has not heard the County agree to that particular provision.

Mr. Rooker commented that he does not think anybody imagines digging it up, so it makes sense to leave it there.

Ms. Mallek inquired if he was talking about the current pipeline or a new one.

Mr. Norris said that the reference is to the current pipeline.

Mr. Frederick said the last phrase, "for use in the event of a failure in the water transmission system" is the issue they need to discuss more so than the issue of keeping it in place.

Mr. Rooker stated that, having listened to Council's deliberations last night, their points as to an existing pipeline made sense. He added that, if there were an emergency in the future and Ragged Mountain needed to be fed from someplace else, there would be a way of getting water there, albeit perhaps a leaky system. Mr. Rooker said it certainly makes sense to keep that in place.

Mr. Huja said that is exactly the thought Council had.

Ms. Palmer said that she agrees with Mr. Rooker's comment about not digging up the pipeline. She stated that the water supply plan had envisioned using Sugar Hollow Reservoir and when they needed it, to let the water out and pick it up at South Fork so they have a natural conduit to get the water to a treatment plant. Ms. Palmer said they have studied that approach to see if there was evapotranspiration and what kind of losses they would incur – and they were pretty minimal, adding that was part of the original plan.

Mr. Gaffney said he would guess the only reason for that to remain viable is if the pipeline from South Fork to Ragged Mountain was inoperable for some reason or another.

Ms. Palmer said they would not maintain it and they would not put money into it.

Mr. Brown commented that Council deliberately changed the language from “maintain” to “keep in place” so there would not be an expectation of an effort to keep the pipeline in good condition but rather just an understanding that they would like to see it remain in place.

Mr. Boyd asked if the pipeline is not used over time – a 10-year span or so – whether it would become unusable, adding that he does not know what is involved with maintenance.

Ms. Mallek asked when a valve is closed and dry if it decomposes, degrades, or corrodes more than if it has water running through it.

Mr. Frederick said that the pipe material itself – while it is subject to cracking with freezing and thawing – is a pretty hardy material, so the degradation may just be rust. He added that he does not see that as a much longer term process and said the joints are made with old technologies so they have more of a tendency to leak. Mr. Frederick stated that there are many areas of the right-of-way where forests have grown up around the pipeline, explaining that the easement corridor is undefined and the trees have not been kept off the pipes – which could present some problems. He added that air would need to be released at high points on the pipeline to keep it operating well, noting that those would probably be the first things to corrode and fail.

Mr. Rooker inquired if Mr. Frederick was stating that the ability to use the pipeline may diminish as time goes on because it is deteriorating. Mr. Frederick confirmed that would be the case.

Mr. Rooker stated that he did not see anything in the wording here that he thinks creates a problem in terms of the plan.

Mr. Martin commented that he does not see why the pipeline provision is in the agreement at all, unless there is some other reason for its use other than to serve as a backup in the event of a failure.

Mr. Huja said that there was no other reason other than for emergency case uses and Council was just acknowledging that fact.

Mr. Mallek asked if this was implied in the existing permit.

Mr. Rooker commented that he did not see it as a matter of discontent. He added that no one is expecting that the old pipe will be resumed and, if it serves an emergency purpose in the future, that would be great.

Mr. Frederick then discussed **Item 5, to permit a dam with a height of up to 42' by adding additional feet to the existing dam or by constructing a new dam up to 42'. In case the existing dam is built upon, improvements, repairs, and modifications to the existing spillway structure will be constructed to bring the dam into compliance with all applicable dam safety laws and regulations. The construction is to be done in phases, the first phase being the construction of a 13' raise to the current height of the dam and construction of up to an additional 29' as needed based on ten-year evaluations of actual use and population growth. The dam will be filled in phases, as water is needed.**

Mr. Frederick said one of the issues for discussion relates to how the decision is made between using the existing dam or building a new dam. The second issue involved agreement on the appropriate height for the initial phase, which he felt was probably the most important question for discussion today.

Concerning the issue of using the existing dam or building a new dam, Mr. Rooker commented that he felt at some point all the questions needed to be answered about whether you could actually build a dam to 42 feet on top of the existing dam and if this option was actually cheaper. He then questioned the long-term viability of this approach, stating he does not believe that the information is in hand today to say one way is superior to the other. Mr. Rooker said material would have to be brought in that may or may not cost more and may or may not be as structurally sound and, at some point in the near future, that needs to be answered and he doesn't believe that can be done today.

Mr. Gaffney said that, unless there were objections, it was appropriate to return to Item 2 concerning dredging to see if the differences could be resolved.

Mr. Rooker said that the concepts in here – depending on how they are interpreted – don't bother him but there needs to be an order stipulated. He stated that the first step seems to be permitting then going to RFP with that permit, but asked if that order should perhaps be reversed. He said the only problem with the latter plan is the possibility of not getting a permit for the specifics of the RFP. He said those things ultimately need to be done in order to make a decision about what to do next. Mr. Rooker said it is a little “aggressive” to say that hydraulic dredging would be conducted, explaining that the RFP and permitting process would determine whether or not it's viable to move forward with dredging.

Mr. Boyd commented that he would like to use the word “viable” because it raises the question of how much it will cost both in the short and long-term. He said that he doesn't have any problem with this particular condition, as long as it is completely removed from the existing water supply plan and is

considered a separate project. Mr. Boyd said it could potentially take two years to get this permitted, and does not want to interrupt the process of the dam and additional water supply.

Mr. Norris stated he did not believe City Council had a problem treating the issue of dredging as a separate process, adding that there will likely be substantial water gains from it. Mr. Norris said that it is spelled out in the resolution as a separate permitting process, and further added he does not want the other process to be delayed by this.

Ms. Mallek asked for clarification about whether the continuous maintenance phrase was in the first section, as it appeared to her that Council was moving silt from the other sections so that it can be trapped there – thus protecting the viability of the rest of the reservoir.

Mr. Norris responded that he felt the general sense of the Council was to look to the reservoir for water supply and to look to restorative dredging as a way to recapture some lost water supply. He added that they discussed the possibility of dredging the whole reservoir versus dredging just the upper portion of the reservoir – and as a way of avoiding having to “come down on either side,” they left it relatively open. Mr. Norris stated they are looking to the RFP process to help inform that final decision, and if the bids that come back indicate, as HDR predicted, that the first three segments can be done fairly cheaply then the other six segments would likely be incredibly expensive. He stated that the information would help Council decide and does not bind them either way. Mr. Norris said in terms of maintenance dredging, it is not limiting in any way to simply maintain the portions of the first three segments. He stated, in his personal opinion, if a reasonable bid is obtained for restorative dredging of the whole reservoir to its original capacity or as close as possible to that, then the maintenance dredging would basically be for the 30,000 to 60,000 cubic yards of silt that enters the reservoir every year. Mr. Norris stated they would remove that material so there is a pristine reservoir for many years to come, but noted that it's premature to speculate at this point until the RFPs come back.

Ms. Palmer commented that she was still having trouble with the clarification, stating that it is known that the first three segments provide about 3% of the total water needed for the water supply originally planned. She said that she doesn't understand what is meant with dredging that is “separate” from the water supply plan but is still counted on for volume. Ms. Palmer asked how much of that is going towards total volume because the permit is going to be based on the in-stream flows, which are based on total volume.

Mr. Huja stated that the water gained from dredging, if you use that water, would mean less work would need to be performed.

Ms. Palmer said that it puts it in the permit so it puts it in the plan.

Mr. Gaffney clarified that dredging is a separate permit so it is not in the initial permit.

Ms. Palmer commented that you cannot count dredging as volume.

Mr. Gaffney stated that the RWSA is already permitted for the initial construction of the dam, but it would take a separate permit to do dredging.

Ms. Palmer said that she understood Mr. Gaffney's last statement, but added that the Virginia Water Protection Permit is for the in-stream flow and would obviously need to be amended. She stated there is concern about whether it is going to be a major amendment or a minor amendment. Ms. Palmer also said that, right now, it is based on a specific quantity of water, and the question is whether the amount of storage is going to be reduced, as it would affect the permit.

Mr. Gaffney commented that he thought the 3% was insignificant in the whole scheme of things.

Ms. Palmer stated that it sounds like it would reduce the total quantity because the total storage capacity would be reduced, so the permit would have to be amended.

Ms. Szakos commented that the permit is for a dam at 42 feet, and felt it was not a reduction in storage but more of a timing issue.

Ms. Palmer stated that the permit would still need to be amended at some point, so the issue becomes whether it will be a 30-year water supply plan instead of a 50-year water supply plan.

Ms. Szakos commented that she did not think anybody is arguing that 42 feet is needed now in order for that to happen.

Mr. Gaffney asked Mr. Frederick if dredging is permitted separately, will the current permit have to be amended.

Mr. Frederick said that he did not know the answer at this point, and once it is understood from a policy standpoint where the Board and Council are, the RWSA would need to sit down with the regulatory agencies and delve into some of these details.

Mr. Boyd asked if City Council would agree to include that as a condition, if it does impact permitting requirements for the water supply plan.

Mr. Gaffney added that it could be done after the dam is started.

Mr. Boyd commented that it will probably take that long to get approval for it anyway.

Mr. Norris questioned to what extent it impacts any permit currently held with DEQ, and stated if there is just a simple permit amendment process needed it would probably not delay any of this.

Mr. Rooker said that the amendment process consumed a nine to 12-month period of time. He then referred to a chart that was handed out and commented that the proliferation of cost estimates being circulated ultimately obscured what the true cost comparisons are. He said when the Council meeting was opened last night the segment to discuss the water supply plan focused on requiring additional capacity because all the other components of the plan had been decided on. Mr. Rooker said if you look at the cost of acquiring capacity in the various ways that have been considered, increasing the height of the dam costs somewhere between 1/10 and 1/15 of the cost of dredging, per gallon, if the goal is creating capacity. He acknowledged this is not an RFP and that final costs are not known until someone bids on and bonds the work.

Mr. Gaffney stated that he thought the focus of Segments 1 - 3 is the potential of doing it at no cost to Rivanna and possibly even making money, adding that these numbers shouldn't be used for overall dredging estimates. He added that he does not want it to affect the current permit but a commitment would still be needed to do those segments.

Mr. Snow added that he agrees, provided it pays for itself.

Mr. Thomas stated that he agreed with Mr. Snow that obviously if it creates capacity at no cost for Rivanna, it should go forward. He asked if one-time dredging means that you only have to initially raise the pool to 13 feet instead of 18 feet, adding that the cost of dredging to the cost of raising the pool height for the dam already in agreement to construct would need to be compared. Mr. Thomas stated from his perspective that would be the key number, emphasizing that he is concerned about creating overall capacity whenever needed with the minimum impact on ratepayers and taxpayers.

Mr. Norris stated that DEQ's own numbers indicate that restorative dredging of the full reservoir – bringing it back to its original capacity – would provide enough water for approximately 30 years, with a demand expected of 15.5 million gallons per day, according to the Swartz report and DEQ analysis. Mr. Norris said, if full-capacity dredging plus a 13-foot rise are combined, that would provide enough water to meet safe yield for approximately 40 years. He stated this is a substantial investment in the community's long-term water security and, by avoiding building a 42-foot dam now, there would be tremendous savings to ratepayers of this community and avoidance of a significant amount of environmental damage to natural resources.

Mr. Boyd asked Mr. Norris to substantiate the cost savings, as he doesn't see it.

Mr. Norris explained he is adding in the actual cost – capital plus interest payments – and, by any calculations, it is going to be substantially cheaper.

Mr. Rooker asked Mr. Norris to look at the chart which was provided by the engineers that the City had hired to provide the numbers.

Mr. Brown commented that this discussion was getting into territory where City Council did not agree last night, adding that they could not come to an agreement on full dredging but came up with a way to try to move forward, get a dam built and begin to dredge. He said this would give time for the community to see if there is a way to avoid building the dam to the full height and, at the same time, plan to build the dam to the full height so officials have to essentially prove that is a better plan 10 years from now. Mr. Brown stated he would prefer not to go back and talk dredging versus dam building.

Mr. Gaffney commented that what is in the resolution is an agreement to permit an RFP and dredge Segments 1-3. He added that it also addresses continuous maintenance, for which there are some differing definitions. He said, in HDR's report, it made sense to dredge and was something that Rivanna would likely vote to approve.

Mr. Boyd stated that Mr. Gaffney was basing that on the fact that it would be a zero cost for Rivanna and said he does not have any issue with that but would like to consider the idea of putting the business risk on whoever is going to dredge the SFRR. Mr. Boyd suggested letting the dredger decide on whether or not there is a market for the material, as RFP bids will likely dictate.

Mr. Rooker stated that he met with several dredgers and voted for a dredging plan eight years ago. He added that Blue Ridge Sand said they can take care of one component of the cost by selling material and can probably take care of the removal part, but not the actual hydraulic component.

Mr. Brown asked how the costs were being split up for doing the overall project through the approved plan.

Mr. Rooker stated that it would be subject to subsequent agreement.

Mr. Brown further questioned why this would not fall into the same category, and asked why this would be treated differently than the entire agreement whereby both localities are establishing cooperative terms in order to do an extensive project. He stated that it cannot move forward until they can figure out how to agree on paying.

Mr. Rooker commented that he did not have a problem with that if they stick to Segments 1-3 and maintenance dredging; however, he said that Mr. Norris keeps talking about restorative dredging of the entire reservoir and pointed out that that is not what is in the resolution.

Mr. Gaffney pointed out that Mr. Norris keeps coming to restorative dredging of the entire reservoir, but that is not what is in the resolution.

Ms. Palmer commented that one of the reasons why this may not be treated the same is that if it is being done for capacity and a dam is needed also, to some extent the old dam would need to be repaired and they shouldn't front load the project. She added that initially the City said that they wanted a certain percentage of the new capacity, so Albemarle said they would take the rest, but the way things have transpired it is unclear as to whether the City even wants a portion of that new capacity – adding that it would be difficult to buy 80 years of capacity for ratepayers. Ms. Palmer said she was also going to ask about the cost of increasing the height of the earthen dam in phasing.

Mr. Gaffney suggested waiting until the discussion on Item 5 to address her question.

Mr. Huja stated that the SFRR is part of the water system with water being its asset, and he doesn't understand the reluctance to dredge and retain the asset that's already in place and will lead to more revenue in the future.

Mr. Mallek commented that in addition to the financial cost, there is an environmental cost around the dam as well as a neighborhood cost. She said three districts come together right at Reas Ford, adding that the citizens there will be affected either once every 10 years or all the time with the impact, very similar to the situation with the quarry on Rio Mills Road. Ms. Mallek emphasized that's what happens with dredging – the contractors have to access and remove the material, and those are things that need to be considered as part of the dredging estimate.

Ms. Palmer stated that everyone agreed during the SFRR Task Force meetings that the reservoir is a community asset. She also said that restorative dredging is not really needed as the reservoir is not going to atrophy or die – and said the hydrology is such that the channel will remain open. She added that more than five miles of waterway from the Hydraulic Bridge upstream is slowly narrowing and the few miles below that to the dam have steeper sides with a pool that will remain for quite some time. Ms. Palmer stated that, during the SFRR task force meetings, estimates indicated that perhaps 75 years from now there would need to be some dredging done around the intake. She added there is a big difference between restorative dredging to the 7½-mile long river versus keeping it maintained for recreational purposes and other uses. Ms. Palmer mentioned the biologist who used to work for the County who spoke to Council last night, noting that he was trying to explain that sediment deposition is somewhat dependent on storms.

Mr. Gaffney then suggested that the group move on to Item number 4, and then come back to revisit this item.

Mr. Snow stated that before moving to Item Number 4, perhaps a motion or agreement could be done to put Item 2 to rest. He said there is agreement on taking care of Segments 1-3, provided it can be done at little or no cost to localities, even though it may take a couple of years.

Mr. Boyd commented that he would have no problem with Mr. Snow's suggestion, adding that the dam height needs to be addressed next as he understands if only a 13-foot extension is built, it is going to be about 99% of the cost and it would be better to build it at the same cost.

Mr. Gaffney stated that, with item number 4, there was a lot of agreement along with some questions on what happens to the pipe over time, and suggested moving on to number five.

Ms. Palmer asked what would happen if someone wants to build something over top of that pipeline and the RWSA is maintaining it, and wondered if an easement would need to be maintained.

Ms. Mallek inquired if the Sugar Hollow pipeline easements were all in the floodplain, noting that it is unlikely that somebody would build a house or a garage in the footprint.

Mr. Frederick responded that the RWSA occasionally deals with the issue that someone wants to build a garage or add an addition to their house and they find out – hopefully before they start – that they are on top of the pipeline – thus creating a conflict to be resolved.

Mr. Thomas asked if that was an easement or a right of way and if all the right of ways were designated.

Mr. Frederick said that Mr. Kurt Krueger advises that it is an easement, adding that it is a 1927 document, which is very general in nature, and thus does not look anything like the easements of today. Mr. Frederick also said that one of the provisions in the document states that the property owner gave the right to the City of Charlottesville to put a pipeline wherever its engineers said they wanted to. He added that obviously, as long as the pipeline will be in service, the RWSA would take the position that they have a right to be there and a right to own it.

Mr. Rooker commented that everyone seems to be in agreement that the old pipeline would be left in place.

Mr. Gaffney proceeded to item number five.

Mr. Martin stated that he had a question with respect to the height of the dam. He said there was an agreement in 2006 to construct the dam to 45 feet and the City did not object to that, adding that the City is now proposing a dam of 13 feet. He said that since that time there has been some discussion about the City's ownership rights of the reservoir land and asked if they planned to exercise ownership rights to prevent the construction of a 45-foot dam.

Mr. Huja responded that the City said that the dam could be built up to a height of 42 feet but that there was no need for it.

Mr. Brown added that he had never been part of any discussion by which the City would exercise that right.

Mr. David Thomas said that, regarding the cost of phased construction, he understood the plan was to initially build the dam to full height but only filling the pool partway due to potential tree impact and environmental concerns. He asked what the cost difference is in phased construction because it seems silly to be talking about only a 1% or 2% or 3% savings to go to 13 ft. and then 42 ft., where a 50% difference with less money borrowed up front is another matter.

Mr. Gaffney asked Mr. Frederick to address Mr. Thomas' question.

Mr. Frederick distributed a matrix to Board and Council members and to members of the public in attendance, stating that the information in the table is a summary of what's already been made available. He said the first line says "Preliminary Design Full Height Single Phase," which is information from the report Schnabel Engineering released in May 2010 regarding a new earthen dam. He added they came up with a probable opinion of construction, with costs now estimated at \$22.5 million with a range of \$22.2 million to \$27 million. Mr. Frederick said that Option 1, Option 2, and Option 3 were contained in the supplementary report that Schnabel released in July, after they were asked to do a phased construction assessment for a new earthen dam. He said that Option 1 was \$15.4 million and represented 68% of the cost of a full-height new dam, explaining it is built with a foundation only to support 13 feet. Mr. Frederick said that if this one is built and then expected to be raised later, construction would have to go all the way to the foundation with whatever improvements are to be made.

Mr. Rooker asked if anyone had been talking about that option.

Mr. Frederick said that he was not aware of anyone discussing this option. He commented on Option 2, which involved building a support structure to accommodate 42 feet but stopping at 13 feet with the idea that a cap will be put on later to raise it the rest of the height –building a shorter dam initially. He stated that according to Schnabel's estimates, 99% of the cost of a new full-height dam would be paid in the construction of Phase I and then 16% would be spent to put the cap on in Phase II. Mr. Frederick said the cost structure relates to the fact that a spillway is being built for the first phase and then demolished to build a new one for the second phase. He added that the spillways ultimately have to work for a specified height and then modified – or in this case, as Schnabel indicates, entirely rebuilt. He stated that Option 3 involves building the entire structure in the first phase without the pool being filled and added that the pool would be filled in stages, based on the first height being 13 feet. Mr. Frederick said most of the cost for building the entire structure is 98% in the first phase with the second phase cost at 3%, as it is largely just the clearing of the additional area to raise the pool, for a total of 101% phasing – which is very close to the same cost as building a new dam. He stated that the option of actually phasing the dam itself creates substantial additional costs long-term, and said while there are valid reasons for considering phasing the pool height, trying to save money is probably not one of them.

Mr. Norris asked Mr. Frederick if he had the chart from Black & Veatch about their preliminary estimates on simply expanding the existing dam.

Mr. Frederick said that he did not have it with him.

Mr. Norris stated that these are very preliminary estimates and there has been no final design and engineering, but all three options are substantially cheaper when you are talking about simply expanding the existing dam. He said that the margin between expanding 13 feet and expanding 42 feet is about \$9 million in capital costs, in addition to interest payments on any bond that has to be issued.

Mr. Rooker commented that engineers can argue among each other about this cost differential, but following the plan outlined here would mean spending 99% of the money to acquire 20% of the capacity.

Mr. Norris stated that Item 5 leaves it open to either a new dam or building on the existing one and does not decide it either way. He noted that City Council did not make that decision last night. He added that if one looks at the cost of building on the existing dam, there is a much different cost range.

Ms. Palmer stated she agreed with Mr. Norris in that the costs from the Black & Veatch study are very preliminary, noting that, a few years ago, Gannett Fleming provided a preliminary price on the Ragged Mountain concrete dam of \$35 million. She added that when they did the geotechnical work, it turned out to be \$84 million – and the geotechnical work has not been done by Black & Veatch, who have included a very large qualifier in their letter.

Mr. Gaffney emphasized that what is being contemplated here is a choice – whether to build a brand new dam or build upon the existing one. He said he interprets what Mr. Rooker is saying as it makes sense to build the whole dam if a new dam is being built, but what Mr. Norris is saying is that may not hold true with building upon the existing dam.

Mr. Carter asked when that decision will be made - when RFPs are put out or through more studies.

Mr. Snow also questioned how much time is lost if there is further study – another year, another two years – and whether that will mean another couple million dollars to get to the bottom line.

Mr. Boyd stated if the permit is changed to build on the existing dam as opposed to building a new dam they would likely have to go through an extensive permitting process, adding that the regulatory bodies are not concerned with the safety issues, only with capacity and environmental issues.

Mr. Frederick said that DEQ and the Corps are concerned about impacts to streams, wetlands, endangered species, etc., and do not have a vested interest in saying whether it has to be built onto the existing dam or has to be a new dam. Mr. Frederick stated that the Dam Safety Commission has a different set of interests and is a much different agency, adding that they do not care what method is used as long as safety issues are resolved.

Mr. Brown stated that this can be considered in terms of percentages, but it can also be considered in raw numbers. He added that most of the people he has spoken with talk about raising the pool gradually; therefore, in subtracting the additional cost of raising the pool use and then comparing options 1 and 2 the overall cost to phase the dam is about \$1.5 million to \$5 million. Mr. Brown indicated that the low end of probable construction of the full-height single phase, if it was done all at once, would be \$20.2 million and said the phased approach would be \$21.9 million – or a \$1.7 million difference. He added that \$1/2 million could be subtracted from the additional cost of raising the pool height, assuming everyone is in agreement that the pool height would be done in phases, no matter what.

Mr. Rooker commented that a letter from DEQ says, assuming they are dredging a small area, that it creates maybe 3% additional capacity, so virtually all capacity is made up at Ragged Mountain. He stated that the letter sent by DEQ basically says that a 13-foot dam will not be approved, and says the dredging and dam alternative when evaluated in the context of the existing permit conditions would not meet the in stream flows that were originally proposed. Mr. Rooker emphasized that the permit would need to be significantly reworked to address these changes and implementation of the dredging and dam alternative – or other alternatives – would likely require a major permit modification or the issuance of a new permit. He added that there is no way, as he understands it, that the 13-foot dam without total restorative dredging is going to satisfy the quantity of water necessary to serve the community as well as satisfy downstream flow requirements. Mr. Rooker said that spending 99% of the money to build a 13-foot dam, which has 20% of the total capacity and would appear to require entirely new permitting, seems to him not to make a lot of sense.

Mr. Gaffney asked if the DEQ letter addressed the dam height that would meet that requirement.

Mr. Rooker said DEQ was asked specifically about the 13-foot dam and dredging and the letter does address that point.

Mr. Colbaugh stated that when he looks at the numbers and recalls the letter sent to Charlottesville City Council, it is clear that most of the new capacity of that reservoir is going for County growth so the County ought to pay for it. He stated if a 13-foot dam is what is proposed for the first phase then the bodies should work out a cost-sharing agreement for that and then build to the full height. He said that would be the additional capacity available and it would simply be run on an operational permit that controls how much water is kept in it. Mr. Colbaugh noted that Rivanna could do an operational permit that phases the pool height and, if it is a matter of cost to raise it from 13 ft. to 42 ft. to 45 ft. or whatever it is, they are willing to step up to the plate and pay for that addition completely.

Mr. David Thomas asked what City Council's opposition is to building the full height and then filling the pool as necessary.

Ms. Szakos responded that she actually argued the other position last night, looking at the full height with a phased pool. She said they talked a little bit about the idea of building for failure, and if they build with acknowledgement that we will not be conserving, the City will not be meeting the ideals of a community that takes care of its resources.

Mr. Mallek stated that, going back to the letter Mr. Rooker mentioned, which had been sent to her and Mr. Norris in August, the DEQ states that, without this capacity, the plan does not meet the habitat protection values of the river and that would not pass. She said she did not know how a 30-foot level would play out given this chart.

Mr. Gaffney asked Mr. Frederick if Rivanna believed a 30-foot height would meet what DEQ was concerned about in the letter, if DEQ has indicated that 13 feet would not meet it.

Mr. Frederick responded that he must qualify his statements about what the DEQ and the Corps might do as he does not know the complete answer. He explained that the way the regulatory agencies work is you apply for something and give them all the details, facts, and supporting documents – and nine months later you get an answer. Mr. Frederick stated that when you have an informal discussion with

them, sometimes you can get helpful information from them but you can never get a straight yes or no answer. Mr. Frederick said the RWSA has done some preliminary work regarding phasing of the pool and the conditions upon which the work was done were within the framework of a permit document itself that talks about a dam and pipeline. He said it does not consider dredging in this context, even though the community may agree to do so. Mr. Frederick stated that if you are planning for something on too short an interval, you definitely increase the risk that the regulatory agencies are not going to agree with what you propose. He added if you start out about 15 to 20 years and put into your programming the condition of a smaller reservoir at SFRR 15 to 20 years out, there is an assumption that you may not dredge the reservoir. He said that if you put in the additional stream flow releases to the Moormans River that are written in the permit document now, you want some horizon about 15 to 20 years out for enough water to accommodate some reasonable expectation of growth. Mr. Frederick said Rivanna is coming up with numbers that are approximately in the range of 30 feet to raise the pool level initially, adding that will achieve safe yield or something close to 1/3 of the way between where things are now and the goal set in 2004 at 18.7 mgd – and, reaching 1/3 of safe yield can actually be accomplished without raising the pool height above 30 feet by building the pipeline from South Fork. He said that this may not seem intuitive, but having a larger pipe from a larger water source to help keep Ragged Mountain full in the early stages of a drought tends to make a pretty significant difference in safe yield. Mr. Frederick stated that this is capacity beyond what Sugar Hollow can provide, not just because of pipeline size but because the reservoir itself is fed by an 18-square-mile watershed so it will deplete more rapidly. He said the last third of safe yield, if it's needed in the future, is where the argument lies. Mr. Frederick said it is not used until it is needed, at which time the pool height is raised from 30 to 42 feet. He added that, if this were to be detailed and put into a formal proposal, it would require more study, but preliminarily it appears that 13 feet is not going to provide enough to satisfy a 15 to 20-year plan.

Ms. Palmer said she wanted to respond to what Mr. Szakos said about conservation goals. She stated that she had been part of a group that pushed for conservation for many years, but now they are looking at a situation where pushing that hard and lowering the dam height might actually be hurting the rivers. She added that the big concern now is backing into a situation and not being able to control something like population as well as we would like – which could lead to trouble later on.

Mr. Martin stated that his concern about either phasing construction of the dam or phasing the pool level relates to the future decision making that would need to happen in 15 to 20 years. He added that this is why he started asking the question earlier regarding the City not voluntarily relinquishing ownership rights to those reservoirs and viewing itself in a position in 15 or 20 years of either approving or vetoing a dam expansion or increasing the pool. He stated that, at that point, the City would be making judgments on County growth and deciding whether or not County growth justifies increasing the dam or increasing the pool level. Mr. Martin emphasized that he does not think it is the City's call to be determining what additional capacity ACSA needs in order to serve County residents, as their job is to decide what capacity is needed for its own residents. He said that, in 15 to 20 years, they would be having the same conversation and big debate about whether or not the pool level should be raised or whether the dam should be raised.

Mr. Norris responded that the City is clearly committed to meeting safe yield **that this region** needs to meet the needs of both the County and the City, and what's being discussed here is whether they are going to reassess the water plan based on actual growth, actual population and actual use. He added that the City has committed to building up to 42 feet if that becomes necessary to achieve safe yield and stated there is nobody on City Council that wants to put this region at risk of not meeting that. He said, "I do not know how [more] clear we can be. This is not an effort to put the City or the County at risk of not having enough water.

Mr. Boyd commented that people who are not elected in Albemarle County are holding the County hostage in what they can and cannot do based on what you all want to do. He added he wanted to relay a story that is very parallel to this situation. In 1993 City Council and the BOS decided, under pressure from the regulatory authorities, that they needed to address capacity and maintenance issues in the jail. He said a consultant was hired and, after assessing the situation, the consultant recommended increasing the size of the jail to between 500 and 600 beds by 2008 to meet increasing needs. He said they ended up with a 15-year plan and City Council balked at that and wanted to look at alternatives to incarceration, and the Board relented. He stated they built half of what the consultant said they needed and now there are overcrowded jails that are just about at the capacity that the consultant predicted for 2010. Mr. Boyd added he does not want to repeat that type of situation because of short-sightedness about what the needs would be, and would much rather have somebody sitting here 30 years from now saying, "Gee, we have got a little more water than what we need," than somebody sitting here saying, "You have to conserve because there is no water there." Mr. Boyd said he takes exception to the fact that local government is going to force people into conservation by making less water available. He said business people, like Mr. Snow, went out of business during the last drought because there wasn't enough water supply.

Mr. Rooker added that is especially true when the cost between a 13-foot structure and a 42-foot structure difference is 1%.

Mr. Norris then questioned if Black and Veatch's numbers are correct or close to correct, adding that he doesn't know why a new dam would be built unless it was determined that the life span of the dam would be significantly different.

Mr. Rooker stated that different engineers seem to have different opinions on whether it makes sense to add to the existing dam. Using Black & Veatch numbers, Mr. Rooker pointed out the difference between 13 and 42 feet is not huge.

Mr. Norris responded no, it is huge, \$9 million.

Mr. Rooker said another factor is the current bidding climate, noting that the Meadow Creek Interceptor was estimated at \$20 million and came in at \$11 million. He said that, at some point, the economy is going to come out of its current malaise and the current bidding climate will not be there. Mr. Rooker said that four or five years ago RFPs went out and the bids came in 30% or 40% higher than the engineering estimates. He said the current situation is the exact reverse of that, and they should take advantage of the bidding climate. He said that if they decide to build the earthen dam that has been estimated, it would be at the very low end if not well below the range that's estimated, which saves ratepayers a lot of money.

Mr. Norris asked if the same argument would not be true of building on the existing dam.

Mr. Rooker said that he was not making a differential here and added if they don't build at all right now, they will incur a second cost at a time when the bidding climate is probably not what it is today and it would make no sense, from a community standpoint, to incur that cost. Mr. Rooker stated that, on a given day, the community uses 3% or 4% of the water that comes down the river, so whether or not people conserve probably does not make a big difference during times when there is no drought. He stated that when there is a drought, people do conserve significantly, with the last drought seeing people cut their consumption by 30% to 40%. Mr. Rooker added he does not think a water supply plan can be based upon saying conservation numbers would be tweaked.

Mr. Gaffney commented that he felt the discussion was digressing, and suggested breaking down this bullet item.

Mr. Brown said the difference in bidding it now is about \$1.5 million.

Mr. Rooker asked why they would not go ahead now and build and said, for a 1% cost difference in getting the construction done, it should be bid now in a good climate.

Mr. Snow commented that he understood Mr. Norris to say that there might be a better way rather than building an earthen dam and asked if there was any way to put both ideas out for bid simultaneously.

Mr. Gaffney said that it would need to be designed first, adding they could put the earthen dam out to bid.

Mr. Snow asked if that project had already been designed.

Mr. Gaffney responded that it is not completely designed, but is at 30% to 40%. He stated at the same time they could begin the testing that Black & Veatch would need to determine the next step in what they do, which is essentially what Schnabel did – coming in and doing all the bore-hole testing for the foundation.

Mr. Boyd said that Schnabel also determined that material is onsite for the most part and they have done a lot of the preliminary work.

Mr. Gaffney stated they would essentially be designing two dams, finishing one at one time and looking at the other one to see whether that makes sense.

Mr. Colbaugh asked Mr. Frederick if the reason that the dam height needs to be 42 feet or 45 feet is because to get to 42 you take 3 feet of material out of the basin of the reservoir and build an earthen dam out it, whereas if you import material to build a rock dam, you have to import all that material.

Mr. Boyd asked Mr. Frederick to talk about the fact that if the County was willing to pick up the additional cost and that is of no concern to the City, then it should not be a cost issue.

Mr. Frederick referenced Mr. Colbaugh's question and stated there are two reasons why they recommended that the ultimate full height be shortened 3 feet. He said Schnabel's proposal was to excavate soil out of the bowl to build a dam, which would create more volume. He added that the second reason is, when staff was reviewing Schnabel's report, they identified that Schnabel recommended a dead storage pool of 10% of the total volume. Mr. Frederick said they knew that Gannett Fleming had previously recommended 15%, and a 45-foot height was based on 15% dead storage. He added that RWSA went back to Schnabel and told them they are the engineers on record and asked them to clarify their recommendation. He added Schnabel came back and indicated they were able to reduce the dead pool storage volume, which allowed them to drop the 3 feet.

Ms. Palmer asked Mr. Frederick how long would it take for Black & Veatch to get to the same place that Schnabel is right now with the design.

Mr. Frederick responded if the goal is to determine if the concept that Black & Veatch proposed is a more cost-effective approach, the next step is to have the work they've done to date subjected to a review similar to the review that Schnabel received from the expert panel. Mr. Frederick stated from conversations he has already had, it might result in the need for more testing to collect more data underground under where the existing foundation is positioned to determine the rock conditions there. He added that those investigations can take three to four months, depending on how accessible the driller might be. He added it might require some additional expense, as drilling is not cheap, with some drilling investigations on the footprint location for the new dam approaching a quarter of a million dollars. He

added that, if the desired answer is that it would be cheaper, he cannot qualify that without the proper data. Mr. Frederick stated that time would certainly be lost and added that if an investigation proved the concept to be cheaper, there would still be three to four months to do preliminary design for a total of six to eight months of time. Mr. Frederick emphasized that this is not an easy decision for the Board and Council, but delaying it may still not bring the answer they want.

Mr. Boyd asked what the cost would be for the investigation.

Mr. Frederick said that he does not have a precise cost, but if there was more geotechnical work needed to confirm to the expert panel that is a better design here, it could cost about a quarter of a million dollars.

Mr. Boyd said that would be in addition to what the expert panel would have to be paid.

Mr. Frederick said the expert panel does not cost that much.

Ms. Palmer commented that she wanted to get clarification on a more engineered-type question that perhaps someone from Schnabel or Mr. Frederick could answer. She asked about the integrity of the dam if they built onto it, stating that, at one point, they were told there were issues with respect to the quality of the dam if you built something all at once or in stages. She wanted to make sure this would not be an issue.

Mr. Frederick responded that all Rivanna staff has to go on is what's in the summary document that was released by Black & Veatch.

Ms. Palmer asked if there any difference between the dam built all at once or the dam that is added on, structurally, adding that they are equal as far as longevity and maintenance.

Mr. Frederick commented that he is not following the question.

Mr. Brown clarified the question by asking if it is detrimental to have the dam built in phases, if it would mean a lesser quality dam with a shorter life.

Mr. Frederick responded that technology is pretty good today compared to in the past. He stated that particularly with concrete, you can build a section and then raise it a section later. Mr. Frederick stated if you know you are going to build it in sections and you use the right materials to build onto it later, you can build a pretty secure dam. Mr. Frederick said that some people would say it is better with a dam to build it all at one time and while he cannot argue with that, but given today's construction, he cannot say that it diminishes the quality that much.

Ms. Mallek asked how one accomplishes going back and cutting the second pool of trees later when the water is already in the first pool. She added there is going to be a lot of degradation of the water based upon the activity around it with doing that second phase of lumbering because lumbering is a messy deal and it needs to be done very carefully followed by immediate remediation. Ms. Mallek asked how the existing water can be protected if they take a two-phase approach as far as removing the trees. She also asked how existing water could be protected if you are building on the current dam or if it just assumes that the whole thing is being excavated – which is eliminating a huge amount of storage.

Mr. Frederick said that, in reviewing the work Schnabel's done, there is an extensive erosion and sediment control system being placed around the ring of the reservoir, but said any more detail would need to be provided by Chris Webster of Schnabel.

Mr. Webster presented some graphical depictions of an example where Schnabel started the work and was considering a concrete dam. He said the light blue represents the expanded reservoir, pointing out the location of a few trails and some haul areas. He added that the same would apply only to the Ragged Mountain Dam site although it would be more narrow as you work around clearing this area, with the idea being to minimize any impacts outside an expanded reservoir. He said that is how they would envision a phased approach with the reservoir itself.

Ms. Mallek asked if they would all exist on Reservoir Road, even when the work is done on the far side.

Mr. Webster said she was correct and added that right now that is what they considered. He added that part of their staff review was to sit down with several citizen groups and one of the things they got back was a desire to minimize impacts, especially during construction. Mr. Webster said they have had multiple meetings with Camp Holiday Trails, which is just downstream of the dam, and one of the features of an earthen dam is that it works within the confines of a construction site – compared to a new concrete dam that would require about 9,000 aggregate trucks brought up Reservoir Road. He added that one of the advantages with the Schnabel design is how it addresses the community's concerns regarding impacts during construction.

Mr. Snow asked from where the 9,000 trucks would be originating.

Mr. Webster responded that it would be from whatever quarry would provide the rock. He said the contractor would bring in crushed stone to be stockpiled, either on the site or just downhill from the site, with the contractor producing the concrete on-site.

Mr. Snow asked, if the existing dam were built upon, would it still require 9,000 trucks.

Mr. Webster responded he is not the consultant and his firm is not retained to provide that service, adding that it is a concrete structure so some means for concrete or aggregate would need to be brought on the road.

Mr. Rooker asked Mr. Webster, in the course of his work on this, if he formed an opinion about the structural integrity of the existing dam.

Mr. Webster said that they did some work early on when they were asked to submit a proposal, and did some research that is now part of public record. He added that more recently Black & Veatch has provided services and has done test borings of the existing dam that shows the concrete in the areas that they drilled looks to be in pretty good shape.

Mr. Rooker inquired if Mr. Webster had formed an opinion.

Mr. Webster stated he has not formed an opinion and said Schnabel would want to review that information and probably would conduct some additional tests if they were asked for a professional opinion.

Mr. Rooker inquired of Mr. Webster as an engineer, if he were to have the choice of having a new earthen dam or taking this existing dam and adding on to it, if he would have an opinion about the likely structural integrity of the two structures.

Mr. Webster asked Mr. Rooker if he is inquiring about a new full-height earthen dam or a partially constructed one.

Mr. Rooker stated that he was talking about a new full-height dam, the 42-foot dam previously proposed, as compared to taking the existing structure and adding on to it to create a 42-foot dam. He asked Mr. Webster if he had an opinion about which one.

Mr. Gaffney commented that he thought it was an unfair question, but understands why he is asking it, comparing it to his own business of building new homes versus renovating older ones.

Mr. Rooker stated that the only reason he is going there is the difference between the new dam and an added-on dam is being raised as a reason why we should not move forward with the plan, with a new dam costing only 1% more to go from 13 feet to 42 feet.

Mr. Brown commented that he knows it's apples and oranges. He said that Mr. Frederick has pointed out numerous times how preliminary the Black & Veatch study was, how thoughtful at this stage the Schnabel study is, but the difference in the numbers from the *Charlottesville Tomorrow* matrix is \$13.5 million to build by the very preliminary Black & Veatch numbers. He said it is \$13.5 million less than the fully- explored Schnabel number. Mr. Brown stated that does not mean that amount might not change completely, but certainly that is a significant number. He added that if you are asking for an example of a reason, it is not an insignificant reason and might be one that makes reasonable people say, "Boy, if we can save that much money, maybe we should look a little further into it to make sure we can actually save."

Mr. Rooker stated he understood that they cannot build a 13-foot dam with respect to the permitting anyway.

Mr. Norris said that that has never been officially determined, and City Council never got that letter.

Ms. Mallek stated the letter was sent to Council.

Mr. Norris responded that this is an unsigned draft letter.

Ms. Mallek commented that it was delivered to him in the mail.

Mr. Gaffney then noted that the draft was provided previously, but now this is the real letter.

Mr. Norris retracted his statement and apologized.

Mr. Rooker commented that the letter says the 13-foot dam will not satisfy the requirements.

Mr. Norris commented that several local officials have met with DEQ to discuss the entire endeavor, and said it is clear to him that DEQ is looking to our lead to determine what is acceptable. He added it was clear to him, when he met with DEQ, and to those in this room who have met with them, there is no hard and fast rule on a lot of this. Mr. Norris stated that what they are looking for is improved stream flows. He said if it can be argued that this plan improves stream flows, particularly over an extended period, they can commit to the same dam height if needed. Mr. Norris added that all that is being talked about here is phasing in construction of this dam, adding that he is not at all convinced that DEQ is going to prevent them from moving in that direction. Mr. Norris stated that it is all speculation at this point, and the letter says they will need an amendment. He said the letter does not say that DEQ is going to stop us from doing it.

Ms. Mallek stated the letter says it does not meet the requirement.

Mr. Norris reiterated that the letter says they will need an amendment.

Ms. Palmer commented that, even if the permit is changed and amended, it would still have the same basic structure. Ms. Palmer said the permit is based on sum total volume and whatever that total volume is establishes a set point. She added that as soon as you get down to a certain percentage of that total volume, you get to take out more of that river. Ms. Palmer stated that, at that point you get to take out 30% and at the next set point you get to take out 50%. She emphasized that as the pool is reduced that set point will be hit more often – with 50% taken out more frequently unless conservation efforts materialize – which she finds tenuous to rely on. She added that she would like to see a review of the Black & Veatch study by the dam expert panel, noting that the community could probably get the earthen dam for under \$20 million if they begin right now. Ms. Palmer said, if there are too many variables with the Black & Veatch study, the money lost in the process needs to be considered too. She also said they have got to commit to the same level of protection of stream flows that the plan has right now, not just meeting the DEQ in-stream flows, because those are two separate things.

Mr. Boyd proposed that the Board consider accepting all of the conditions that City Council put forth in their proposal with the exception of the dredging portion, which he would want to have as a separate project subject to an RFP and an agreement on cost allocation. He added that he would like to propose to accept all of those other things with an agreement to build the 42-foot dam but not fill it all the way. Mr. Boyd said it should be filled to some agreed-upon amount so the RWSA can move forward on it at their meeting this month.

Mr. Gaffney asked Mr. Boyd if he was making this proposal subject to a cost allocation agreement.

Mr. Boyd said, "Absolutely."

Mr. Martin said he has reservations about not filling it up to the full height and continues to have concerns about whether it would meet stream flows. He said he is also concerned about the decision-making process to raise it from 30 feet up to the full height, as he does not want to go through a battle again. Mr. Martin stated he has not seen a single thing wrong with the 2006 water supply plan, and it is "the best, most sustainable plan that any community can put together." He added that he doesn't understand why they would be rejecting it now.

Mr. Rooker stated that the adequate flow to the Moormans is actually one of the points that the bodies have all agreed on, and whatever pool ultimately is established would have to meet that requirement. He added he would personally be comfortable with that.

Ms. Palmer said they would have to define the level for the permit and she wants to make sure they are getting the same level of protection in the interim period for the Moormans River and the SFRR just as there is under this plan.

Mr. Rooker said what he is offering is a way to move forward.

Mr. Gaffney stated that he understood Mr. Frederick to say when they ran some preliminary numbers it came to about 30 feet, which would provide adequate in-stream flows for the rivers involved.

Mr. Snow commented he would hate to leave this meeting without some type of resolution that would allow them to move forward with something concrete.

Mr. Brown stated that what's new to him today is the DEQ information regarding their opinion on raising the dam 13 feet. He added he would be willing to consider an initial raise that is higher for that reason because he feels they've committed in here to keep the stream flows. Mr. Brown said the sense of City Council was to phase this, and he thinks they really need to keep that sense. He stated that this is really a different conversation than what City Council had last night and said he would want to explore more fully the implications of 30 feet, which is what Mr. Huja suggested last night. He stated it is new information to him that what they voted for last night apparently does not meet stream flow requirement. Mr. Brown said he would be willing to consider the least height raise that would satisfy stream flows but would allow phasing. He noted that he thinks the phasing is essential, as Ms. Szakos pointed out, to really give the community an incentive to conserve.

Mr. David Thomas asked what the incentive is for citizens to conserve if they are aware the dam height will be raised instead of just the pool height if conservation levels are not met, adding that he does not have a problem with the idea of incentivizing conservation through other mechanisms. Mr. Thomas stated it seems similar to the situation where it's said that if more roads are built, more people will drive them, but that is not actually how it works. Mr. Thomas stated that Mr. Boyd's suggestion is appealing to him because the costs seem to indicate that it may be in fact cheaper to build it higher than lower, and it seems that 30 feet may be the minimum height that DEQ will permit to protect the necessary stream flows. He added that they are talking about a 12-foot difference, building to 30 feet and then to 42 feet. Mr. Thomas said if the ACSA and the Board are willing to consider the addition of dredging, which seems to be something that City Council is particularly interested in, then it seems there is a possibility for an agreement to be reached that does not require either side to completely give up some of their goals for this.

Mr. Norris stated that he thinks they need to go to DEQ and hear it "from the horse's mouth," adding that all the information they have is in a letter, which he hadn't seen until now.

Mr. Gaffney commented that this needs to be brought to a close and did not feel a meeting with DEQ was necessary.

Mr. Norris stated that he feels they must, since everyone is speculating about what DEQ will do.

Ms. Palmer commented that it is pretty clear to everybody that if they proceed with the earthen dam it should be built to 30 feet. She asked if it would be helpful to get more information about the Black & Veatch study from the dam experts, adding that it shouldn't take too long.

Mr. Gaffney commented that it seems what's being proposed at this point is a 30-foot pool and the decision is whether to build the full height or not at this point. He said the lingering question on the table is whether it makes sense to build on the existing dam or not.

Mr. Rooker stated they are not going to be able to answer that question.

Mr. Gaffney commented that, if they could agree on a 30-foot pool now, that gets us to a point where we can move forward. He said there is a time and a cost of doing the investigation of whether it makes sense for Black & Veatch to proceed, and it makes sense to invest that into the dam experts identifying what the next step is to determine the viability. Mr. Gaffney stated he would rather build it to 30 feet and move forward than say they will build to 42 feet and get stuck and not move forward.

Mr. Norris encouraged him to keep in mind that, if it's built past 13 feet, there would be millions of dollars for the I-64 embankment for additional mitigation, adding that costs go up once you pass a certain point.

Mr. Gaffney commented that work has already been included in the water supply plan.

Mr. Norris stated that work was not included in the chart that Mr. Frederick provided.

Mr. Rooker noted that it was included in *Charlottesville Tomorrow's* information.

Mr. Norris inquired and received confirmation that the chart Mr. Frederick distributed today is only for dam construction.

Mr. Norris stated that he felt Ms. Palmer's suggestion was a good one, if that is a way to move forward.

Mr. Snow commented that he would like something written out on which they could all agree.

Mr. Gaffney stated that it seems they all agree with item number two, item number four and item number five, so what they are left with is the issue of whether 30 feet is a reasonable height. He proposed that they just go to the 30 feet.

Mr. Martin inquired if Mr. Gaffney was saying not fill it to 30 feet.

Mr. Gaffney clarified that he meant to build it to 42 feet and fill it to 30 feet.

Mr. Snow commented that if both scenarios work out that the cost is only another 1% or 2% to build to full height, then it would be ridiculous to come back a few years later and spend another several million dollars to bring it to what it could have been now for 1% more.

Mr. Gaffney emphasized that what is needed here is something on which the City will agree in order to move forward.

Mr. Boyd stated that the County would be more than happy to pick up the difference between 30 feet and 42 feet, adding that it would not cost the City a dime. He said if they are willing to do the 30 feet and the County is willing to pick up the difference for the remaining height at no cost to the City, he doesn't see what the problem is. Mr. Boyd stated that it is not about just making the City happy and then the County having to decide what they do for water supply. He said the County is the most impacted by what is being done here. He said the County is willing to step up to the plate and pay better than their fair share for doing that, it really is just "sticking in his craw" that they have to do it in a way that City Council wants them to. Mr. Boyd added his apologies, but said the County has gotten burned before on these things.

Mr. Brown asked Mr. Boyd to define how the County was paying more than their fair share.

After some further exchanges, Mr. Gaffney asked them not to let the meeting deteriorate.

Mr. Martin requested not to rush into a decision either.

Mr. David Thomas commented that he wondered if they could come to an agreement about proceeding with one plan with a trigger built in which, in the event the review of the Black & Veatch study or testing by that firm proves that the costs were not substantially lower, they could proceed with the existing plan. He said if Black & Veatch determines after doing all the follow-up testing that they can add 42 feet to the existing height at one-fourth of the cost, then he would probably not be opposed to just

building on the existing dam if the dam life is the same. He said that the problem is they possibly delayed the process because they wanted to redo the demand analysis, and it came back essentially the same within the margin of error on the projected demand, despite all the talk about conservation and such. Mr. Thomas said it then turns out that the first estimate was pretty good and took into account the conservation that was happening. He added that, with that lesson in mind, they could pursue the plan as amended with a trigger built into it that if Black & Veatch comes back at some percentage – 60%, 70%, 80%, whatever is determined – they will instead pursue expanding on the existing dam.

Ms. Palmer commented that one of the problems with that suggestion is, if they just ask the dam experts, they may not get all those answers, however, it would give them time to think through some of the other issues.

Mr. Thomas stated that he was talking about a more long-term agreement that allows them to pursue construction of a dam, whether it is a new one or an existing one. He said that the idea would be for the new dam to be the default plan because they know the numbers on it, with a trigger built in that if the expansion of the existing dam is cheaper and just as safe and long-lasting, then they would come back with those numbers and scrap the new dam because of significant cost savings long-term by building on the existing dam.

Mr. Norris commented that he was in agreement with Mr. Thomas suggestion to proceed with the final design on the new dam and allowing for an option to be phased in – which has already been looked at by Schnabel.

Mr. Thomas responded that his point is whether they build it for 30 or build it for 42, there is no reason to fight about that if the Black & Veatch dam would be cheaper.

Mr. Norris stated he would totally agree with that as long as there is a provision for phasing , adding that the second piece of this is, before jumping to 30 feet, they sit down with DEQ with all the information they have now.

Mr. Brown asked who he would propose to do that.

Mr. Norris said the four boards can send a delegation to DEQ or invite them to come here and present all the information after all the studies that have been done – which they did not have when they did their initial report. He proposed letting DEQ tell us if 30 feet is the trigger or 13 feet is acceptable.

Ms. Szakos asked if it would be possible that instead of saying 13 or 30 to say the minimum allowed by DEQ regulations.

Mr. Rooker commented that the existing plan is not based upon meeting minimum DEQ standards.

Mr. Gaffney stated that they need to take it to a level that is 20 to 25 years out, otherwise, it is not substantial enough for DEQ to look at.

Mr. Norris commented that he wanted DEQ to provide that direction.

Ms. Szakos asked if it would be good to say, “the minimum level that would achieve this outcome,” whatever that outcome is.

Ms. Mallek noted that the Moormans is dry today and the Mechums is a trickle. She added that the longer that they hit all these other stages where they are allowed by some grandfather clause that everyone would like to have repealed, that allows a monstrous amount of water to come out of Sugar Hollow. Ms. Mallek added that it has really been completely debilitating to that part of the County and to the farmers who have given up watering their stock out of that river or even pumping out of it occasionally for their cows and irrigation for their crops. Ms. Mallek said it is not just saving water by not running your water while you're brushing your teeth, it is really substantial if they are talking about completely changing the way we use water. She stated they are going to also have to face the fact that they will have to tell businesses they can no longer operate here, as there were businesses that had to be shut down when this happened before. She added that she lives in the country and sees that five of her six streams are dry, and the area is quickly going to be at that stage again. Ms. Mallek said she is thrilled with the amount of progress they have made today, and she really hopes they do not try to shortcut to the minimum, just enough to scrape by, because they will be doing a huge disservice to County rivers – most of which are rivers they are trying to protect in order to preserve the reservoir and the watershed. She said that if they have an insecure water situation in the growth area, the worst possible consequence of that is that people will be frustrated and they will then go out into the County and drop a well out there. Ms. Mallek stated that is a risky proposition because wells are very fragile, but it will also completely countermand the growth area where they are trying to provide services to people and protect the watershed, which is primarily for the City.

Ms. Szakos stated that her suggestion was not to reduce it, but to help move this forward so they could agree to a principle based on amount, not wait and come back three months from now and have to do this again.

Ms. Mallek responded that if they are going for a high standard she doesn't think that is a great idea.

Mr. Huja commented that he felt the meeting with DEQ should be held in order to find out the answers to the issues being discussed today.

Mr. Rooker stated that he did not mind taking two weeks to set up a meeting with DEQ. He said he has sat through several meetings with DEQ, the Corps, and the other agencies involved, and he thinks it is very unlikely that they are going to say that 30 feet is the number or 29 feet is the number or 23 feet is the number. Mr. Rooker added that the plan that was approved in 2006, which was four years in the making and is now four years old, has had no steps taken for implementation. He stated that the plan was based upon numbers that have now been verified three times as to the demand of the community over the next 50 years, and those numbers yielded 42 feet for the dam. Mr. Rooker added that the only difference now is they have approved some dredging, which may acquire 3% of additional capacity, suggesting that if the dam is shaped like a cone it will provide a whole lot more additional capacity being at the top than the bottom. Mr. Rooker said it seems extremely optimistic that a 13-foot dam without any additional capacity anywhere else in the system is somehow going to satisfy the demand that we determined requires a 42-foot dam.

Mr. Norris stated that is DEQ's own projection.

Mr. Gaffney asked Mr. Frederick what raising the dam 13 feet, 30 feet, and 42 feet adds percentage wise, stating that they know 42 feet is 100%.

Mr. Frederick asked if Mr. Gaffney was referring to storage.

Mr. Gaffney responded that he was.

Mr. Frederick stated that 13 feet is 20% and 30 feet is 61%.

Mr. Boyd suggested that no matter how they get to this other information, they need to move forward with deciding on what that cost allocation is going to be. He stated it is his understanding that the City does not want to negotiate that until such time as they know what they are going to do – and whether it's \$20 million or \$5 million, the percentages are the same.

Mr. Brown stated he has not heard the City say that and he has been part of that discussion, so , whoever told Mr. Boyd that should come to him so he can understand where that came from.

Mr. Boyd asked if Mr. Brown was now saying that he would get his staff to negotiate with the ACSA on that.

Mr. Brown said he has been wondering why they don't have an idea on how they are going to pay for this.

Mr. Boyd commented that he asked Ms. Mueller the question in a Rivanna meeting recently, and she said that she was waiting on the approval of a plan. He added it is not going to impact the allocation percentages, so it should be dealt with.

Ms. Palmer thanked Ms. Mallek and Mr. Rooker for saying this is not designed just for minimum standards. She added that what DEQ will provide is a ruling on the minimum amount necessary, which is not the way this was designed. She said it is a different way of doing the water supply plan. She added they want to make sure that whatever volume we get with a 30-year or a 25-year plan yields the same amount of stream protection as what they fought hard to get to the 2006 figures.

Mr. Huja stated that what Ms. Palmer was saying was that she wanted to protect the streams and Ms. Palmer agreed with his statement.

Mr. Brown added that he felt that part of the discussion that was missing last night was an informed discussion on streams and how important they are to the watershed. He added that it's important, combined with looking at the letter from DEQ, but he does think it is important to stick with what they've been wanting to do because it has the support of a lot of people in the environmental community because it is a progressive approach to protecting our streams. He said that, even though he supported 13 feet, he feels like that might not be consistent with a commitment to adequate flow in the Moormans River or the Rivanna River; so, with that in mind, he is very comfortable with considering 30 feet. He stated that he does not want to consider more than that right now, but he is interested in finding out what height is needed to meet requirements and supply needs.

Mr. Norris asked if the four boards could agree to meet with DEQ for them to provide guidance so everyone is clear on what they are willing to allow.

Mr. Gaffney commented that it was pretty clear from what Ms. Palmer and others have said that DEQ is not going to give a number that meets all of the community goals.

Mr. Norris stated that Mr. Gaffney said earlier 30 feet is the only acceptable height.

Mr. Gaffney denied stating that.

Mr. Norris clarified that he was referencing a comment made by Mr. Frederick.

Mr. Gaffney stated that Mr. Frederick did not say that 30 feet is the only acceptable height, but what he said was, from what they could put together, that is what made sense for a 20 to 25-year outlook because it does not make sense to build it at less than that. Mr. Gaffney emphasized that the DEQ is not going to say "do this for 5 years or 10 years, and then you are going to come back and do it for another 5 and 10 years."

In response to a question by Mr. Huja about the projections, Mr. Gaffney said that he did not have the projections and that DEQ would not provide that information. Mr. Gaffney added the reason that he asked Mr. Frederick the percentages is because he wanted to show that, at 30 feet, there is 60% of the total which leaves a lot of leeway if there is conservation and dredging – so they may not have to go above 30 feet. He said they will have saved 40% of that capacity, which is why he thinks it makes sense to go forward with 30 feet at this point – and that decision does allow them to move forward.

Ms. Palmer commented that 30 feet was what it would take to match the protection they have in the present plan – not necessarily to meet DEQ's stipulations. She added that, hopefully, it would because they are matching what's in the current plan.

Mr. Norris asked if it was conceivable that they could improve stream flow with less than 30 feet.

Ms. Palmer said that she did not know, but added that they would need for DEQ to say how it would be improved and indicate they are willing to take less from an environmental standpoint to protect the streams.

Mr. Norris responded it would come at the benefit of preserving tens of thousands of trees in a couple hundred acres.

Ms. Palmer commented that it was 158 acres at this point, which will be replanted.

Mr. Norris commented that somebody needs to factor that into the equation, adding that there is a tradeoff between protecting the aquatic ecology and how far aquatic ecology is enhanced at the expense of decimating forest ecology. He emphasized that the question is, can they improve stream flows at a lesser cost to the forest ecology. Mr. Norris asked, at what point does that tradeoff pass muster with the DEQ and with the community.

Ms. Mallek stated that the effects on water quality from the frequent dredging must be considered because if they are looking at all these different environmental angles, then certainly constant disturbance is something that DEQ and the Army Corps would be concerned about – whether it is the construction in multiple phases and/or repeated disturbance.

Mr. Gaffney stated he thinks where they were in the discussion is the first phase being the construction of a 13-foot raise, but stated they were talking about a 30-foot. He said he heard from Ms. Szakos and Mr. Norris that made some sense to them, and asked Mr. Norris if he is still looking for 13 feet.

Mr. Norris replied that was based on a guess about what DEQ would look at, and reiterated that he just wants to hear that from DEQ.

Mr. Rooker commented that the standard, again, is not the minimum that DEQ looks at.

Mr. Norris asked what the standard is.

Mr. Rooker stated that is not only a DEQ issue but also modeling that is done by the engineers.

Mr. Brown commented he thought, as long as there is a representative group meeting with DEQ, they could expect a full report on exactly what DEQ says.

Mr. Gaffney said they could get a basic DEQ response, but they also need to factor in what the community wants. He asked what they would do with that basic information from DEQ once they get it, and if they are going to aim for higher standards.

Mr. Brown commented that he would be content if they came back with DEQ telling them only what is necessary to achieve the minimum requirement, as they have the option for increasing it. He added that in that case, it seems they would be looking at 30 feet, which is a good guess as to what maintains the supply. Mr. Brown stated that on the other hand, DEQ may come back with a more specific answer, in which case they would now have new information from which to proceed.

Mr. Norris stated that 13 feet plus restorative dredging is about 40 years of water supply, adding that no one is talking about doing anything to starve Albemarle County of water.

Mr. Boyd stated he is not agreeing to the 30 feet, clarifying that he would support a 30-foot pool but not a 30-foot dam. He emphasized that he does not think this is the right move, as it is penny wise and a pound foolish, and no one has yet convinced him it makes sense to take that approach.

Mr. Gaffney asked Mr. Norris if they could leave here with everybody's approval of a 30-foot pool of a 42-foot dam, if he would support it.

Mr. Norris responded that he would not support that.

Mr. Colbaugh asked if they could try and summarize what they are going to ask Mr. Frederick to do. He asked if it meant setting up a meeting with DEQ to talk about what was needed for a 20-year plan, a 25-year plan as an interim. Mr. Colbaugh stated there is already a 50-year plan, so they need something that is operable that establishes an answer to the question of 13 feet or 30 feet.

Mr. Rooker commented that this is somewhat dictated by DEQ minimum standards, and if they were to move forward with a 20-year as opposed to the 50-year plan, they are redoing 2006 and 2008. He said he hoped not because it could take 20 years to implement the plan they started talking about in 2002.

Mr. Colbaugh stated that Mr. Frederick needs to set up a meeting with DEQ so they have the ability to answer the question about whether 13 is even reasonable, adding he could find some representatives to go with him. He said he thinks he should come back to the Rivanna Board with a proposal on their agenda for design of an earth filled dam to 30 feet and 42 feet, and said it should be easy enough to design for 42 feet and figure out how you are going to make it 30 feet. Mr. Colbaugh said that could happen reasonably soon, adding that the dam experts should be reconvened to look at Black & Veatch's study and to have them look at what Schnabel thinks. He said if there is a reason to move forward with some of that and Mr. Frederick would save \$9 million or whatever that number is, they can certainly proceed but they need the expert panel opinion first. Mr. Colbaugh stated that Mr. Frederick ought to do an RFP for dredging of Part I separate from the permit, and it would be wise to get going on a cost-sharing agreement between the City and the County.

Mr. Huja commented that he thought Mr. Colbaugh did a good job in summarizing the questions.

Mr. Colbaugh added that is what is needed.

Mr. Gaffney stated that it sounds like they need to reconvene after the information is obtained.

Mr. Norris commented he agrees with the spirit of everything said, but he isn't sure why the heights on the new earthen dam would be limited only to 30 and 42. Mr. Norris asked why it couldn't be said to phase it in with options, adding that they do not want to pre-judge whether or not 13 feet is going to be acceptable.

Mr. Colbaugh stated that what they really ought to do is get the proposal for designing to 42 feet and then they will have an idea as to where things stand in the process, adding that shaving it down is the easy part. Mr. Colbaugh stated they are not going to get there until the dam is designed for 42 feet and then work backward as needed.

Mr. Norris commented that they were deliberate in saying at least Segments 1-3 in dredging the reservoir, so that specificity should be reflected in the dam suggestion as well. Mr. Norris said it does not serve any good to limit it only to segments 1 -3 if the dredging community can show that we might actually be able to dredge other segments cost effectively and produce more water.

Ms. Mallek stated that it should be considered for its impacts to the community.

Mr. David Thomas stated he thought the reason they were limiting it to Phase I is because that was the best opinion of the most likely break-even point due to the location of the most useable sand based on the report we were provided. He said that it was determined that segments 4, 5, 6, 7, 8, and 9 were not impossible but less likely, at least from the standpoint of cost-effectiveness, adding that there is essentially no chance that parts 2 and 3 would be that way – but they could always RFP parts 2 and 3 with some hope that they might also be cost effective.

Mr. Gaffney clarified that this referred to Item number 2 in this whole agreement, and they have not agreed to adopt restorative hydraulic dredging on Segments 1-3. Mr. Gaffney said what they did was accepted the language in here as they reviewed it. He added that if this room has not accepted this in its original state or a modified state, then he does not know if they can go forward with doing anything on the dredging part at this time.

Mr. Rooker commented that he thought there should be some reasonable definition of what is being put out in an RFP, adding that you cannot put out an open-ended RFP that instructs contractors to come back and offer up what they will do in terms of dredging one or all parts of the reservoir.

Mr. Colbaugh stated that is in the spirit of phasing – phasing the dredging study to get an idea of what it would take in the beginning and then proceeding (or not) once that is known.

Mr. Brown agreed, adding that he thinks if there is a good RFP for Segments 1 -3, then it encourages them to look further.

Mr. Norris agreed as long as they are not precluding that option.

Ms. Mallek commented that she understood Mr. Gaffney as saying that it should not happen until we get agreement from all four boards.

Mr. Gaffney responded affirmatively.

Ms. Mallek clarified that the other tasks are getting information so they can agree on all the other ones.

Mr. Norris said he did not hear any opposition to doing an RFP, as long it is a separate permit process.

Mr. Rooker commented that he does not mind doing an RFP, adding he would like to have an agreement on what they are doing here by way of the plan before they start peeling off parts of it. He said that one person may like it whereas others may not, so they should go ahead with this while they are still debating the rest of the plan.

Mr. Colbaugh commented that it is going to take a while to get answers, and what he is trying to do is get enough of a platform established to get the answers in four to six months.

Mr. Rooker stated that he felt everyone also agreed they were going to remain neutral while doing this.

Mr. Snow commented if they are going to make the dam the biggest priority, then they need to do the important things first.

Mr. Norris stated that Mr. Rooker had made an excellent point earlier, which is that none of the dredging companies have offered to do this for free – so the boards should not assume it is going to generate revenue.

Mr. Gaffney asked if what was coming out of this meeting is Mr. Colbaugh's basic outline.

Mr. Boyd commented that he would like to see that summary published.

Mr. Frederick indicated that he wrote as Mr. Colbaugh talked.

Mr. Gaffney asked Mr. Frederick to summarize the list and send it to everyone. Mr. Gaffney also requested that Mr. Frederick review the summary with the four boards as well.

Mr. Frederick read it first to make sure that he was clear as to what was discussed.

Mr. Frederick said that the protocol agreed upon was to set up a meeting with DEQ to get their advice or consent or whatever they will give us on the initial full height raise; put on the Rivanna agenda to initiate final design of the earth-filled dam; convene the dam experts to review the Black & Veatch report and, consistent with that since Black & Veatch is under contract with the City, if there needs to be some discussion between the expert panel and Black & Veatch and if they will need to be compensated for that, can the City approve that (editor's Note: Mr. Maurice Jones nodded affirmatively but did not speak.); work on a cost-share agreement. Mr. Frederick stated he is going to prepare an RFP for dredging Part 1 that may include an opportunity for proposers to move forward on Segments 4 and 5.

Ms. Palmer asked if the RFP is being prepared now, adding that she thought there was some question about it.

Ms. Mallek added that they might gain some useful information and it might address the other parts of the plan.

Mr. Colbaugh commented that it is not going to happen quickly.

Mr. Boyd asked if what is being proposed is to have this ready to come back to the Rivanna Board meeting next week, and asked if it had to be approved by that board.

Mr. Gaffney said that it would need to be approved before RWSA takes action on these items.

Mr. Frederick stated they will start on it before the next meeting.

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Agenda Item No. 9. Adjournment by Chair of Each Board.

Mr. Gaffney adjourned the RWSA BOD at 5:44 p.m.

Mr. Roberts adjourned the ACSA BOD at 5:45 p.m.

Mr. Norris adjourned the CCC at 5:45 p.m.

Ms. Mallek adjourned the AC BOS at 5:45 p.m.

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Chairman

Approved by Board
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Date: 11/2/2011
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Initials: EWY
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