

MINUTES OF SPECIAL JOINT MEETING

**Albemarle County Board of Supervisors
Albemarle County Services Authority Board of Directors
Charlottesville City Council
Rivanna Water & Sewer Authority Board of Directors**

September 21, 2010

A special joint meeting of the Albemarle County Board of Supervisors (AC BOS), the Albemarle County Service Authority Board of Directors (ACSA BOD), the Charlottesville City Council (CCC), and the Rivanna Water & Sewer Authority Board of Directors (RWSA BOD) was held 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.

AC BOS PRESENT: Mr. Kenneth C. Boyd, Mr. Lindsay G. Dorrier, Jr., Ms. Ann H. Mallek – Chair, Mr. Dennis S. Rooker, Mr. Duane E. Snow - Vice-Chair, and Mr. Rodney Thomas.

ACSA BOD PRESENT: Mr. Richard E. Carter, Mr. Jim Colbaugh, Mr. John Martin – Vice-Chairman, Dr. Lizbeth Palmer, Mr. Clarence Roberts – Chairman, and Mr. David W. Thomas.

CCC PRESENT: Dr. David Brown, Ms. Holly Edwards – Vice-Mayor, Mr. Satyendra Huja, Mayor Dave Norris, and Ms. Kristin Szakos.

RWSA BOD PRESENT: Mr. Kenneth Boyd, Mr. Michael Gaffney – Chair, Mr. Maurice Jones – Vice-Chair, Ms. Judith Mueller, Mr. David Norris, Mr. Gary O’Connell, and Mr. Robert Tucker.

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

Call to Order

The special meeting of the RWSA BOD was called to order by Chair Michael Gaffney on Tuesday, September 21, 2010 at 3:07 p.m., and he noted that a quorum was present.

The special meeting of the AC BOS was called to order by Chair Ann Mallek on Tuesday, September 21, 2010 at 3:08 p.m., and she noted that a quorum was present.

The special meeting of the CCC was called to order by Mayor Dave Norris on Tuesday, September 21, 2010 at 3:09 p.m., and he noted that a quorum was present.

The special meeting of the ACSA BOD was called to order by Chairman Clarence Roberts on Tuesday, September 21, 2010 at 3:10 p.m., and he noted that a quorum was present.

Mr. Michael Gaffney next 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. Mr. Gaffney began the process by stating that he felt

“we are very close to having an agreement between all parties, and I think by the end of the day we will go forward and take care of water needs for the County and the City for the next 50 years... I hope that is everyone else’s’ goal here today.”

Mr. Gaffney further suggested that after the opening statements from each Board, Mayor Norris go over the Resolution that was approved by City Council at its September 20, 2010 meeting. RWSA Executive Director Mr. Tom 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. Ann Mallek, AC BOS Chair, to present the opening statement on behalf of her Board.

Supervisor Mallek stated that the AC BOS was present today “to listen and very much want to know specifically where the issues are and then we’ll be able to respond ...I’m very glad to be here.”

Mr. Clarence Roberts, ACSA BOD Chairman, next stated that his Board was present today “to listen as well and make sure that we can obtain all the information possible in order for a good decision by the ACSA BOD.”

City of Charlottesville Mayor Dave Norris next thanked everyone for their attendance at today’s meeting. He then stated that CCC had a “very extensive public hearing last night and a very extensive [City] Council discussion last night, which resulted in this Resolution.” He further commented that CCC didn’t “necessarily see our role today as going back in and redrafting this Resolution and re-voting on this Resolution. However, we do see our purpose here today ... explaining the different components of this Resolution and hopefully getting the support of the region as we move forward in implementing some of these changes.” He then noted the sentence in the fifth paragraph of the Resolution, which states that the CCC had “re-adopted and re-affirmed its June 2, 2008 approval of the local water supply plan.” CCC was “not talking about starting over; we’re not talking about throwing the plan out the window. What we’re talking about is ... the plan itself does not call for all components of the plan to be constructed at once. It specifically talks about ways in which we can phase in the plan and essentially that’s what CCC is looking to do ... we are committed to building however much capacity this region needs to meet our long-term water supply goals – that’s fundamental – I don’t want anybody here 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. We’re very committed to meeting the water needs of this region ...if it turns out that we need the full capacity at the Ragged Mountain Reservoir, at the end of the day through this resolution, we would actually end up with more water supply than the original plan envisions because we’re adding in the element of dredging the South Fork Rivanna Reservoir (SFRR), which increases the supply even further ...we feel, at least certainly right now, we don’t need the full capacity at the Ragged Mountain Reservoir. We are 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.”

Mayor 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."

Mr. Gaffney next recognized Mr. Frederick who would note the items in the Resolution that were in agreement and also the ones that differed with 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 next stated that there were 10 bulleted items in the Resolution just read by Mayor Norris. Mr. Frederick believed that there was agreement with 7 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 7 items identified as being in agreement with 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 9 segments. Segments 1 - 3 were called “Part 1 dredging”, and Segments 4 - 9 were called “Part 2 dredging.” Mr. Frederick understood that Segments 1 - 3 is the same grouping as identified in “Part 1,” which is “dredging with mechanical dewatering and sand recovery.” 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.” Mr. Frederick assumed that referred to “maintenance of wherever is encompassed in the initial dredging.”

Commenting further on the dredging item, Mr. Frederick noted that “this is extensively about what the local community needs to do, but in order to be successful – whatever we decide in this room – we have to obtain permission from DEQ [Virginia Department of Environmental Quality] and the Corps of Engineers ... we have to be successful with that.” He further stated that the “permits are about permission to impact the waters of the United States – the agencies call it ‘environmental impacts’ – they’re referring to impacts in the waters or the streams of the U.S. ... the permit that was approved was permission by the agencies to build a dam and build a pipeline. While our 50-year plan has talked about a variety of other things – and some of that is in our permit support documents ... in the mind of the permit agencies – what they gave us permission to do – was to disturb the waters of the United States sufficient to build a dam and pipeline between the two reservoirs. The permit does not say we have permission to dredge ... we can apply for a separate permit to dredge the reservoir, and there’s a reasonably good chance that we could be successful. With respect to modifying the existing permit – if we want to stay within the framework of a permit, we need to stay within the framework of a dam and pipeline and not try to throw extra things in there ...in the advice I’ve been given – that makes the regulatory process more complicated.”

Supervisor Rooker then 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 felt the way the Resolution was written implied that a separate permit could be obtained for dredging without impacting the permit for the approved plan. Mr. Frederick responded that “Obviously, I’m not an attorney ... as long as you follow the appropriate procedure in going after a permit – I don’t know if having it in a Resolution is that big of an issue.” Supervisor Rooker next questioned about whether “pursuing” the dredging option as written in the Resolution would “require an amendment of the existing permit.” Mr. Frederick replied that “if we seek to do dredging outside of the approved permit with a separate application for a separate permit, then I don’t think dredging affects modifying the existing permit. It’s a procedural matter – how do you pursue the federal and state approvals to accomplish what you want to do.” Supervisor Rooker further stated that he heard Mr. Frederick comment last night that “if the existing permit is amended, it would probably take 9 to 12 months to get that done ... I think we all want to be careful about amendments to the plan that requires us to go back through some kind of lengthy regulatory approval for the plan we already have permitted.”

Dr. Liz Palmer, ACSA BOD Member, next commented that Mr. Frederick “had already told us that dredging Segments 1 - 3 gives us 3% of the total volume that we need ...when you’re saying that you keep it separate, does that mean that you can’t count that 3% of the volume in your Virginia Waters Protection Permit? Is that what you’re saying? ... How separate is it?” Mr. Frederick stated that he would “prefer not to answer that question until I’ve talked to counsel to get their thoughts on that.”

Mr. Gaffney next commented that he thought “it was pretty well written that [City] Council wanted that to be able to be permitted separately and not to wrap it in, and I think it was very well done on your part.”

Supervisor Mallek then inquired 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 that it could take as long as two years from the time the design work was started until the permit was obtained. He hoped that it would entail a shorter time frame, but felt the community should be prepared for the length of time suggested by HDR.

Mr. Kenneth Boyd, AC BOS Member, next commented that he assumed that 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 felt the formula that would be applied for maintenance reasons would be similar to the one being applied to the operating costs. Mayor Norris replied that it was CCC’s intent that dredging would be to obtain additional water supply. Supervisor Boyd next commented that “we’re going to pick up the biggest part of this dredging because you all want to do this, but it’s not necessary to provide the supply. I think it’s got to be an operating [issue]...” Mr. Gaffney then stated that he felt “one of the keys is going to be when we take the dam to its full height or some height below that, and the height below that is going to be determined by what our demand is going to be at that point and what our storage capacity is at that point ... we’ll probably be looking at everything, and we’re talking 25, 30 years from now if we do the dam in stages ... to say in 30 years we’ve got to go to 42 feet if 38 feet would do ... I don’t think it’s something that we have to put in here and absolutely mandate.” Supervisor Boyd next commented that he was not saying “we need to do that, but what I’m saying is that this particular issue seems to be more of a maintenance issue – a maintenance for our existing water supply than to add to the capacity. I don’t view it that way because the capacity is going to be added with the additional dam – whether it’s 30 feet, 13 feet, 42 feet – that’s the plan there ...to increase that water supply ... I wouldn’t be willing to support that the County would pay the

biggest bulk of this particular operation because I think it's maintenance. It's not additional supply where we're going to divide it in a formula with the County resources." Mayor Norris then stated that he thought Supervisor Boyd "was jumping ahead to the cost allocation ...". Supervisor Boyd replied, "That's exactly what I'm talking about." Mayor Norris next commented that "I'm not sure that's what we're here to do today." Mr. Gaffney then stated that he felt "one of the things we wanted to do was go through where we differ first and then come back and discuss each point." Mr. Rodney Thomas, AC BOS Member, next asked Mayor Norris if he understood correctly that the City was also "dredging to keep the flow of the river going ...that was the goal of it also." Mayor Norris replied that Mr. Thomas's statements were correct. Dr. Palmer then commented that the SFRR was a "7-1/2 mile long run-of-the river reservoir that drains 260 square miles, so the hydrology is such that you don't need to dredge to keep the river open ...if that's a goal, then I think we need to clarify that ..."

Mr. Gaffney next asked Mr. Frederick if there were any other issues to discuss concerning Item 2, and Mr. Frederick responded that there two other points that he felt needed to be addressed concerning dredging. He stated that in the Resolution "it sounds like ... this is going to be a separate permitting process," and the other Board and Council Members expressed agreement with that statement. Mr. Frederick then commented that from his "conversations with folks within Albemarle County, there may be some interest in an RFP." He felt a decision needed to be made about who makes the decision after an RFP has been issued on whether or not to dredge based on the proposals received. He also felt that "maintenance" dredging has been clarified as being the second step after the SFRR has been previously dredged."

Mr. John Martin, ACSA BOD Vice-Chairman, then commented as a point of clarification that the issue about whom was going to pay for dredging needed to be discussed and resolved before a decision is made to seek a permit or to do anything ..." Mr. Gaffney replied that it was "further down ...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. The other question concerned the decision-making process for the extent of the dredging operation. The Resolution states that "restorative hydraulic dredging of at least Segments 1 - 3," which he felt "leaves the door open." Mr. Frederick then stated the third issued dealt with "who pays what?"

As an additional point to his question, Mr. Martin stated that "if the City wants to dredge and if the City says [that] it's going to pay for dredging alone, I would have no objection to dredging. If the ACSA is going to have to share in dredging, I've got to know that. I think we've got to know that right upfront before this gets too far down the road, because we've got a lot of other expenses to meet in terms of dam construction, repair, maintenance, and a huge burden is being placed on County ratepayers now and out into the future ... we need to know all of this upfront before we get too far." Mr. Gaffney then commented that "just so that we don't go down this road when we're really just going over these questions -HDR had recommended and Rivanna had discussed and probably would like to proceed on actually doing an RFP for dredging Segments 1 - 3, because that's where the sand is and that's where we think that ... the cost could break even ... I haven't any problem with this ... let's move on to [Item] 4, if [Mr. Frederick] was done with this, and we'll come back to [Item] 2."

Mr. Frederick then discussed **Item 4 – "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.” He commented that he hoped that “... I just want to point out – I put that on the list we haven’t agreed with because I haven’t heard the County agree to that particular provision.” Supervisor Rooker then commented that “I don’t think anybody imagines digging it up ... so it makes sense to leave it there.” Supervisor Mallek next inquired: “But you’re talking about the current pipeline ... not a new one.” Mayor Norris replied affirmatively. Mr. Frederick next commented he felt that “more than the issue [to] keep in place – the last phrase – ‘for use in the event of a failure in the water transmission system’ – is the issue we need to discuss.” Supervisor Rooker then stated that “having listened to [CCC’s] deliberations last night – it seemed to me that what they were saying made sense – in the sense that you’ve got a pipeline there. If you had an emergency in the future and you somehow needed to feed Ragged Mountain from someplace else, you’d have – albeit perhaps a leaky way of doing it – but a way of getting water there. Certainly it makes sense to keep that in place. Mr. Satyendra Huja, CCC member, then commented, “That’s exactly the thought [CCC] had.” Dr. Palmer next stated that she agreed with Supervisor Rooker’s comment about not “digging up” the pipeline. “...At the same time, I just want to point out that the water supply plan had envisioned using Sugar Hollow Reservoir, and when we needed it, to let the water out and pick it up at South Fork, so we have a natural conduit to get the water to a treatment plant ...we have studied that to see if there was evapotranspiration and what kind of losses we would incur, and they were pretty minimal ... that was part of the original plan.” Mr. Gaffney then commented that “I 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 ...” Dr. Palmer next stated that “...we wouldn’t maintain it. We wouldn’t put money into it ...” Dr. David Brown, CCC Member, then commented that “[Council] deliberately changed the language from ‘maintain’ to ‘keep in place’ so we wouldn’t have an expectation that we would be actively working to keep in good condition, rather just to acknowledge that we would like to see it remain in place.” Supervisor Boyd next stated “...that over time – 10 years or so – if you don’t use that pipe, is it going to become unusable? I don’t know what’s involved with maintenance ...” Supervisor Mallek then questioned, “if you close a valve and it’s dry, does it decompose, degrade, [or] corrode more than if it has water running through it? ...” Mr. Frederick replied that “the pipe material itself, while it’s subject to cracking with freezing and thawing, is pretty hardy material. So I don’t see why [except] for just rusting out – I don’t see that as a much longer term process. The joints are made of old technologies, so they have more [tendency to leak]. In addition, there are in many areas of the right-of-way [where] forests have grown up around the pipeline; that easement corridor is ...undefined ... the trees have not been kept off the pipes, so that could cause some problems as well ...You want to release air at high points on the pipeline to keep it operating [well]. Those are probably the first things that will corrode and fail.” Supervisor Rooker next inquired if Mr. Frederick was stating that “the ability to use it may diminish as time goes by because it’s deteriorating,” and Mr. Frederick affirmatively replied. Supervisor Rooker then stated that he “didn’t see anything in the wording here that I think creates a problem in terms of the plan.”

Concerning the pipeline, Mr. Martin next commented that he felt he “was missing something because I don’t see why this provision is in the agreement at all or why it’s there ...unless there’s some other reason why someone wants that pipeline to be there other than to serve in the event of a failure with the main water system ...We’re not going to dig it up; it’s going to be there ...Why does this have to be ...” Councilor Huja replied that there was “no other reason” other than for “emergency case uses” and Council was “just acknowledging the fact.” Supervisor Mallek then asked if this was “implied in the existing permit,” and Supervisor Rooker next commented that he didn’t see it “as a matter really of discontent. No one is expecting that pipe [will] be resumed, and if it serves an emergency purpose in the future, 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.”** He saw one of the issues for discussion concerned how the decision is made between using the existing dam or build 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, Supervisor Rooker next commented that he felt “at some point all the questions need to be answered about whether you could actually build a dam to 42’ on top of the existing dam and if this option was actually cheaper. He then questioned whether “you would end up with something that has a long-term viability” He did not believe that “we have the information in hand today to say one way is superior to the other way You’re going to have to bring in material that may or may not cost more ... may or may not be as structurally engineering sound. I don’t have any problem with having an either/or there. Obviously at some point in the near future that either/or needs to be answered. I don’t believe we can do that today.”

Unless there were objections, Mr. Gaffney felt it was the appropriate time to return to Item 2 concerning dredging to see if the differences could be resolved between the parties.

Supervisor Rooker next stated that “the concepts in here – depending on how you interpret them – don’t bother me, but it seems to me you’d want to have some kind of order. First – your permitting – you’re going to seek a permit for it. Then you’re going to RFP with that permit ... that’s the way I understand it ... or would you RFP it first and then seek a permit for what you RFP’ed?... The only problem with going that way is that you might not get permitted what you RFP’ed ... it seems to me you do those two things and then you ultimately make a decision about what you do based upon the answer to the permitting and the answer to the RFP ...we’re a little aggressive from my standpoint to say that we’re going to conduct hydraulic dredging. It seems to me that we’re going to RFP it, and we’re going to attempt to permit it ... based upon that, a decision will be made as to whether or not it’s viable to go forward with it.”

Supervisor Boyd then commented that he would “like to use that word ‘viable’ because that’s an important issue ...once we actually find out what this is going to cost, not only to do it the first time but to do it in the long run. I don’t have any problem with this particular condition, as long as we totally remove it from our existing water supply plan and have it just be a separate project. It could take two years to get this permitted potentially ...I don’t want that to interrupt what we’re doing with the dam and the additional supply ... if it’s just a separate project that we’re RFPing ... trying to get permitting for ... we move through that as a separate process – I don’t have a problem with it at all.”

Mayor Norris next stated that he did not believe that CCC had a problem “treating it as a separate process, I think we sort of acknowledge that there will be substantial water gains from it ... I think we’re in full agreement. We spelled it out in the Resolution that it’s a separate permit process. We don’t want to hold up the other process as we pursue this.”

Supervisor Mallek then 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 then it can be trapped there if more silt comes in and that protects the viability of the rest of the reservoir, so that would be a likely place to go back every decade or whatever and remove it again ... is that what you meant or did you mean something entirely different?” Mayor Norris responded that he felt “the general sense of CCC [was that] we are looking to the reservoir for water supply, and we’re looking for restorative dredging as a way to recapture water supply. Now, we had a discussion amongst ourselves about how far do we want to commit ourselves in this Resolution in terms of dredging the whole reservoir [or] dredging just the upper portion of the reservoir ... as a way of avoiding having to come down on either side, we left it relatively open ... we’re looking to the RFP process to help inform that final decision ... if the bids that come back say, as HDR predicted – ‘the first three segments we can do fairly cheaply; the other six segments are going to be incredibly expensive’ – then that’s going to help us decide ... this doesn’t bind us either way ... In terms of a maintenance dredging, it’s not limiting us to simply maintaining the portions of the first three segments necessarily. Ideally in my opinion – I’m not speaking for CCC – if we get a bid that talks to restorative dredging for the whole reservoir to its original capacity or as close as we can get to its original capacity and show that it can be done fairly cheaply, then the maintenance dredging would basically be for the 30,000 to 60,000 cubic yards that come in every year in the reservoir. They would remove that so that we have a pristine reservoir for many years to come, but that’s premature to say at this point until we see what we get back from [the] RFPs.”

Dr. Palmer next commented that she was still having “trouble with the clarification, and I apologize. We’ve been told that the first three segments get us about 3% of the total water that we need ... of the total water supply that we originally planned ... On a normal basis if we don’t have a drought, we don’t really use our storage ... where we get into problems is drought. My understanding is that much water during a drought really only gives us a few days of the week – I could be wrong about that ... it’s not very much ... I don’t know what you’re talking about when you say that you want it separate from the water supply plan, but you’re counting on it for volume, so then you start getting into the whole stream flow and the permit thing ... how much of that is going towards our total volume – because our permit is going to be based on the instream flows, which is based on our total volume ... I keep going back and forth, and I hear you say that it’s separate from the approved plan, but then you’re doing it for storage ... I’m trying to get the permit in there. I’m trying to think as [Mr. Frederick] suggested ... to think about the permit ... that’s kind of nebulous in my mind right now as to where you’re going with that ... “

Councilor Huja then stated that the “water gains from dredging ... if you use that water, you will not need to [perform] some work.” Dr. Palmer then replied, “it puts it in the permit so it puts it in the plan – is my understanding.” Mr. Gaffney next stated that “it’s a separate permit so it’s not in the initial permit.” Dr. Palmer then commented that “you can’t count it as volume ...” Mr. Gaffney next stated that we are already permitted for the initial construction of the dam. “We can go ahead and do that. It would take a separate permit to do dredging.” Dr. Palmer replied that she understood Mr. Gaffney’s last statement, but she added that “our Virginia Water Protection Permit for the instream flow – and obviously we’re going to have to amend it ... we’re wondering ... [if] it’s going to be a major amendment or a minor amendment. Right now it’s based on a specific quantity of water, and what I’m trying to find out is ... are we going to reduce that amount of storage? Are we counting that 3% in that total quantity of storage because that’s going to affect the Water Protection Permit.” Mr. Gaffney then commented that he thought that “3% was insignificant to the whole scheme of things...” Dr. Palmer further stated

that “it sounds like it would reduce the total quantity because they are talking about reducing the total storage. We’re going to have to amend the permit ...” Ms. Kristin Szakos, CCC member, next commented that the permit is for a dam at 42 feet, so she felt it was not a reduction in storage but a timing issue. Dr. Palmer then stated that you would “still have to [amend] the permit at some time and you have to say, ‘ok, well I’m going to hit it in 30 years or I’m going to make it a 30-year water supply plan instead of a 50-year water supply plan.” Councilor Szakos next commented that she didn’t “think anybody’s arguing that 42 feet is needed now for that to happen.”

Mr. Gaffney next asked Mr. Frederick the following; “On the permit, if we permit dredging separately, will we need to go back to amend the permit we currently have?” Mr. Frederick replied that he didn’t know the answer at this point. He further stated that “once we understand from a policy standpoint where you all are, we need to go sit down with the regulatory agencies and delve into some of these details. I don’t actually know the answer right now what that impact would be.” Supervisor Boyd then asked if “CCC would be agreeable to put that as a condition ...that if it does impact our permitting requirements for the water supply plan that we won’t move forward with it at this point?” Mr. Gaffney added – “or we do it after we start the dam.” Supervisor Boyd next commented that “it’s probably going to take that long to get approval for it anyway.” Mayor Norris then questioned – “To what extent does it impact any permit that we have with DEQ. If it impacts it and correcting it is a simple permit amendment process, to me that wouldn’t hold up any of this.” Supervisor Rooker next stated that “the amendment process ... was a 9 to 12-month period of time ...” He then referred to chart that was handed out and commented that “...there’s been a lot of cost charts that have been sent around, and I think they ... in a way obscure ultimately what the cost comparisons are ...when they opened the [CCC] meeting last night – the segment to discuss the water supply plan ...said really what we’re talking about is how do we require additional capacity because all these other components of the plan are pretty well decided on. If you look at the cost of acquiring capacity in various ways that have been considered, what you find – increasing the height of the dam costs somewhere between 1/10 and 1/15 per gallon of the cost of dredging if you’re trying to create capacity – based on the cost estimates –I realize that’s not an RFP and you never know final costs or anything until you get a bid by somebody who can perform the work and could bond that work.” Mr. Gaffney then stated that he thought “what we’re talking about here with Segments 1 - 3 is the potential of doing it at no cost to Rivanna and possibly even making money ... Let’s not use this for the overall dredging numbers, even though I know exactly what [Mayor Norris was] saying ... we’re really talking about this finite bit of dredging to start. I don’t think we want it to affect the permit that we currently have, but still need commitment to do ... Segments 1 -3.” Mr. Duane Snow, AC BOS Vice-Chairman, added – “provided that it pays for itself, and I agree with that. I think that we’re all in agreement with that. I think that’s a good suggestion ...” Mr. David Thomas, ACSA BOD Member, then stated that he agreed with Supervisor Snow – “that obviously if it creates capacity at no cost for Rivanna, then I don’t think anybody is going to have a problem with that – not reasonably anyway. I guess my question would be – Do we have any idea how much, given that we understand generally the additional capacity that could be created through the initial dredging – do we know what that relates to in terms of the necessary pool height on either the new or existing dam? ... If one time dredging means that you only have to initially raise the pool to 13 feet instead of 18 feet – obviously at this point I’m just using numbers with no basis whatsoever – but I would be interested to know – if we’re already building the dam and we contemplate a particular pool height based on our timeline of how much water is needed when, what affect does the one-time dredging have on it ... it would seem as though if the dredging is no cost, then great. We do it because ...again, no cost [and] creates

capacity; but we would need to compare the cost of dredging to the cost of raising the pool height for the dam that we've already agreed to construct ...from my perspective, that would be the key number – how much does it cost to raise the pool height three feet if we don't dredge versus not having to raise it three feet if we do dredge ... for me that would be the tradeoff because at the end of the day, I'm concerned about creating overall capacity, whenever we need it, for the minimum impact on ratepayers and taxpayers."

Mayor Norris then stated that "we know from DEQ's own numbers – this is not the City this is DEQ – that restorative dredging of the full reservoir – bringing it back to its original capacity – would provide enough water for approximately 30 years – 15.5 million gallons per day (mgd) – according to the Swartz report – the demand according to DEQ analysis. Now if do full capacity dredging plus 13-foot rise, it provides enough water that meets our safe yield for approximately 40 years. We're not talking about risking our water security here. This is a substantial investment in our long-term water security, and by avoiding building a 42-foot dam now, we're saving a tremendous amount of money for the ratepayers of this community and avoiding a significant amount of environmental damage to our natural resources." Supervisor Boyd then asked Mayor Norris if he could "substantiate that we're saving money because I don't think we are." Mayor Norris replied that "to be fair I'm adding in the actual cost – capital plus interest payments, which we haven't got hard numbers on – but by any calculations, it's going to be substantially cheaper." Supervisor Rooker next asked Mayor Norris to look at the chart "that have been provided by the very engineers that you have hired to provide the numbers." Councilor Brown then commented that he felt this discussion was "getting into territory where CCC did not agree last night ... I think rather than us have a discussion on the merits of full dredging ... that wasn't an issue that CCC was fully in agreement ... what we came up with was a way to try to move forward, get a dam built, begin to dredge, and give time for the community to see is there a way that we can avoid building the dam to the full height, but at the same time plan to build it to the full height so we have to prove there's actually a better path 10 years from now because we plan now that we're going to build the whole thing ...that's where I think we are, and if we want to go back and talk dredging versus dam building, I think I'll just go home. I don't think we're going to get anywhere."

Mr. Gaffney next commented – "What is in the Resolution that they are asking, I believe, is that we – as [Supervisor Rooker] said ... agree to permit an RFP and dredge Segments 1 - 3. I think that's what this actually says and then 'continuous maintenance.' There're some differing definitions of what 'continuous maintenance' means ...Dredging 1 -3, I think, made sense in HDR's report and was something that Rivanna – we didn't vote on it, but it came up and we discussed it and we were ready to vote on it and [would] probably approve doing that." Supervisor Boyd then stated that Mr. Gaffney was "basing that on the fact that it would be a zero cost for Rivanna. I don't have a problem with that, but I think I'd like to consider the idea on an RFP that we'd be putting the business risk on whoever is going to dredge [the SFRR]. Let the dredger decide on whether or not there's a market for that ...there's a big question out there on whether or not there is a market. If you can get an RFP from somebody who sees a business plan where they can make money off of dredging that river ..." Supervisor Rooker next stated that he "met with several dredgers, and I voted for a dredging plan eight years ago. Blue Ridge Sand said they can take care of one component of the cost by selling material ...you can say we're doing opportunity dredging. I think they can take care of the removal part of the cost, but not the actual hydraulic component."

Councilor Brown then asked how the costs were being “split up for doing the overall project – the approved plan.” Supervisor Rooker stated that it would be “subject to subsequent agreement.” Councilor Brown further questioned why this “wouldn’t fall into the same category?” He completely acknowledged [Supervisor Boyd’s] point of view on this, but why would we treat this bullet any differently than the entire agreement, where we’re planning to do an extensive project and we’re going to figure out how to cooperate. We can’t move forward until we figure out how to cooperate paying for it. Why would this bullet be treated differently than all the other bullets in the overall plan?” Supervisor Rooker next commented that he didn’t “have a problem with that except if we’re talking about Segments 1- 3 and it’s a maintenance dredging – personally, I’m fine with that. [Mayor Norris] keeps coming to restorative dredging of the entire reservoir...” Mr. Gaffney added – but that’s not what’s in the Resolution.”

Dr. Palmer next commented that “one of the reasons why we may not treat it the same is that if we’re doing it for capacity and we have to build the dam also – to some extent we have to repair the dam – then you don’t want to front load the project. We can only buy so much new capacity. When we very first started this whole thing, the City said that they wanted a certain percentage of the new capacity ... so we said we were going to take the rest. Right now with the direction of the way things are going, we’re not sure if you even want that portion of that new capacity ... We were thinking to ourselves – ‘ok, are we picking up the rest that the City decided not to buy?’ ... If they’re going to add more maintenance dredging or something like that ... than we have to pick up more capacity. We can’t really comfortably buy 80 years of capacity for our ratepayers ... that’s why we’re kind of wondering what you’re doing because we don’t have all the numbers ... I was going to ask, and I don’t know if this is the right time or not ... a few minutes ago ... somebody said it would be helpful to have the cost of increasing the height of the dam in phasing ... I know that [Mr. Frederick] asked Schnabel Engineering to make some comments and got some information on the earthen dam – not the Black & Veatch one ... to give us some idea of what phasing looks like cost wise, and I don’t know if it’s an appropriate time to think about looking at that chart or not because it is compelling.” Mr. Gaffney suggested waiting till the discussion on Item 5 to address her question.

Councilor Huja then stated that “the SFRR is part of the water system, and water is the asset for the water system. I don’t understand the reluctance to dredge and retain the asset you have. If you can retain the asset, it’s going to lead to revenue and a lot more money off of it.”

Supervisor Mallek next commented that “in addition to the financial cost that we’ve all been talking about, there is an environmental cost around the dam and there certainly is going to be a neighborhood cost – three of our districts come together right at Reas Ford ... the citizens there will be impacted either once every 10 years or all the time with the effect – very similar to the quarry that’s on Rio Mills Road – that’s what happens when you do this dredging – people have to get at it and they have to remove the material ... those kinds of things need to be thought about as part of the dredging estimate ...”

Dr. Palmer then stated that “... we learned during the SFRR Task Force that the SFRR is a community asset. We all agree on that, but we don’t need restorative dredging – it’s not going to atrophy; it’s not going to die. The hydrology is such that the channel will remain open ... What we’re seeing now is that five plus miles from the Hydraulic Bridge upstream is just kind of slowly narrowing and that the couple of miles below that to the dam has steeper sides and that pool will remain for quite some time. It was estimated by the people who came in and spoke to us then that sometime around maybe 75 years from now we would have to do some dredging

around the intake ... There's a big difference between restorative dredging – the 7 ½ mile long river – then keeping it maintained for recreational purposes and other things like that. There was also a gentleman that came in to speak with you last night ... I wished he had gotten finished – his thought went over a little bit, and he had to stop – but he's a biologist who used to work for the County ... he was trying to explain too that we get a lot of sediment in there during storms, and I think that it's important also to mention that sediment deposition is erratic. It's somewhat dependent on storms ...”

Mr. Gaffney then suggested that “we move to Item number 4, and then we'll come back to this or maybe combine this with another one.” Supervisor Snow next stated that “before we do that, maybe we can make a motion or an idea to put forth that we might all be able to agree on and put [Item 2] to rest – maybe something to the effect ... I think we all agree that taking care of areas 1 - 3, provided that we can sell the sand and get out of it with very little cost. We realize that it may take a couple of years, but I think we can say, ‘ok, let's agree to that; that we look at it – look at the cost, put it out on a bid, [and] work on that as a separate item – that we all could agree to look at as a separate item and then move ahead with the bulk of these – the other nine items – as expeditiously as we can.” Supervisor Boyd next commented that he “would have no problem with that, as I think this is probably going to where [Dr. Palmer] was going. We need to address the height of the dam next because my understanding is that even if you built only a 13-foot extension, it's going to be about 99% of the cost anyway. If that's the case, then we don't need to make capacity an issue here – not its cost – because if we end up with more capacity than what we need, that would be fine. It would be so much better if we could build it at the same cost or less cost. It makes a lot more sense to do it then. Mr. Gaffney next stated “that was a very good reason to move on to number four because we can combine this possibly with numbers two and five.”

Mr. Gaffney then stated that with number 4 there was a lot of agreement with this, but some question on what happens to the pipe over time ... is that part of this or are we just assuming that it's going to exist and if we need it, we find out whether we're still able to use it.” In response to Supervisor Rooker's comment that he thought the four boards had reached agreement on this item, Mr. Gaffney suggested moving on to number five.

Prior to the discussion of number five, Dr. Palmer questioned – what if somebody wants to build something over top of that pipeline, and we're maintaining it. Would we maintain an easement? Is that an issue that's made up of all kinds of things?” Supervisor Mallek then inquired if the Sugar Hollow pipeline easements were all in the floodplain ... “so it's unlikely that somebody would build a house or a garage in the footprint of the Sugar Hollow pipeline?” Mr. Frederick responded that 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, but sometimes after they start – they're on top of the pipeline, and we have a conflict [to try to] resolve. Those things do happen from time to time.” Supervisor Rodney Thomas next asked if that was an easement or a right-of-way and if all the right-of-ways were designated. Mr. Frederick replied that Mr. Kurt Krueger, RWSA Counsel, advises that it is an easement. “It's a 1927 document, so they don't look anything like easements look like today. It's a very general document. In fact, one of the provisions in it says that the property owner gave the right to the City of Charlottesville to put a pipeline wherever its engineers said it wanted to ... there are a lot of loose ends ... obviously, as long as we're going to keep that pipeline in service, we're going to take a position that we have a right to be there and a right to own it ... because the easements are written very loosely and very generally, there are sometimes cases for dispute.” Supervisor

Rooker then commented that he thought “we were all in agreement on this. I don’t think we’re going to abandon ... we would just leave it in place. It seemed to me when [Mayor Norris] brought this up last night, it made sense, and I think everyone agreed. Since there was agreement that this item had been resolved, Mr. Gaffney proceeded to number five.

Mr. John Martin stated that he “had a question right at the outset of number five and that’s with respect to the height of the dam. We had an agreement in 2006 to construct the dam to 45 feet. City didn’t object to that; City agreed to it ... now the City is proposing a dam of 13 feet. Since that time there’s been some discussion about the City’s ownership rights of the reservoir land. Am I correct in understanding that the City will now exercise its ownership rights to prevent the construction of a 45-foot dam? Right now, is building the dam to full height off the table?” Councilor 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.” Councilor Brown added that he had “never been part of any discussion by which the City would exercise that right.” Mr. David Thomas then commented that this “may be an easier question to answer – Supervisor Boyd made reference yesterday to the difference in the cost of a phased construction ... I understood that we were talking about initially building the dam to full height but only filling the pool to the particular [height] because that was the issue with tree impact and the environmental concerns that certain parties had. Do we know what the difference in cost of phased construction is because it does seem to me a little silly if we’re talking about a 1% or 2% or 3% savings to go to 13 and then 42? Whereas if we’re talking about a 50% difference and that’s less money to be borrowed upfront ... I guess my question – Do we know for certain – other than simply – and obviously I haven’t done an RFP on the difference in building ...?”

Mr. Gaffney asked Mr. Frederick to address Mr. David Thomas’ question. Mr. Frederick first distributed a matrix to the board members and the remaining copies for the members of the public in attendance. He stated that the information contained in the table “is a summary of information that’s already been made available. The first line says ‘Preliminary Design Full Height Single Phase.’ This is information from the report that Schnabel Engineering released in May of this year regarding a new earthen dam. They came up with a probable opinion of construction – we’re dealing with construction costs only now on this table – of about \$22.5 million, and they came up with a range of \$22.2 million to \$27 million ... The next three items – where it says Option 1, Option 2, and Option 3 – were contained in the supplementary report that Schnabel released in July, after we asked them to do a phased construction assessment for a new earthen dam. Option 1 ... \$15.4 million – that represents 68% of the cost of a full height new dam. That is built with a foundation only to support 13 feet ... if you build this one and then you come back later and you want to raise it, you’ve got to go all the way to the foundation with whatever improvements you’re going to make.” Supervisor Rooker then asked if anyone was “talking about that,” and Mr. Frederick replied that he was not aware of anyone discussing this option. Mr. Frederick then commented on Option 2, which involved building a support structure to accommodate 42 feet and stop at 13 feet with the idea that “you’ll put a cap on it later to raise it the rest of the height – so it’s building a shorter dam initially. According to Schnabel’s estimates, you would pay 99% of the cost of a new full height dam in the construction of Phase I, and then you would spend 16% to put the cap on in Phase II. It relates to the fact that when you do it this way you’re doing some things particularly to the spillway – your building a spillway for the first phase and your demolishing it and building a new spillway for the second phase. The spillways ultimately have to work for a specified height, and you have to modify it to make any changes, or in this case, Schnabel’s actually said that you have to build a different spillway. Option 3 is the one where you build the entire structure in the first phase, but you don’t fill the

pool. You fill the pool up in stages, and this is based on the first stage being 13 feet. The cost as you might expect in the first phase – you pay most of the cost if you’re building the entire structure – is 98%, and then the second phase is 3% – is largely just the clearing of the additional area for raise the pool in that 3% – for a total of 101% ... phasing by the second method is very close to the same cost outcome as building a new dam, only slightly higher ... the option where you’re actually phasing the dam itself, you incur some substantial additional costs in overall long-term ... probably most important is you have essentially – all but 1% – you’ve paid the cost of a new dam with a small exception upfront. What this says to me ... there are valid reasons for considering phasing the pool height, but trying to save money is probably not one of them.”

Mayor Norris then asked Mr. Frederick if had “the chart from Black & Veatch about their preliminary estimates on simply expanding the existing dam?” Mr. Frederick replied that he did not have them with him. Mayor Norris next stated that “...these are very preliminary estimates. They haven’t done final design and engineering, but all three options are substantially cheaper when you’re talking about simply expanding the existing dam and that the margin between expanding 13 feet and expanding 42 feet is about \$9 million – that’s the capital cost. Of course, you add in interest payments on any bond you have to issue.” Supervisor Rooker then commented that “you can have engineers arguing among each other about this cost differential, but ... if we’d followed the plan that’s outlined in the bullet, we would spend 99% of the money to acquire 20% of the capacity if you build a new dam ... which was pretty much what was on the sheet that I handed out ... it just makes no sense to spend 99% of the money to acquire 1/5 of the capacity.” Mayor Norris next stated that “the bullet leaves it open to either a new dam or building on the existing. It doesn’t decide either way. We didn’t make that decision last night. If you look at what it cost to building on the existing dam, it’s much different cost range.”

Dr. Palmer next stated that “I agree with you [Mayor Norris] in that it’s very preliminary costs on the Black & Veatch study, and I just would like to mention that a couple of years ago Gannett Fleming gave us preliminary price on the Ragged Mountain concrete dam at \$35 million ... then when they did the geotechnical work, it turned out to be \$84 million ... the geotechnical work has not been done by Black & Veatch, and they do have a very large qualifier in their letter.” Mr. Gaffney added that “again, as [Mayor Norris] said, ‘very preliminary,’ and what we are contemplating with this is a choice ... whether we do a brand new dam or build upon [the existing dam]. I think what Supervisor Rooker is saying is that it makes sense to build the whole dam if we’re building a new dam. What Mayor Norris is saying is that [it] may not be the case if we build upon the existing dam.” Mr. Richard Carter, ACSA BOD Member, next asked – “When will that decision be made? When we put out RFPs or do more studies ...?” Supervisor Snow also questioned – “and how much time is lost if we go back and study? ... Are we talking about another year, another two years, another couple million dollars to get to the bottom line ...?” Supervisor Boyd then stated that “I can’t imagine that if we go back and want to change our permit to build on the existing dam as opposed to build a new dam ... not have to go through an extensive permitting process ... am I wrong in this? ... They’re not concerned with the safety issue. They’re only concerned with capacity and environmental.” Mr. Frederick replied that “DEQ and the Corps are concerned about impacts to the streams, wetlands, endangered species – those kinds of issues ... I don’t think they have a vested interest in saying it has to be built onto the existing dam or it has to be a new dam. Dam Safety – they have a different set of interests; different agency – I know they don’t care what method you use. They just want the safety issue resolved.” Councilor Brown then stated that “we can think about this in terms of percentages, but we can also think about it in terms of the raw numbers. Most of the people I’ve been talking to have been talking about raising the pool gradually, so if you subtract the additional cost of

raising the pool ... use that and then compare Option 2 to Option 1 – we’re talking about between \$1.5 million to \$5 million in overall cost to phase the dam. For example – I’ll do the most favorable one to our point of view – the low end of probable construction if we did it all at once is \$20.2 million – if we did the low end full height single phase. If we did this in phases, it’s \$21.9 million. It’s \$1.7 million [difference] ... You could also subtract that half a million dollars that is the additional cost of raising the pool height, assuming we’re all somewhat in agreement that we would do the pool height in phases no matter what – I heard a lot of people bring that up. In any event, between \$1.5 [million] and \$5 million is the difference – [between] the low end [and] high end of either doing it in phases or doing it all at once. It’s a percentage of doing the dam, and it may be a big percentage, but it’s the percentage of the overall project that we’re investing in the water supply ... is only about 1% to 3%.”

Supervisor Rooker then commented that “...we have gotten a letter from DEQ that says – assuming what we’re doing is dredging a small area, which is what we’ve talked about, and it creates maybe 3% additional capacity – you still need virtually all the capacity made up at Ragged Mountain. I’m looking at the letter that was sent by DEQ that basically says that a 13-foot dam will not be approved.” Supervisor Rooker next read the following from the DEQ letter concerning a 13-foot dam: “The dredging and dam alternative, when evaluated in the context of the existing permit conditions, would not meet the instream flows that were originally proposed. The permit would need to be significantly reworked to address these changes. 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 I understand 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. To talk about 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 me to not make a lot of sense.” Mr. Gaffney next asked if the DEQ letter stated the height that would meet that requirement. Supervisor Rooker replied that DEQ “was asked specifically about the 13-foot dam and dredging, and the letter addresses that point.”

Mr. Jim Colbaugh, ACSA BOD Member, next stated that “I guess when I look at the numbers and I recall the letter that we sent to CCC, it’s clear that most of the new capacity of that reservoir is going for County growth. There’s no doubt about that, and the County ought to pay for that. We said we would pay for that. If a 13-foot dam is what is proposed for the first phase, we work out a cost sharing agreement for that and then build it to the full height and we pick up whatever’s left – that would be the additional capacity that we have ... then you simply run it on an operational permit that controls how much water you keep in there, and Rivanna can do an operational permit that phases the pool height. If it’s a matter of cost to raise it from 13 to 42 [to] 45 – whatever it is – I believe certainly we’re willing to step up to the plate and pay for that addition completely.”

Mr. David Thomas next commented that he “understood the objections used in differences in pool height ... I’m agnostic on the difference between a 13 foot and 18 foot ... however high the pool height is based on need. I guess my question is – What is the CCC’s position or why would the CCC be opposed to building the full height initially as opposed to building the dam itself ... to 13, 30, 42 feet? What’s the objection to building the whole thing and then filling the pool as necessary? – that’s the part I guess I’m not as clear on ... What’s the harm?” Councilor Szakos responded that “I actually argued the other last night. I was looking at the full height with a phased pool ... one reason that I voted for this is that I think we talked a little bit about the idea

that if we build for failure – if we build for acknowledging that we won't be conserving, that we won't be meeting our ideals as a community that takes care of its resources. So, we'll have no pressure to do that ... the fact that we believe that we can do it; that we won't need that additional capacity. I think that was the argument."

Supervisor Mallek then stated – "Going back to what Supervisor Rooker was reading from – the letter that was sent to Mayor Norris and me in August – they're talking about the fact that without this capacity, then it does not meet the habitat protection values of the river that these two agencies are concerned about ... so it would not pass; would not be able to be a substitute for – certainly at the 13-foot level. Whether it would at a 30-foot level – I hear that number kicked around, and I don't know how that would play out in this chart – to be a more middle range approach whether it would help." Mr. Gaffney next asked Mr. Frederick if Rivanna "had any idea whether a 30-foot height would meet what DEQ was concerned about in the letter if they're saying 13 feet wouldn't meet or what would?" Mr. Frederick responded that "when you ask questions about what would DEQ and the Corps expect, I always have to qualify them. I don't know the complete answer. The way the regulatory agencies work – you apply for something; you give them all the details, facts, and supporting documents. Nine months later you get an answer. When you have an informal discussion with them, sometimes you can get some information out of them that will be helpful, but you never get a straight yes or no answer. We've done some preliminary work – and I'll call it preliminary – with this idea of phasing the pool. The conditions upon which we did that preliminary work is – 'let's work within the framework of a permit document itself that talks about a dam and pipeline. Let's don't talk about dredging in this context, even though we may agree to do it as a community.' In that context if you're planning for something on the 15 to 20-year horizon as an initial base – because I think if you plan too short an interval, you definitely increase the risk that the regulatory agencies are not going to like what you propose. If you start out about 15 to 20 years, you put into your programming the condition of a smaller reservoir at SFRR 15 to 20 years out. This is an assumption that you may not dredge the reservoir. You put in the additional stream flow releases to the Moormans River that are written in our permit document now and you want some horizon about 15 to 20 years and still have enough water with some reasonable expectation of growth. We're coming up with numbers that are approximately in the range of 30 feet to raise the pool level initially. That gets you in terms of safe yield something on the order of approximately 1/3 of the way between where we are now and that goal we set in 2004 at 18.7. To get another 1/3 of safe yield can actually be accomplished without raising the pool height above 30 feet by building the pipeline from South Fork. 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 ... it's capacity beyond what Sugar Hollow can provide – not just because of a pipeline size – but because the reservoir itself is fed by an 18-square-mile watershed, and it's going to deplete more rapidly. The last third of your safe yield – if you need it in the future – this is where the argument is – we don't use it till we need it – you raise the rest of the pool height from 30 to 42 feet. That's all preliminary. I think if we were going to try to detail this and put it into a proposal, and you would do a little more homework, and you need to take into account your questions – and perhaps other scenarios you may want to look at – but what we're looking at preliminarily is that 13 feet is not going to get enough to give you a 15 to 20-year plan."

Dr. Palmer next commented that "I just want to say something about what [Councilor Szakos] just said about the goal of the conservation because I think that's really important ... Sometimes these things have unintended consequences, and being part of a group that pushed for

conservation for many years and did all that we did – now we’re looking at a situation when we really have to ask ourselves why we are pushing that hard ...if we push that hard and lower the dam height ... we might actually be hurting our rivers ... our big concern is that this is pushing ourselves into this situation and not being able to control something and not being able to control population as well as we would like – we might get ourselves into trouble.”

Mr. John Martin then stated that “my concern about either phasing construction of the dam or phasing the pool level is with respect to the future decision making that would need to be made in 15 to 20 years as to whether to build the dam to full height or raise the pool. That’s why I started asking the question before. I’m assuming that the City is not going to voluntarily relinquish ownership rights to those reservoirs and that the City views itself as being in a position in 15 or 20 years of either approving or vetoing a dam expansion or increasing the pool. At that point in time, 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. I frankly don’t think it’s the City’s call to be determining what additional capacity that ACSA needs to serve County resident. That’s our job. Your job is to decide what capacity the City needs for your residents.” Am I correct that we would be having another perhaps Four Board Meeting in 15 to 20 years and going through all this fun and having a big debate about whether or not the pool level should be raised or whether the dam should be raised?”

Mayor Norris next responded that “the City is clearly committed to meeting safe yield that this region needs to meet the needs of the County and the City. We’re talking here specifically about – we’re going to reassess based on actual growth, based on actual population [and based on] actual use. We have committed to building up to 42 feet if that becomes necessary to achieve safe yield. There’s nobody on CCC that wants to put this region at risk of not meeting safe yield. I don’t know how clear we can be. This is not an effort to put the City or the County at risk of not having enough water, period.”

Supervisor Boyd then commented that he “just wanted to add to what [Mr. Martin] said because I think it’s very apparent what’s happening here is that people who are not elected in Albemarle County are really holding the County hostages in what we can and we cannot do based on what you all want to do. I’ll just be honest with you – that kind of sticks in my craw. I want to relay to you a story that I think is very parallel to this. In 1993 CCC and the AC BOS decided under pressure from the regulatory authorities that we needed to do something about the capacity and maintenance issues in our jail. We hired a consultant to come in, and the consultant said that we needed to increase the size of the jail to between 500 and 600 beds by 2008 and that was going to meet our needs ... so it’s a 15-year plan ...the CCC balked at that and said ‘let’s look at alternatives to incarceration.’ The AC BOS relented. They built half of what the consultant said they [needed]. Now, as we all know, we’ve got overcrowded jails. We’re at just about at the capacity that they said that we would be at in 2010. I don’t want to see it repeated – that type of situation because we’re short-sighted about what the needs would be ... I much rather have somebody sitting here 30 years from now saying, ‘Gee, we’ve got a little more water than what we need,’ than somebody sitting here saying, ‘... you do have to conserve because there’s no water there.’ I really have to take exception to the fact that we’re going to force people into conservation by making little water available ...because then I see businesses like we heard last night when we were in 2002 – people in Supervisor Snow’s business went out of business during those years because we didn’t have enough water supply.” Supervisor Rooker added that “especially when the cost between a 13-foot structure and a 42-foot structure difference is 1%.”

Mayor Norris then questioned – “... If Black and Veatch’s numbers are correct or close to correct, I don’t know why you would build a new dam, unless we determined that the life span of the dam be significantly different?” Supervisor Rooker next stated that “first of all, different engineers seem to have different opinions on whether it makes sense to add to that existing dam ... we do have a set of numbers in front of us, and I think even if you look at your Black & Veatch numbers, the difference between 13 and 42 is not huge.” Mayor Norris responded that “No, it is huge ...\$9 million ...” Supervisor Rooker then commented that “the other thing is the bidding climate we’re in right now – the Meadow Creek Interceptor was estimated at \$20 [million] and came in at \$11 [million], I believe. We’re making, I think, a big mistake – the other day the economist announced that the recession was over. Now, a lot of people are still out of work and that’s always the case when the recession ends ... at some point the economy is going to come out of its current malaise and the current bidding climate will not be there. Four or five years ago ...we had RFPs that went out, and the bids came in 30% or 40% higher than the engineering estimates. Now we’re looking at the exact reverse of that, and we really need to move, I think, and take advantage of this current bidding climate. My expectation would be if we decided to build an earthen dam that’s been estimated ... would be at the very low end, if not well below, the range that’s estimated. Again, that saves our ratepayers a lot of money.” Mayor Norris asked – “Wouldn’t the same be true of building on the existing dam? If the construction market good, why wouldn’t the same apply to either project?” Supervisor Rooker replied that he “wasn’t making a differential here ... I will say that if you don’t build it all right now, you’re going to come back and incur a second cost at a time when the bidding climate probably is probably not what it is today ... It would make no sense to me from a community standpoint to incur that cost. The conservation ...on a given day we use 3% or 4% of the water that comes down the river, so whether or not people conserve probably doesn’t make a big difference during times when we’re not in droughts. When you are in drought, people do conserve significantly, at least the last time we had the drought we got to a point where people cut their consumption by 30% to 40% ... but I don’t think you can plan your water supply based upon saying, ‘we’re going to tweak the conservation numbers.’”

Mr. Gaffney next commented that he felt the discussion was “digressing,” and he suggested breaking down this bullet item. Councilor Brown then asked that instead of referring to 99% state “the difference at the low end of construction, which you kind of acknowledged if we bid it now is about \$1.5 million – that’s the difference we’re talking about. Supervisor Rooker then asked – “Why wouldn’t you go ahead now and build – that to me for a 1% cost difference and get the construction done – bid now in a good climate.” Supervisor Snow next commented that he understood [Mayor Norris] to say that “there might be a better way rather than building an earthen dam. Is there any way you could put both of them out for bid ... simultaneously?” Mr. Gaffney replied that it “would need to be designed first. We could put the earthen dam out to bid. Supervisor Snow then asked if that project had already been designed, and Mr. Gaffney responded that “it’s not completely designed ... 30% to 40%. At the same time begin the testing that Black & Veatch would need to determine the next step in what they do, which is essentially what Schnabel did. They had to come in and do all the bore hole testing for the foundation.” Supervisor Boyd added that “[Schnabel] also determined that material is on the site for the most part. They’ve done a lot of preliminary work ...” Mr. Gaffney then stated that “we’d essentially be designing two dams, finishing one at one time and looking at the other one to see whether that makes sense.”

Mr. Colbaugh then asked Mr. Frederick – “Is the reason that the dam height [needs to be] 42 feet or 45 feet 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? The reason you go down from 45 to 42 is because you're making a bigger hole on the water side of the reservoir to build your dam?" Mr. Frederick replied – "That's part of it. There're potentially two reasons."

Supervisor Boyd next asked Mr. Frederick if he "could go back to the point that was made a minute ago ... talked about the fact that if the County was willing to pick up the additional cost involved ... does that bother the City? ... then it's not a cost issue."

Referring back to Mr. Colbaugh's question, Mr. Frederick stated that "there are two reasons why we came back and recommended that the ultimate full height be shortened 3 feet. One of them was just what was said ... Schnabel's proposing to excavate soil out of the bowl to build a dam, which creates more volume. The second reason is – when staff was reviewing Schnabel's report, we identified that Schnabel recommended a dead storage pool of 10% of the total volume. We knew that Gannett Fleming had previously recommended 15%, and a 45-foot height was based on 15% dead storage. We went back to Schnabel and said, 'You're the engineer of record. Is this a typo or is this your recommendation?' They came back and said, 'No, this is our recommendation' ... we were able to reduce the dead pool storage volume, which allowed us to drop part of that 3 feet."

Dr. Palmer next asked Mr. Frederick about "approximately 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 that "if you want to pursue trying to determine if the concept that Black & Veatch proposed is a more cost-effective approach, I think the next step is that – the work that they've done today would need to be subjected to a review similar to the review that Schnabel received from our expert panel. We have on board a panel of dam experts who are very good at scrutinizing and finding weaknesses and finding holes. From conversations I've already had, it would not surprise me at all if out of that came a need to do some more testing – to collect some more data underground under where the existing foundation is positioned – the rock conditions under where the existing dam is. Those investigations themselves can take three to four months, depending on how accessible the driller might be – maybe if the driller is immediately accessible, you can shorten that time a little bit. It might be some additional expense. Drilling is not cheap. We've seen some drilling investigations that we've done on the footprint location for the new dam that approached a quarter of a million dollars, so you'd be making some investment. What you're hoping to get out of it is an answer that – 'Yes, this approach is cheaper.' You may or may not, and I can't qualify what the answer is going to be until you have the data. What I do think you would lose is time – probably several months' time. If an investigation proved that the concept was cheaper, then you've got probably another two to three [to] four months to do preliminary design ... that could be a total of six to eight months of time that you would have to consider. I value this is not an easy decision for you here. You're going to need some time, which is some delay to determine the answer to your question. You may or may not get the answer you want." Supervisor Boyd then asked – "What's the cost?"

Mr. Frederick replied that he "was just giving you my best gut reaction. I don't have a precise cost, but if you had to do some more geotechnical work to confirm to the expert panel that 'yes, there is a better design here,' you could spend a quarter of million dollars or more on geotechnical investigations fairly easily." Supervisor Boyd also commented that "plus what you'd you have to pay the [expert] panel." Mr. Frederick replied that "the panel doesn't cost that much."

Dr. Palmer then commented that she wanted to ask a “more engineered-type clarification question and maybe somebody from Schnabel would want to answer this or [Mr. Frederick]. Can you just speak to the integrity of the dam if you build onto it? At one point way back we were told that it was – I’m not trying to say it would be unsafe to build on top of it or anything like that – but there was some issue with respect to the quality of the dam if you built something all at once or in stages. I just wanted to make sure that was not an issue.” Mr. Frederick responded that “what the Rivanna staff has on that issue is the summary document that was released by Black & Veatch; that’s all we have to go on.” Dr. Palmer then stated – “...like the Schnabel, for instance, this particular one that you have – is there any difference between the dam built all at once or the dam that is added on – structurally? They’re equal as far as longevity and maintenance and all those kinds of things? Mr. Frederick commented that “I’m not following the question.” Councilor Brown then clarified the question by asking – “Does it hurt to have the dam to be built in phases? Does it give you a lesser quality dam? – a shorter life?” Mr. Frederick responded that “technology is pretty good today compared to the past. Particularly with concrete, you can build a section and then raise it a section later. If you know you’re going to build it in sections [and] you put the right stuff in the crack so that you can build onto it later, you can build a pretty secure dam. I don’t know if that’s a major issue. Some people would say it’s better with a dam to build it all at one time. I can’t argue with that, but given today’s construction I can’t say that it diminishes the quality that much.”

Supervisor Mallek next asked – “How does one accomplish going back and cutting the second pool of trees later when the water is already in the first pool? There’s going to be a lot of degradation of the water based upon the activity around it – doing that second phase of lumbering – because lumbering is a messy deal, and it needs to be done very carefully and then remediated right away ... you can’t remediate almost as you go along very effectively ... it’s not something you want to happen all the time ...so, how do we protect the existing water if we take a two-phase approach as far as removing the trees Secondly, how do you protect the existing water if you’re building on the current dam or does that just assume that we’re evacuating the whole thing, which is eliminating a huge amount of storage?” Mr. Frederick replied that “I know from reviewing the work Schnabel’s done that there’s an extensive erosion and sediment control system being placed around the ring of the reservoir. If you want to get into more detail than that, I am probably going to punt this one to Chris Webster, who’s here and can answer that question.” Supervisor Mallek then stated that you’d do all of that a second time then in other words ...”

Mr. Chris Webster, Principal with Schnabel Engineering then commented that “I brought a few boards that I thought might be helpful to visualize things. First, to answer the question regarding clearing and doing a phased approach ...this is actually a board from when we originally started the work, and we were considering a concrete dam. The light blue of course represents the expanded reservoir ... the clearing of course would be where you have a few trails...a few haul roads within that white shaded area. So the same would apply, it just would be more narrow as you work around clearing this area ... the idea would be to minimize any impacts outside an expanded reservoir ... that’s how we would envision if you did a phased approach with the reservoir itself.” Supervisor Mallek then asked if they’d all exist on Reservoir Road, even when the work is done on the far side?” Mr. Webster replied that she was correct, and added that “right now that’s what we considered. Now, is there a possibility of other construction easements? Sure ...and that’s another great point, which is the earth dam that we proposed – one of the other concepts other than cost – to do something economically – is how does it affect the community ...? Part of our staff [review] was to sit down with several citizen groups – and

actually counted them out the other day – it was 15 citizen groups ... one of the things that we got back was how can we minimize impacts, especially during construction. We've had multiple meetings with Camp Holiday Trails – just downstream of the dam – one of the things with an earth dam is again– it works within the confines of a construction site ... the time we were comparing it to a new concrete dam when we were deciding whether or not the earth dam would be a good alternative ... looking at that for a new concrete dam, it would take about 9,000 aggregate trucks brought up Reservoir Road. With an earth dam you avoid that additional traffic ... we were not asked to look at the existing dam or raising it, so other consultants can comment on that ...that one of the advantages with our design, we feel ... how it addresses the community's concerns regarding impacts during construction." Supervisor Snow then inquired about where the 9,000 trucks would be originating. Mr. Webster responded that it would be "from whatever quarry ... again, at the time we were looking at a new roller compacted concrete dam – with that type of concrete – instead of bringing concrete trucks, the contractor would bring in crushed stone that would be stockpiled, either on the site or just downhill from the site, and then the contractor would produce the concrete on-site ... that's what we're avoiding with the earth dam are those stone trucks, basically. Supervisor Snow then asked – "... if you build on top of the existing dam, it still would require that 9,000 trucks ...?" Mr. Webster responded that "I'm not the consultant. My firm is not retained to provide that service. It is a concrete structure ... some means for concrete or aggregate would need to be brought on the road ...I'm sure their [Black & Veatch] consultant can address that question."

Supervisor Rooker next asked Mr. Webster – "In the course of your work on this, did you form an opinion about the structural integrity of the existing dam?" Mr. Webster replied that "...we did some work early on ... some of you may have been involved during the process when we were asked to submit a proposal ... we did some research – and all this is public record now with regard to the records available through the years of condition. Of course, more recently Black & Veatch has provided services and has done test borings of the existing dam and showing that concrete in the areas that they drilled ...looks like in pretty good shape." Supervisor Rooker next inquired if Mr. Webster had formed an opinion, and Mr. Webster stated he "has not formed an opinion ... we would want to review that information and probably would conduct some additional tests if we were asked that professional opinion." Supervisor Rooker then inquired – "As an engineer, if you were to have the choice of having a new earthen dam or taking this existing dam and adding on to it, would you have an opinion about the likely structural integrity of the two structures?" Mr. Webster responded that "just to be clear – are you talking about a new full-height earth or a partial constructed ..?" Supervisor Rooker stated that he was "talking about a new full height dam – the 42-foot dam that you proposed before – as compared to taking the existing structure and adding on to it to create a 42-foot dam. Do you have any opinion about which one ...?" Mr. Gaffney then commented that he thought "it was an unfair question, and I understand why you're asking it. If you go out in the desert and everything is equal, sure –you would always want to – that's why I build new homes. Why would you remodel a home ... I think for this discussion, it's an unfair question ..." Supervisor Rooker next stated that "the only reason I'm going there is ... difference between the new dam and an added on to dam is being raised as a reason why we shouldn't move forward with the plan that based upon a new dam would cost 1% more to go from 13 feet to 42 feet – that's being raised ... you may not be building a new dam so you shouldn't really look at that."

Councilor Brown then commented that "I know it's apples and oranges, and [Mr. Frederick] pointed this out numerous times how preliminary that 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 – it's \$13.5 million less than the full explored Schnabel number ... that doesn't mean that money might not change completely, but certainly that's a significant number ... So, if you're asking for an example of a reason, I think that's not an insignificant reason and might be one that 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.'" Supervisor Rooker then stated that he understood that "we can't build a 13-foot dam with respect to the permitting anyway. We all know that." Mayor Norris next commented that "we don't know that ... we never got that letter first of all." Supervisor Mallek then stated that "it was sent to you." Mayor Norris then responded that "this is an unsigned draft letter ..." Supervisor Mallek next commented that "it was delivered to you in the mail." Mr. Gaffney then noted that "we got the draft previously, and now it's the real letter." Mayor Norris next stated – "I take that back. I apologize..." Supervisor Rooker then commented that the letter says that "the 13-foot dam will not satisfy the requirements." Mayor Norris further commented that "several of us have gone to meet with DEQ and talked to DEQ about this whole endeavor, and it's clear to me that DEQ is looking to our lead to determine what's acceptable ... it was clear to me when I met with DEQ – and those of you in the room who have met with DEQ – there's no hard and fast rule on a lot of this. What they're looking for is improved stream flows ... If we can make the argument that this plan here improves stream flows – particularly over an extended period – for committing to the same height dam if we need it. All we're talking about here is phasing in construction of this dam. I'm not at all convinced that DEQ is going to stop us from moving in that direction. It's all speculation at this time ... the letter says we'll need an amendment. It doesn't say that they're going to stop us from doing it..." Supervisor Mallek then stated that the letter says "it does not meet the requirement" Mayor Norris next reiterated that it says "we'll need an amendment."

Dr. Palmer then commented about conservation. "I know everybody here is really, really interested in conservation, and I think that's one place where we all agree. Under the structure of the permit, even if we change the permit and amend it, I would assume it would still have the same basic structure... It is based on some total volume – whatever that total volume is that we decided that it's going to be ... then it's going to have a set point ... as soon as you get down to a certain percentage of that total volume, you get to take out more of that river. Once at that point, you get to take out 30%. At the next set point, you get to take out 50% ... one thing that we all have to recognize is as we reduce that pool ... we're going to hit that set point more often. We're going to be taking 50% out more often, unless the conservation materializes. Somehow we're going to have to work that conservation to meet that expectation and those set points ... I find that very tenuous. What I'd like to see if you guys would be willing to think about it – to get the dam expert panel to look at the Black & Veatch study and just see what we would have to do find out what it would cost or some kind of estimate of time and money to go further with the Black & Veatch study because one of our issues – as others over here have pointed out so well – we may be going out of the recession, and we're being told that that this earthen dam – we could probably get it for under \$20 million if we begin right now ... If the Black & Veatch study – if there's too many variables in that – we'd really have to consider what kinds of money we're losing too ... Those two aspects of it – if we're really committing to stream flows, you've got to commit to the same level of protection that the plan has right now – not just meeting the DEQ instream flows, because those are two separate things ..."

Supervisor Boyd next commented that "just to kind of move this thing along a minute, I'd like to make a suggestion as a proposal ... I personally, and I'm proposing, that our Board consider accepting all of these conditions that [the CCC] put forth in your proposal with the exception of

– I’d want the dredging to be subject to an RFP and an agreement on cost allocation and that it be a separate project ... then I would like to propose that we – we’re accepting all the other things – that you all concede to us that we build the 42-foot dam – to its full capacity – and don’t fill it all the way ... fill it to some agreed-upon amount ... that we be able to extend this work to RWSA so that they can move forward on it at their meeting this month ... we get this behind us and start moving forward.” Mr. Gaffney then asked Supervisor Boyd if he were making this proposal subject to a cost allocation agreement. Supervisor Boyd replied, “Absolutely...” Mr. Martin next commented that “I have reservations about not filling it up to the full height, and I continue to have reservations about that in terms of whether it would meet stream flows ... I’m concerned about what’s going to happen when we get to the decision-making plan to raise it from 30 feet up to the full height. I don’t want to go through that battle again ... There’s got to be protection about going through that battle again. Additionally I’ll say – I have never seen a single thing wrong with the 2006 water supply plan – not a single thing. It is the best, most sustainable plan that any community can put together ... I don’t understand why you are rejecting it now. I really don’t.”

Supervisor Rooker then stated that the first point – the adequate flow to the Moormans is actually one of the points that’s included and we’ve all agreed on ... whatever pool ultimately was established, it would have to meet that requirement. I personally would be comfortable with that.” Dr. Palmer added that “we would have to define what level is the permit because there’s all these different levels in the permit, and we haven’t defined that here ... I just want to make sure we’re getting the same level of protection in the interim period for the Moormans [River] and the SFRR just as we have under this plan.” Supervisor Rooker next commented that “what I’m throwing out here is a way to move forward.” Mr. Gaffney next stated that “I think that [Mr. Frederick] said ... where they ran some preliminary numbers, and it’s around 30 feet would provide adequate instream flows for the rivers involved.”

Supervisor Snow next commented that “I’d hate to leave here without some type of resolution. I feel like this whole process has been like hurricane weed – you smack the mole and another one pops up ... popping up faster than we can hit them ... have gone through this resolution ... 99% fair ... [if] we can move ahead and come up with something concrete that will allow us all to move on with another phase of our life I think that would be great.”

Councilor Brown then stated that “the information new to me today is the DEQ information about their opinion on the raising the dam 13 feet ... I’d be willing to consider an initial raise that is higher for that reason because I think we committed in here to keep the stream flows ... the sense of CCC was to phase this, and I think we really need to keep that sense ... we’re really having a different conversation than what we had last night. I’d want to explore more fully the implications of say 30 feet, which I think is what [Councilor] Huja suggested last night ... it’s new information to me that what we voted for last night ... apparently that does not meet [stream flow requirement]... I’d be willing to consider whatever the least height raise we can do that would satisfy stream flows but allow us to phase it ... I think the phasing is essential ... as [Ms. Szakos] pointed out, to really give our community the incentive to conserve.”

Mr. David Thomas next commented “that from the perspective of conservation since it’s not mandatory, what is the incentive for citizens to conserve if they’re aware that we’ll raise the dam height, instead of just the pool height if we don’t meet that conservation level ... I don’t have a problem with the idea of incentivizing conservation through other mechanisms ... it seems to me like the situations where they say, ‘Well, if we build more roads, more people will drive them’

...that's not actually how it works. More people move there and then more people drive on the roads ... Mr. Boyd's suggestion is attractive to me because the costs seem to indicate that may be in fact cheaper to build that higher than lower, and it appears that they're talking about somewhere around 30 feet being the minimum height that DEQ will permit to protect the necessary stream flows. We're talking about a 12-foot difference – we're talking about building to 30 feet and then 42 feet. If the ACSA and the AC are willing to consider the addition of dredging, which seems to be something that CCC's particularly interested in, it does seem to me as though there is a possibility for an agreement to be reached that doesn't require one side to either cave completely or for this thing to drag on for three or four or five years, until eventually either Dam Safety shows up and says, 'Guess what? You haven't made any changes. We're pulling your operational permit on the dam'... now we've got to spend all this money immediately, or we go back and forth with DEQ for four years because nobody likes to hear themselves talk as much a lawyer, as I just demonstrated."

Mayor Norris then stated that he thought "we need to go to DEQ and hear it from the horse's mouth. Based on all the information we now have – again, this letter, which I never saw the final draft." Mr. Gaffney next commented that "we need to bring this to a close. We don't need to go off to DEQ." Mayor Norris then stated that he felt "we have to. We're all speculating about what DEQ ..." Dr. Palmer next commented that "when you look at the earthen dam, it's pretty clear to everybody that if we did the earthen dam, we ought to fill it or do it to 30 feet ... Would it be helpful to get more information about the Black & Veatch study from our dam experts? I don't think that would take a long time ..."

Mr. Gaffney next commented that he felt "we're talking about a proposal at this point of a 30-foot pool. I think the question is whether we build the whole thing or not at this point, but we still have a question on the table about whether it makes sense to build on the existing dam or not." Supervisor Rooker then stated that "we're not going to be able to answer that question." Mr. Gaffney next commented that he felt "if we could agree on a 30-foot pool now, that moves us to a point where we can go forward ... there's a time and a cost of doing the investigation of whether it makes sense for Black & Veatch to go forward. I think it makes sense to put that time and that money into at least the dam experts identifying what the next step is to find out the viability of that so that we can look at that. I think it truly makes sense if the cost is correct to only build that to 30 feet if that's where the cost breakdown is on the existing dam. I'm not so sure on a new dam that's only 1%. But again, I'd rather build it to 30 feet and move forward than building to 42 [foot dam] or saying we're going to stick on 42 and not move forward." Mayor Norris then stated to keep in mind that "if you build past 13 [feet], you're going to add in millions of dollars for the I-64 embankment for additional mitigation. There are costs that go up once you pass a certain ..." Mr. Gaffney next commented that "that's already been included in the water supply ..." Mayor Norris then stated that "it's not included in this chart right here. Supervisor Rooker next noted that it was included in *Charlottesville Tomorrow's* [information]." Mayor Norris then inquired and received confirmation if "the chart that [Mr. Frederick] just passed out is only for dam construction."

Mayor Norris then stated that he felt [Dr. Palmer's] suggestion was a good one if that's the way we can move forward ..." Supervisor Snow next commented that he'd "like something written out that we can all agree to ..." Mr. Gaffney then stated that he felt "where we are at the moment is that we agreed with item number two, we agreed with item number four, and [number] five ... we're just down to is 30 feet a reasonable height to agree on or differ...I'll propose [that] whatever we do we just go to 30 feet." Mr. Martin next inquired if he was saying "...not fill it to

30 feet?” Mr. Gaffney replied – “Build it to 42 feet and fill it to 30 feet.” Supervisor Snow then commented that “... if both scenarios work out that it’s only another 1% or 2% to build a 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 would only have cost 1% more.” Mr. Gaffney then commented that “what we’re looking for is something that the City will agree to move forward. Supervisor Snow next stated that you have it couched both ways so we can see what the difference is ... [Supervisor Boyd] made the statement that the County would be more than happy to pick up the difference between 30 feet and 40 feet. It wouldn’t cost the City a dime ... if they’re willing to do those 30 feet and we’re willing to pick up the difference for the remaining height at to cost at all to the City, what would be the problem?” Supervisor Boyd next stated that “it’s not all about just making the City happy ... and then decide on what we do in the County for water supply. We’re the ones most impacted by what we’re doing here. We’re willing to step up to the plate [and] pay better than our fair share for doing that ... it really is just sticking in my craw that we have to do [it] in a way that the CCC wants us to do it. I’m sorry. We’ve gotten burned before on these things.” Councilor Brown asked Supervisor Boyd to define how the County was “paying more than your fair share.” After some further exchanges, Mr. Gaffney then asked – “Let’s not dissolve this meeting into what it could easily go to.” Mr. Martin further requested that “... let’s not rush to a decision either.” Mr. David Thomas next commented that he “wondered if we could come to an agreement about proceeding with one plan with a trigger built in that in the event that the study to review Black & Veatch [study] or further Black & Veatch testing proves that the costs were substantially lower – and obviously these numbers would all need to be worked out – that would allow us to proceed with the existing plan unless and until the Black & Veatch study proves to be cheaper, more efficient, or a better overall plan, and in the event that it doesn’t, we haven’t lost the time while we did the additional work necessary to determine Black & Veatch ... if Black & Veatch determines after doing all the follow-up testing that they can add 42 feet to the existing height at a fourth of the cost, then I probably wouldn’t be opposed [to] just building to the existing dam if the dam life is the same and it’s cheaper because it’s not my money I’m spending; it’s somebody else’s, and I’d rather spend that as wisely as possible ... the problem and the issue I have ... we delayed because we 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 – ‘Well, we’ve been conserving better; we’ve been doing this and that.’ It turns out that the first estimate was pretty good and took into account the conservation that was happening ... was wondering with that lesson in mind, you couldn’t agree to say, ‘we’ll pursue the plan as amended through the water supply plan with a trigger built into it – that if Black & Veatch comes back at some percentage – 60%, 70%, 80% – whatever we determine – we will instead pursue expanding on the existing dam because that’s the one we don’t have information about’ ... I’m wondering if that kind of agreement is possible – at least in theory – with the numbers that you worked out by people who are a lot better at this than I.” Dr. Palmer then commented that “one of the problems with that if we just asked the dam experts, we may not get all those answers. I think what we’re trying to do is just say, ‘could we ask this panel to sort of comment on this first? It wouldn’t take much time ... that would kind of give us a little time to think through some of the other things ...’” Mr. David Thomas next stated that he was “talking about a more long-term agreement that allows us to pursue construction of a dam, whether it’s a new one or an existing one ... the idea would be – the default is a new dam because we know the numbers on it with a trigger built in that if the expansion of the existing dam is cheaper and it’s just as safe and just as long lasting, then we’ll come back with those numbers say ... ‘we went forward, but we’re going to scrap it because we can save \$20 million in the long term by doing the existing [dam].’” Mayor Norris then commented that he “was in agreement to where you are going with this as long as we do, in proceeding with the final design on the new

dam, we allow an option for it to be phased in, which has already been looked at by Schnabel. You're saying either way, right?" Mr. David Thomas responded that his point is that "whether we build it for 30 or build it for 42, in a sense there's no reason to fight about that now if the Black & Veatch dam would be cheaper...because then we're having a fight over where we're going on vacation, when it turns out we're not going on vacation at all." Mayor Norris next stated that he "would totally agree with that, as long as there is again a provision there for phasing in the dam. Now the second piece of that is – before we jump to 30 feet, I think we just need to sit down with DEQ with all the information we now have. It's worth two hours of our time." Councilor Brown then asked – "Who would you propose to do that?" Mayor Norris replied that "we as the four boards can send a delegation to DEQ or invite them to come here and present them all the information we have now after all the studies we've done, which they didn't have when they did this initial report ...let them tell us if 30 feet is the trigger or 13 feet is acceptable." Councilor Szakos then asked if it "would be possible [that] instead of saying '13 or 30,' say the 'minimum allowed by [DEQ] regulations ...'" Referring to the conservation component, Supervisor Rooker next commented that "the existing plan is not based upon meeting minimum DEQ standards." Mr. Gaffney then stated that "... we need to take it to a level that's 20 to 25 years out. Otherwise, it's not substantial enough that DEQ will look at ..." Mayor Norris next commented that he wanted "DEQ to tell us." Councilor Szakos then asked if it would "be good to say, 'the minimum level that would achieve this outcome' – whatever that outcome is.

Supervisor Mallek next commented that "the Moormans is dry today, and the Mechums is a trickle. The longer that we hit all these other stages where we're allowed by some grandfather clause that all of us like to have repealed – that allows this monstrous amount of water to come out of Sugar Hollow. That's really been completely debilitating to that part of the County [and] to the farmers out there 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 ...it's not just saving water to not running your toothbrush with water ... it's really substantial ...if we're talking about completely changing the way we use water, we're going to also face the fact that we have to tell the businesses that they can no longer operate here ... there were businesses that had to be shut down when we did this before. I live in the country and I see that five of my six streams are dry. The first time in 50 years – lot of different weather ... I think we're very quickly going to be to that stage again. I'm thrilled with the amount of progress that we have made today, and I really hope that we don't try to shortcut to the minimum – just enough to scrape by – because we'll be doing a huge disservice to our County rivers, and most of those are the rivers that we're trying to protect in order to protect the reservoir and the watershed. The one thing I was going to throw out earlier and is on my mind is that if we have an insecure water situation in our growth area, the worst possible consequence of that – which is not what we are intending at all – is that people will be frustrated, and they'll just go out to the country and drop a well out there ... number one that is a risky proposition because wells are very fragile also, but it will also completely countermand our growth area where we're trying to provide services to people and protect the watershed, which is primarily for the City."

Councilor Szakos then stated that her suggestion was "not to reduce it. It was to help us move forward ... so that we could agree to a principal by which the amount would be agreed by what it achieves so that we could move forward now ... not wait and come back three months from now and have to do this again." Supervisor Mallek responded that "if we're going for a high standard, I don't think that's a great idea ..."

Councilor Huja next commented that he felt the meeting with DEQ should be held in order to find out the answers to the issues being discussed today. Supervisor Rooker next stated that he “didn’t mind taking two weeks to set up a meeting with DEQ ... I’ve sat through several meetings with DEQ, the Corps, and the other agencies involved, and I think it’s very unlikely that they’re going to say, ‘30-feet is the number or 29 feet is the number or 23 feet is the number.’ I will say that the plan that was approved in 2006, which was four years. We’re now four years later and have taken no steps to implement that plan. [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 were 42 feet for the dam. Now the only difference that I see is we’ve approved some dredging, which may acquire 3% of additional capacity. It’s suggested you can move the dam from 42 feet when it’s shaped like a cone ... you get a whole lot more additional capacity for filled to the top than you do toward the bottom. To suggest that a 13-foot dam without any additional capacity anywhere else in the system is somehow going to satisfy that demand that we determined ... requires a 42-foot dam, seems to me ... extremely optimistic.” Mayor Norris then stated – “that’s DEQ’s own projection ...”

Mr. Gaffney next asked Mr. Frederick for a point of clarification: “What does raising the dam 13 feet, 30 feet, and 42 feet add percentage wise ... we know 42 is 100%, so what is 30 feet [and] 13 feet?” Mr. Frederick then asked if Mr. Gaffney was referring to “storage,” and Mr. Gaffney affirmatively replied. Mr. Frederick next stated that 13 feet is 20%; 30 feet is 61%.

Supervisor Boyd then suggested that “no matter how we get to this other information that we move forward with deciding on what that [cost] allocation is going to be. It’s my understanding that the City doesn’t want to negotiate that until such time as we know what we’re going to do ... whether it’s \$20 million or \$5 million, the percentages are the same ...” Councilor Brown next stated that “he has not heard the City say that, and I’ve been part of that discussion ... whoever told you that – have them come talk to me so I can understand where that came from.” Supervisor Boyd then asked if Councilor Brown was now saying that “you will get your staff to negotiate with the ACSA on that?” Councilor Brown next stated that “I’ve been wondering myself why we don’t have some idea on how we’re going to pay for this.” Supervisor Boyd then commented that he “asked [Ms. Mueller] the question in a Rivanna meeting the other day, and she said that she was waiting on the approval of what plan ... it’s not going to impact the allocation percentages, so let’s go ahead and get that out there.”

Dr. Palmer next stated that she wanted to “say one really quick thing about DEQ and depending on DEQ – thank you [Supervisor Mallek] for saying and [Supervisor Rooker] for saying this is not designed for minimum standards ... what you’re going to get from DEQ is a ruling on the minimum amount you can get by with, and that’s just not the way we designed it. It’s a different way of doing the water supply plan. We’re getting away from a single number going over the dam to a percentage ... that’s one of our biggest problems ... we want to make sure that whatever volume we take – if we’re doing a 30-year or a 25-year ... hoping we’re doing more than the 30 – at least the 30 – it gets us the same amount of stream protection as what we fought hard for to get here on our 2006 ... that’s what we’re saying.” Councilor Huja then stated that what Dr. Palmer was saying was that she wanted to protect the streams and Dr. Palmer agreed with his statement. Councilor Brown added that he felt that “part of the discussion that was missing last night was an informed discussion on ... even the comments that [Dr. Palmer] has made and [Supervisor Mallek] has made about the streams and how important it is to our watershed I don’t think that occupied a whole lot of time at our meeting last night. For me, combining that with looking at this letter from DEQ, which is pretty clear ... I believe ... I’m happy to have us

move forward, but I do think it's important that we stick with what we've been wanting to do because it's had the support of a lot of people in the environmental community for the reason that it is a progressive approach to protecting our streams ... With that in mind, even though I supported 13 feet night, I sort of feel like that was probably not something that would be consistent with another thing in here, which is to commit to adequate flow in the Moormans River or the Rivanna River ... for that means I'm very comfortable with considering 30 feet. I don't want to consider more than that right now, and if there's some way of looking into whether or not we can meet this bullet with less height, I'm very welcome to get that information."

Mayor Norris then asked if the four boards could "agree to meet with DEQ and let them give us guidance so that we're clear on what it is they're willing to allow us." Mr. Gaffney next commented that "it was pretty clear from what [Dr. Palmer] and others have said ... DEQ isn't going to say, 'to meet all of your goals ...'" Mayor Norris then stated that "you said earlier that 30 feet is the only acceptable ..." Mr. Gaffney replied that "I didn't say that," and Mayor Norris clarified that he was referencing a comment made by [Mr. Frederick]. Mr. Gaffney then stated that Mr. Frederick didn't say "the only acceptable ... he said that from what they could put together, that's what made sense for a 20 to 25-year outlook because it doesn't make sense to do it for less than that ... they're not going to look at you and say, '...you're going to do this for 5 years or 10 years,' and you're going to come back and do it for another 5 and 10 [years]." In response to a question by Councilor Huja about the projections, Mr. Gaffney replied that he didn't have the projections and that DEQ would not provide us that information. Mr. Gaffney added that the "reason that I asked [Mr. Frederick] the percentages is because I wanted to show that at 30 feet, it's 60% of the total ... that leaves a lot of leeway if we conserve [and] if we dredge – that we can work to and maybe we don't have to go above 30 feet ... we've saved 40% of that capacity, which is why I think 30 feet makes sense to go forward at this point, and it does allow us to move forward." Dr. Palmer next commented that "30 feet was what it would take to match protection that we have in the present plan – not to meet necessarily ... DEQ's situation – hopefully it would because we're matching what we've got in the plan – but it's to match the same level of protection that we've got in the plan and that was very, very important to us to match that." Mayor Norris then asked "if it was conceivable that we could improve stream flow with less than 30 feet," and Dr. Palmer replied that she didn't know. She added that "I guess we would have to have DEQ to say how we would improve it, but are we willing to take less from an environmental standpoint to protect our streams?" Mayor Norris responded that if "it comes at the benefit of preserving tens of thousands of trees in a couple hundred acres ..." Dr. Palmer then commented that it was "158 acres at this point, which we're going to replant." Mayor Norris then commented that "somebody needs to factor that into the equation. We haven't talked about that today, but there is a tradeoff between protecting the aquatic ecology ... how far you enhance the aquatic ecology at the expense of decimating forest ecology ... so the question is – 'can we improve stream flows at a lesser cost to the forest ecology?' ... at what point does that tradeoff pass muster with DEQ and with our community?" Supervisor Mallek next stated that "you also have to put in the effects on the water quality of the frequent dredging and all that types of things because if we're 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's the construction in multiple phases and the repeated disturbance ..."

Mr. Gaffney next stated that "I think where we were was the first phase being the construction of a 13-foot raise. We were talking about a 30-foot ... I heard from [Councilor Szakos] and [Mayor Norris] that that made some sense to them. [Mayor Norris] – still looking for 13 feet?" Mayor Norris replied – "that was based on a guess about what DEQ would look at. I want to hear that

from DEQ – that’s all. Supervisor Rooker then commented that “again that standard is not the minimum that DEQ looks at” Mayor Norris then asked – “What standard?” Supervisor Rooker further stated – “that’s not only a DEQ issue [but also] modeling that’s done by the engineers ...” Councilor Brown next commented that he thought “as long as we have a representative group go meet with DEQ, we should have a full report on exactly what DEQ says.” Mr. Gaffney then asked – “but are we going to get something like – you go into a restaurant and you say ... ‘I’m here to eat,’ and the chef says, ‘you need 2,000 calories; here’s your 2,000 calories; there’s your basic minimum meat’ ... as opposed to – ‘what would you like off the menu? Do you want lobster or steak or whatever else?’ You want what the community wants ... I think that’s what I’m hearing that DEQ is going to give us is ...your basic needs. What are we going to do with that when we get it? Are we going to say, ‘...let’s double that ...” Councilor Brown next commented that “I would be content if we came back and the answer was that DEQ will only tell us what’s necessary to achieve the minimum requirement, then we could say, ‘...that’s not what we were looking for; that information isn’t going to get us there’ In that case, I think we’re looking at 30 feet, which is a good guess at to what maintains this thing. On the other hand, maybe DEQ comes back and has some more specific type of answer, in which case we have some new information from which to proceed on.” Mayor Norris then reminded that “13 feet plus if we do the restorative dredging is about 40 years of water supply ... nobody’s talking about doing anything to starve Albemarle County of water, period.” Supervisor Boyd then stated that he “wanted to make one thing clear ... I’m not agreeing to the 30 feet. You can walk away from here thinking everyone has agreed with 30 foot. I would agree to a 30-foot pool, but not a 30-foot dam. I’ll just tell you right now –I don’t think that’s the right move. I think its being penny wise [and] a pound foolish, if you want to use that analogy or whatever you want to do ... I just can’t support that. Nobody’s convinced me that makes sense for us to do.”

Mr. Gaffney next asked Mayor Norris that “if we could leave here with everybody’s approval of a 30-foot pool of a 42-foot dam, would you support that?” Mr. Norris responded, ‘No.’ Mr. Colbaugh then inquired –”Can we try and summarize what we’re going to ask Mr. Frederick to try and do? I tried to write that down – We set up a meeting with DEQ and talk about what we would need for a 20-year plan ...20, 25-year plan as an interim. We have a 50-year plan, so we need something that’s operable ...we need to try and establish the answer to the question of 13 or 30.” Mr. Rooker next commented “that’s somewhat dictated by again – they have minimum standards ... if we were to move forward with a 20-year as opposed to the 50-year plan, we’re redoing 2006 and 2008. I hope not because it could take 20 years to implement the plan that we started talking about in 2002...” Mr. Colbaugh then stated that “[Mr. Frederick] needs to set up a meeting with DEQ so that we have the ability to answer the question about whether 13 is even reasonable, and I think that’s something he could do. He could find some representatives to go with him ... talk about in a conversation enough to get a feel for what they’re talking about. I think he ought to come back to the Rivanna Board with a proposal on the Rivanna agenda for design of an earth filled dam to 30 and 42 feet, and I think it would be easy enough to design for 42 and figure out how you’re going to make it 30. That could happen reasonably soon. He ought to convene the dam experts. Have them look at Black & Veatch’s study [and] have them look at what Schnabel thinks ...if there’s a reason to move forward with some of that and [Mr.] Frederick would save \$9 million or whatever it is – we’ll move forward with that ... we need the expert panel first. [Mr. Frederick] ought to do an RFP for dredging of Part I separate from the permit, and it behooves us to get going on a cost sharing agreement so we have some clue as to where we are ... it’s really the City and the County.”

Councilor Huja then commented that he thought Mr. Colbaugh “did a good job in summarizing the questions.” Mr. Colbaugh added – “That’s what he needs to do and what we need to do.”

Mr. Gaffney next stated that it really sounds that we need to reconvene after we get that information.” Mayor Norris next commented that “I agree with the spirit of everything you said. You’re talking about the heights on the new earthen dam – why would you just limit it to 30 and 42. Why not say, ‘phased in with options for phasing in infrastructure’... we don’t want to pre-judge whether or not 13 feet is going to pass...” Mr. Colbaugh then commented that “what we really ought to do is get the proposal to designing for 42 and then we’ll have a clue as to where we are in the process. You can always shave it down and that’s the easy part...you’re not going to get there until you get to 42 – that’s been designed and then you work back from there.”

Mayor Norris next commented that “we were deliberate in saying at least segments 1-3 in dredging the reservoir. I think that should be reflected in your suggestion as well. It doesn’t serve any good to limit it only to segments 1 -3 if the dredging community can show that actually we might be able to dredge other segments cost effectively and produce more water. I don’t know why we would limit it.” Supervisor Mallek added – “and its impacts to the community ...” Mr. David Thomas then stated that “I thought the reason we were limiting to Phase I is that was everybody’s best opinion of the most likely you could break even or come close ... because that was the location of the most useable sand based on the report we were provided, and then segments 4, 5, 6, 7, 8, and 9 were not impossible but less likely so the point where part 1 comes back it’s not cost effective, there’s essentially no chance that parts 2 and 3 would be that way – but if it comes back effective, then we could RFP parts 2 and 3 with some hope that they might also be cost effective.”

Mr. Gaffney then stated that he wanted “to make a point of clarification. That was Item number 2 in this whole agreement. We have not agreed to accept this. We have not agreed to adopt restorative hydraulic dredging on segments 1 and 3. What we did was we accepted the language in here as we reviewed this. So, if this room hasn’t accepted this in its original state or a modified state, then I don’t know that we go forward doing anything on the dredging part at this time.” Supervisor Rooker next commented that he thought “you’d have to have some reasonable definition of what it is you’re putting out for an RFP. You can’t put out an open-ended RFP saying ‘come back and tell us what you’ll do and dredge one or all of these parts of the reservoir.” Mr. Colbaugh then stated – “That’s in the spirit of phasing; we’re phasing the dredging study to just get an idea of what it’s going to take in the beginning’ and then once we know that, then if we need to go further, we can.” Dr. Brown next commented that he “kind of agreed. I think if we get a good RFP for [Segments] 1 -3, then it encourages us to look further.” Mayor Norris then stated that “as long as we’re not precluding that option.” Supervisor Mallek next commented that she understood Mr. Gaffney as saying that it shouldn’t happen until we get agreement of all four boards. Mr. Gaffney responded – Right, because that’s just one part of it all ...”. Supervisor Mallek added that “whereas the other tasks are getting information so that we can agree on all the other ones.” Mayor Norris then stated that “I didn’t hear any opposition to doing an RFP, as long it’s a separate permit process.” Supervisor Rooker then commented that “I don’t mind doing an RFP. I’d like to have an agreement on what we’re doing here by way of the plan before we start peeling off parts of it ... one of us may like it; others may not like it, saying, ‘...we’ll just go ahead with this while we’re still debating the rest of the plan.’”

Mr. Colbaugh next commented that “it’s going to take a while to get answers, and what I’m trying to do is get enough things together so that we get the answers to these things in four to six

months and we'll know some more information." Supervisor Rooker then stated that he felt "we also agree that we're going to be neutral when we're doing this." Supervisor Snow next commented that "... if we're going to make that our priority ... the biggest dam our priority ... do the important things first."

Mayor Norris then stated that "I think [Supervisor Rooker] made an excellent point earlier, which is none of the dredging companies have offered to do it for free – let's be frank – so we shouldn't assume it's going to be revenue..."

Mr. Gaffney next asked if what was coming out of this meeting "is [Mr. Colbaugh's] basic outline ...?" Mr. Boyd next commented that he would like to see that summary published. Mr. Frederick responded 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 read it first to make sure that he was clear as to what was discussed.

Mr. Frederick then read the following: "Set up a meeting with DEQ to get their advice or consent or whatever they'll 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 they 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 – I'm going to look at a couple others as a primary lead on that one – and prepare an RFP for dredging Part 1 that may include an opportunity for proposers to move forward on [Segments] 4 and 5."

Dr. Palmer then asked – "Are we preparing the RFP now? I thought there was some question about ..." Supervisor Mallek added that "we might gain some useful information ... it might inform the other parts of it ..." Mr. Colbaugh then commented that "it's not going to happen quickly."

Supervisor Boyd then asked if what you're proposing is to have all this ready to come back to the Rivanna Board meeting next week? Doesn't this have to be approved by the Rivanna Board?" Mr. Gaffney replied that it would need to be approved before RWSA takes action on these items. Mr. Frederick stated that "we'll start on it before the next meeting."

2.0 Adjournment

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

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

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

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

Respectfully submitted,

Mr. Robert W. Tucker, Jr.
Secretary - Treasurer

**A RESOLUTION
APPROVING A LOCAL WATER SUPPLY PLAN
FOR THE CITY OF CHARLOTTESVILLE**

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 provided 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.

Approved by Council
September 20, 2010

Clerk of Council

	Preliminary Opinion of Probable Construction Cost	Low End of Probable Construction Cost Range	High End of Probable Construction Cost Range	Cost as % of Full Height, Single Phase	Added Storage as % of Full Ht
Preliminary Design - Full Height, Single Phase	22,540,000	20,280,000	27,050,000	100%	100%
Option 1 - Raise 13 Ft Dam and Foundation Only	15,400,000	13,090,000	20,030,000	68%	20%
Option 2 - Build Earthen Dam in Phases					
Phase 1 - Structure to 13 Ft, Interim Spillway	22,260,000	18,920,000	28,930,000	99%	20%
Phase 2 - Structure to Full Height	3,500,000	2,980,000	4,550,000	16%	80%
Option 3 - Build Entire Structure; Phase Pool Height	25,760,000	21,900,000	33,480,000	115%	100%
Phase 1 - Pool Raise 13 Ft	22,170,000	18,830,000	28,810,000	98%	20%
Phase 2 - Pool Raise Full Height	640,000	540,000	830,000	3%	80%
	22,810,000	19,370,000	29,640,000	101%	100%

Sources:

Preliminary Design Estimates from Appendix D, Preliminary Design Report: New Ragged Mountain Dam, Schnabel Engineering, May 14, 2010
Phasing Costs for Options 1, 2, and 3 from Appendix, Earthen Dam Phased Construction Assessment Report: New Ragged Mountain Dam, Schnabel Engineering, July 19, 2010