

<p style="text-align: center;">1</p> <p style="text-align: center;">JOINT SAVANNAH RIVER COMMITTEE MEETING</p> <p>IN THE MATTER OF:</p> <p>Salt Water Intrusion Savannah Harbor Dissolved Oxygen Standard Savannah River Basin Drought Issues General Discussion on Georgia and South Carolina Watershed Planning/Surface Water Allocation ~~~~~</p> <p style="text-align: center;">COMMITTEE MEETING</p> <p style="text-align: center;">March 24, 2008 10:00 a.m.</p> <p style="text-align: center;">Peter S. Knox Conference Center 326 Greene Street Augusta, Georgia</p> <p style="text-align: center;">Annie O'Hara, CCR-B-2340</p>	<p style="text-align: center;">3</p> <p>1 Academy.</p> <p>2 MS. TAYLOR: Mullen Taylor, counsel to</p> <p>3 this committee.</p> <p>4 MR. STALLWORTH: Hank Stallworth, staff of</p> <p>5 DNR.</p> <p>6 MR. KISNER: Steven Kisner. I serve on</p> <p>7 the board for the South Carolina Department of</p> <p>8 Health and Environmental Control.</p> <p>9 MR. McSHANE: Michael McShane, current</p> <p>10 chairman of the South Carolina DNR board.</p> <p>11 MR. WALDREP: Bob Waldrep. I'm a citizen</p> <p>12 member of this board from Anderson.</p> <p>13 MR. MOSS: Dean Moss, citizen member of</p> <p>14 this board. I'm from the Beaufort Jasper Water</p> <p>15 and Sewer Authority in Beaufort, South Carolina.</p> <p>16 MS. COUCH: Gus Bell, who will be here</p> <p>17 momentarily, is also a citizen member from the</p> <p>18 Georgia -- for the Georgia team and, of course,</p> <p>19 he's from Savannah.</p> <p>20 Yolanda Fanning has been working with the</p> <p>21 logistics for this meeting, and we have a number</p> <p>22 of members of Georgia EPD staff who are here</p> <p>23 today that have been working together with South</p> <p>24 Carolina DHAC and/or DNR staff.</p> <p>25 Let me just introduce them: Jim Kennedy,</p>
<p style="text-align: center;">2</p> <p>1 JOINT SAVANNAH RIVER COMMITTEE MEETING</p> <p>2 March 24, 2008</p> <p>3</p> <p>4 MS. COUCH: Good morning. We have one</p> <p>5 member still en route, Gus Bell, who will be</p> <p>6 here momentarily. Let's go ahead and convene</p> <p>7 our meeting. I think in front of you is the</p> <p>8 proposed agenda for the day.</p> <p>9 Does everybody have a copy of that.</p> <p>10 FROM THE FLOOR: Yes.</p> <p>11 MS. COUCH: Before we take a look at the</p> <p>12 agenda, let's, of course, go through and offer a</p> <p>13 round of introductions. And I'll just ask Jud</p> <p>14 Turner, to my left, to introduce himself.</p> <p>15 MR. TURNER: Jud Turner. I'm counsel to</p> <p>16 Governor Purdue.</p> <p>17 MS. COUCH: Carol Couch, director of the</p> <p>18 Georgia Environmental Protection Agency.</p> <p>19 MR. TANNER: I'm Joe Tanner. I am a</p> <p>20 citizen member.</p> <p>21 MR. HOLCOMB: Noel Holcomb, commissioner</p> <p>22 of Georgia DNR.</p> <p>23 MR. BOARDMAN: Braye Boardman, citizen</p> <p>24 member and member of Nature Conservancy of</p> <p>25 Georgia and Southeastern Natural Sciences</p>	<p style="text-align: center;">4</p> <p>1 who is the state geologist. Elizabeth Booth.</p> <p>2 Elizabeth is head of our water quality program</p> <p>3 of the state. And is that all the staff? Of</p> <p>4 course, Jeff. I didn't see you hiding back</p> <p>5 there.</p> <p>6 Jeff Larson. Jeff has an important role</p> <p>7 for us within EPD as the branch chief whose sole</p> <p>8 focus is on matters of the Savannah River basin.</p> <p>9 Senator Waldrep, are there any other</p> <p>10 introductions you would like to make?</p> <p>11 MR. EVANS: Justin Evans from the</p> <p>12 governor's office.</p> <p>13 MR. WALDREP: Our staff.</p> <p>14 MR. KOZLOWSKI: Steve Kozlowski,</p> <p>15 Department of Natural Resources.</p> <p>16 MR. BAIZE: David Baize with DHAC.</p> <p>17 MS. CANDY: Chiles Candy with the attorney</p> <p>18 general's office.</p> <p>19 MR. WILSON: David Wilson with DHAC.</p> <p>20 MR. BENNET: Amy Bennet with DHAC.</p> <p>21 MS. COUCH: Good morning to everyone. The</p> <p>22 agenda that you have before you had been shared</p> <p>23 back and forth for comment and development, and</p> <p>24 Georgia has now additional suggestions for</p> <p>25 altering this agenda or format.</p>

<p style="text-align: center;">5</p> <p>1 Senator, is the agenda acceptable to South 2 Carolina?</p> <p>3 MR. WALDREP: The agenda looks 4 appropriate. Thank you.</p> <p>5 MS. COUCH: If there are no other 6 introductory comments or remarks, I would 7 suggest that we move into the first presentation 8 of our technical team. This first presentation 9 is to update our committee on the ongoing 10 development of the salt water intrusion 11 technical work, and it will be a presentation 12 that has been coordinated by David Baize and Jim 13 Kennedy of Georgia EPD.</p> <p>14 Let me just turn it over to these 15 gentleman.</p> <p>16 MR. BAIZE: We want to give everybody a 17 very quick update on what our group has been 18 working on via the salt water intrusion issues. 19 Jim will take the first part and I'll take the 20 second part and be very brief.</p> <p>21 MR. KENNEDY: Thank you. Glad to be here. 22 Glad to present.</p> <p>23 At our last meeting that we had together 24 we presented similar slides. Now we have made 25 progress on the next steps under -- specifically</p>	<p style="text-align: center;">7</p> <p>1 retired USGS person, and Mr. Drenen Park from 2 South Carolina DNR, and then Dr. Lenny Conocow 3 from the USGS.</p> <p>4 We have been working together. As a 5 matter of fact, we met a couple of weeks ago and 6 had our first meeting. It went from 9:00 a.m. 7 to 3:30 in the afternoon. It was with no break 8 for lunch. It was a very detailed meeting, 9 where we went through and we considered the 10 model refinement and everything.</p> <p>11 We made specific recommendations to test 12 model refinement. This is a -- I won't go into 13 the technology of it. I'll be glad to answer 14 any questions that you have.</p> <p>15 But Dr. Maloney, Mr. Fay, Mr. Park had 16 specific recommendations of the direction they 17 wanted the USGS to go in to make sure that the 18 model was sufficiently refined. And David puts 19 it very well. It's a two-step dance. We want 20 to refine the model to acceptability of the 21 members and to the Savannah River Committee, of 22 course and once it is refined to use it for 23 simulating the management scenarios.</p> <p>24 We went through a detailed menu of things 25 to look at model refinement. And we actually</p>
<p style="text-align: center;">6</p> <p>1 to the items in the memorandum of agreement that 2 was signed on October 16th of last year.</p> <p>3 That required that the work on -- 4 specifically speak to refinement of the Coastal 5 Towns Science Initiative Model that the U.S. 6 Geological Survey is doing.</p> <p>7 And the MOA called for this refinement to 8 be done in accordance with a work plan 9 acceptable to EPD and DHAC and with 10 participation of the USGS. We, in fact, 11 finalized that work plan, and it's called the 12 guidelines. That's our working document that 13 we're all working from. So that's a good check 14 in the box right there.</p> <p>15 The second thing that the MOA called for 16 was a technical advisory committee to consist of 17 members representing Georgia, representing South 18 Carolina, with members from the U.S. Geological 19 Survey, to actually work with the USGS modeling 20 team to work on the model refinement and deal 21 with the very technical -- specific technical 22 issues which I won't go through.</p> <p>23 But the technical advisory committee has 24 been formed. It consists of myself Dr. Mark 25 Maloney from Georgia, from Mr. Robert Fay, a</p>	<p style="text-align: center;">8</p> <p>1 identified a couple of items. That may push our 2 schedule back a little bit. That's still in 3 play during this month. We are still looking at 4 this and the USGS is looking at that. The tack 5 is going to meet in another month or so to 6 consider what the USGS has done for the 7 refinement. And if, in fact, at that time the 8 model is considered to be sufficiently refined, 9 then the tack is going to start the aspect of 10 picking particular scenarios to simulate the 11 management of the aquifer system.</p> <p>12 MR. BAIZE: The other study ongoing is the 13 vertical movement or downward movement of salt 14 into the aquifer in question. That tack 15 committee is also in place, and they met at the 16 end of last year. It's a little larger group, 17 but some of the same players are involved as in 18 the other study.</p> <p>19 And what they really discussed at that 20 meeting were drilling locations, laboratory 21 analysis of the material, how to do that, design 22 of the model. There will be some additional 23 modeling done there. The contracts between the 24 parties -- and those principal parties involved 25 in the investigation are Beaufort Jasper Water</p>

<p style="text-align: center;">9</p> <p>1 Sewer Authority, City of Savannah, DNR, DHAC, 2 and USGS Columbia office. There will be some 3 subcontracts for the drillers and that sort of 4 thing, of course. We anticipate the field work 5 to begin in late spring. We still need to 6 finalize the drilling contracts and get some of 7 those details. Both efforts are progressing as 8 well as can be expected, never rapidly enough. 9 We all hit delays, even in the best-laid plans 10 than we would like. 11 But I think they're both sufficiently 12 headed in the right direction. I think we're 13 pleased with the formation of the tack, and we 14 think the right members are in place to provide 15 that very important independent peer review of 16 the modeling effort. I think both efforts are 17 moving on nicely. 18 MR. KENNEDY: If I may add, I think 19 there's enough overlap on the technical advisory 20 committees that the two models can speak to each 21 other very well. Drennan Park is on both tacks. 22 I'm on both tacks. David is informed every step 23 that we take. I think we have good 24 communication between the models going on. 25 MR. BAIZE: Any questions?</p>	<p style="text-align: center;">11</p> <p>1 will come out of the chute very much at the same 2 time. I think you need to weigh both of them 3 together, because the immediacy of one may 4 outweigh the other. In other words, if the 5 vertical study shows that that mechanism is not 6 only very real and documented, but the 7 additional modeling then those what threats 8 there are to the water supply wells that are 9 there -- that's an extra concern or an extra 10 worry above and beyond the salt water intrusion 11 that's happening on Hilton Head. You have to 12 look at both conjunctively to make an overall 13 management decision. That's why we want to tie 14 the time frames together. 15 MR. KENNEDY: I'm thinking out loud here. 16 After August here if we present certain 17 management simulations that the Savannah River 18 committee would like additional scenarios 19 simulated -- I'm sure once the model is refined 20 it's available to do that. Part of this process 21 -- I'm sure by August we'll have a certain 22 finite set. We can go beyond that and look at 23 other combinations. 24 MR. WALDREP: When you talk about 25 simulation, can this be transferred into a</p>
<p style="text-align: center;">10</p> <p>1 MR. MOSS: Take us, if you will, past 2 August. Let's assume that the schedule on the 3 mulling stretches out to August, what will be 4 the output -- what product would we have in 5 August, and then do we progress from that to the 6 next stages of considering what changes in the 7 way we are using that aquifer might need to 8 occur in order to respond to the model. 9 MR. KENNEDY: By August what we will have 10 done is we will have actually identified 11 specific management scenarios and run computer 12 simulations of those scenarios to see what the 13 various effects were. 14 Beyond that I'm not really sure -- 15 MR. BAIZE: We might explain the scenarios 16 that would be run would be to test, I guess, 17 what effects pumping in each areas have and that 18 sort of thing. That is what you would 19 ultimately want to come out with, is the 20 relative effects and understanding what pumping 21 is doing in each area. From then, of course -- 22 MR. MOSS: You throw it back to us. 23 MR. BAIZE: Yeah. We throw it back. A 24 decision has to be made. The vertical study is 25 the same way. Hopefully, the vertical study</p>	<p style="text-align: center;">12</p> <p>1 visual kind of situation on a computer so that 2 people will be able to see it visually? 3 MR. KENNEDY: The graphics will be 4 presented at such. Yeah. The operation of the 5 model -- it is a very complex and detailed 6 computer code. It would not be in a position 7 where -- I can't operate it myself. Dr. Gone, 8 who is the computer expert at DNR in South 9 Carolina, can't operate it. So we can 10 pre-introduce the graphics, the output from the 11 model in a computer visual form. 12 MR. WALDREP: I guess what I'm searching 13 for is something that is intelligible to the 14 average person, they can look at this and 15 comprehend it in some way. 16 MR. BAIZE: In the last output there were 17 maps generated that showed the effects of 18 pumping on the levels of salt. I think that can 19 be done. 20 MR. KENNEDY: Yes. 21 MR. BAIZE: I will re-emphasize what Jim 22 said about this being a two-step process in the 23 refinement. The very first hurdle is to make 24 sure the model is working to the satisfaction of 25 everyone. We may not -- hopefully this won't</p>

<p style="text-align: center;">13</p> <p>1 happen but I think we can envision a 2 recommendation possibly that the model is not 3 sufficiently calibrated to even get to that 4 scenario step; but that hopefully will be done. 5 MR. WALDREP: I hope that's an overall 6 objective, the average man can put -- 7 Last question: You talk about salt water 8 intrusion. Lake levels -- this might not be a 9 very intelligible question, but lake levels, are 10 we talking about that as a horizontal factor? 11 Is salt water intrusion coming down the river -- 12 well, the flow of the river. 13 MR. KENNEDY: The river stage in this 14 particular model is not -- that's not really a 15 player, so to say. What we're looking at is the 16 geology of the upper flow and the aquifer, the 17 interaction, the breaching of the confining 18 until that have separated the sound from the 19 upper Florida aquifer and how the pumping is 20 changing the hydraulic radiance. The lake 21 levels and the stage in the Savannah River is 22 not a player in that particular aspect. 23 MR. McSHANE: You're thinking of the salt 24 water intrusion up the river? 25 MR. WALDREP: Yes.</p>	<p style="text-align: center;">15</p> <p>1 and make recommendations. I'm glad to see 2 you're coming together like that. 3 Is there anything on this finalizing -- 4 that's a matter of procurement drilling? 5 MR. BAIZE: It's a matter of procurement. 6 We set up contracts to funnel the money through 7 this committee, and they'll sub out the drilling 8 and get that part going. 9 MR. MOSS: I get to be the banker on this 10 deal. 11 MR. BAIZE: I will mention that's being 12 funded -- \$500,000 was given by the South 13 Carolina legislature for this effort. That's 14 where the funding is coming from. 15 MS. COUCH: Thank you. 16 Another area that our state agencies and 17 individuals have been working on, of course, is 18 the important matter of the development of the 19 dissolved oxygen standard for the Savannah 20 Harbor. The presentation will be by 21 Dr. Elizabeth Booth. I guess at the outset are 22 you going to be doing the front end of this and 23 Amy Bennett from DHAC. 24 MS. BOOTH: Good morning. My name is 25 Elizabeth Booth, and I'm the manager of the</p>
<p style="text-align: center;">14</p> <p>1 MR. MOSS: We'll get to that in number 3. 2 MR. WALDREP: You called that horizontal. 3 I'm referring to this as vertical. 4 MR. KENNEDY: This is purely the ground 5 water. 6 MS. COUCH: As opposed to the title wedge. 7 MR. McSHANE: Jim, you mentioned that when 8 y'all meet in a month or so, then you'll be able 9 to determine whether it's going to be put off 10 until August? When will you know that it may 11 take to August by your meeting? 12 MR. KENNEDY: I am putting on my project 13 manager hat: Planning for the worst; hope for 14 the best. The USGS is working this month. The 15 tack members are working amongst each other to 16 answer the specific questions we asked a few 17 weeks ago during the first tack meeting. 18 Hopefully, we will get there faster; and once we 19 get there, then we will be able to design these 20 management scenario simulations. 21 MR. McSHANE: David, in -- I think this 22 committee and I think we have had -- to bring 23 the two issues together is going to make it a 24 much more effective information for this 25 committee to go back to their respective parties</p>	<p style="text-align: center;">16</p> <p>1 watershed planning and monitoring program, the 2 watershed protection grant of the Georgia 3 Environmental Protection division. This morning 4 I'm going to go over a brief presentation on the 5 proposed dissolved oxygen standard of the 6 Savannah Harbor. 7 The segment of the Savannah Harbor we're 8 considering is from the seaboard coastal 9 railroad at river mile 24.7 to Fort Polaski at 10 river mile 0. It's designated as coastal 11 fishing. It is coastal water that includes an 12 estuary, and the river is tidally influenced 13 where salt water mixes with fresh water; and the 14 villosity in the system goes to 0 during changes 15 in the tide direction. 16 This phenomena can lead to deals that 17 naturally lower the fresh water fishing standard 18 of a daily average of, five never less than 19 four. The Georgia Environmental Protection 20 Division in consultation with South Carolina and 21 the U.S. EPA has been working on this for over a 22 year. 23 We have reviewed several potential 24 dissolved oxygen standards for the harbor. Two 25 of the potential standards are South Carolina's</p>

<p style="text-align: center;">17</p> <p>1 existing modified fresh water standard, and the 2 modified Virginia province standard. Both of 3 these were examined in detail.</p> <p>4 Both of these standards allow for a tenth 5 of a milligram per liter deal deficit from 6 natural conditions. EPD has used water quality 7 modeling to predict dissolved oxygen 8 concentration for natural by conditions. The 9 natural conditions models representing the 10 harbor are with and without the dredging.</p> <p>11 The undredged channel used the 1854 harbor 12 bathymetry, 1931 flows that did not have the 13 upstream dams, and included downstream marshes 14 that were not included in the model that was 15 used to develop the TMDL that allows for a waste 16 load allocation of 0.</p> <p>17 Historically the areas were not actually 18 marshes but their swamps. Please note the 19 colors in this figure that indicate the extent 20 of the salt water marsh. This is 1854 21 bathymetry. The salt water marsh is the red. 22 The brackish marsh is the orange and the fresh 23 water marsh is the blue.</p> <p>24 The next slide shows the 1999 marshes 25 where you can see the salt water intrusion</p>	<p style="text-align: center;">19</p> <p>1 MS. BOOTH: 24.7. 2 MR. MOSS: It goes from 0 to 24.7. 3 MS. BOOTH: The model extends beyond that 4 up to Clyo where there's a USGS gauge that was 5 used as a boundary condition.</p> <p>6 The dredge channel was used for the 7 current harbor configuration. We used the 1999 8 flows and the current marsh loads and no point 9 sources. Both the dredged and the undredged 10 model were run using the 1999 meteorological 11 conditions.</p> <p>12 1999 was a year where we did intensive 13 field surveys. That's the date we're going to 14 calibrate our models to. Please note that the 15 area just north of the lower section of the 16 harbor is the dredge spoil area, and, therefore, 17 is not included as a marsh.</p> <p>18 These models were developed using a Z grid 19 rather than the Cigna grid used in the original 20 TMDL. The Z grid allows for a different number 21 of layers to be used in the model, and thus 22 eliminated a compression issue that we with the 23 original Cigna model required that we had six 24 layers throughout the system. In the channel 25 those layers eight-foot deep, because we used</p>
<p style="text-align: center;">18</p> <p>1 further up in the harbor.</p> <p>2 MS. COUCH: Could you flip back and forth. 3 MS. BOOTH: Sure.</p> <p>4 MR. HOLCOMB: Is the yellow hatching -- 5 MS. BOOTH: The yellow hatching is the 6 grid. It's the model grid that we use. It's 7 overlaid on top of the harbor itself.</p> <p>8 MR. HOLCOMB: It looked like it changed. 9 MS. BOOTH: It does actually change. In 10 the 1854 it's much wider. We found a historic 11 map. It's much wider and shallower between the 12 two grids.</p> <p>13 MR. KISNER: What is the approximate 14 distance from one point to the next? 15 MS. BOOTH: The study go from Clyo. It's 16 a 60-mile section from the ocean. It goes a 17 couple miles out into the ocean.</p> <p>18 MR. KISNER: From the two points you 19 identified it's about 60 miles, in your opening 20 statement? 21 MS. BOOTH: This model extends beyond the 22 coastal fishing zone that we're talking about up 23 to Clyo, where there's a USGS gauge. 24 MR. MOSS: What is the mile post at the 25 coastline bridge.</p>	<p style="text-align: center;">20</p> <p>1 the 42-foot depth. But in the back and middle 2 rivers where it's only about three-feet deep, we 3 had a compression of about six inches.</p> <p>4 We had to recalibrate that model. This is 5 an example of the calibration data. The Z grid 6 also allowed us to run the models much faster. 7 It took about four days to run the original 8 model. This one takes about four hours.</p> <p>9 The model results for the natural 10 conditions representing the harbor with and 11 without the dredge were analyzed. This is a DO 12 profile along the river of both those 13 conditions. We didn't know what the SOD are. 14 We ran two SODs.</p> <p>15 MS. COUCH: Say what a SOD is. 16 MS. BOOTH: SOD is segment oxygen demand, 17 the amount of organic matter in the bottom of 18 the channel that sucks up oxygen. We didn't 19 know what that was, because we weren't here in 20 1854. We ran two values for that. This is a DO 21 profile of the river. It's a slice of the river 22 on a critical day of August 12th, meteorological 23 conditions of 1999.</p> <p>24 This shows that the DO for both the 25 historic channel and the current bathymetry show</p>

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<p>1 about the same magnitude and drop in DO. The</p> <p>2 effects of the dredge can be seen in the spacial</p> <p>3 extent. The lower DOs are seen in the blue</p> <p>4 figure, which is the existing channel. It's</p> <p>5 around mile marker 6 that we have the lowest DO</p> <p>6 shown in both models.</p> <p>7 MR. HOLCOMB: Where would mile marker six</p> <p>8 be in relation to Savannah?</p> <p>9 MS. BOOTH: It's south of Savannah. Hold</p> <p>10 on. We have a figure of it.</p> <p>11 It was concluded for purposes of</p> <p>12 developing the DO water quality standard at that</p> <p>13 two natural conditions were similar, and that</p> <p>14 the existing dredged harbor natural condition</p> <p>15 without the effects of point sources could be</p> <p>16 used for developing the standard.</p> <p>17 The fresh water fishing standard is five,</p> <p>18 never less than four. We see during the periods</p> <p>19 of June through October we have DOs less than</p> <p>20 that standard at this location. The next slide</p> <p>21 shows the various layers of where that critical</p> <p>22 cell is. It's below Savannah, below Elbus</p> <p>23 Island (ph) which is where the bend is.</p> <p>24 MR. MOSS: And which is where the South</p> <p>25 Carolina/Georgia joint port site is, which</p>	<p>1 liter. One thing we should note is that the</p> <p>2 Virginia province standard is not protective of</p> <p>3 the upper reaches of the harbor where it's fresh</p> <p>4 water. In addition, it has to be protective of</p> <p>5 the existing biological communities and will</p> <p>6 allow a 10th-of-a-milligram-per-liter deficit in</p> <p>7 the lower portions of the harbor which we will</p> <p>8 discuss in a moment.</p> <p>9 The standard selected has to be</p> <p>10 scientifically, defensible, which it is because</p> <p>11 of the model we developed. It has to be</p> <p>12 protective of the aquatic life and comparable to</p> <p>13 existing guidance. The aquatic life we're</p> <p>14 concerned with are the American shad, the</p> <p>15 striped bass, and the short-nosed sturgeons,</p> <p>16 which is an endangered species.</p> <p>17 EPA recruitment model developed for the</p> <p>18 Chesapeake Model was examined. The Savannah</p> <p>19 Harbor model has all but two of the species used</p> <p>20 in that bay recruitment model and those are the</p> <p>21 lobster and the rock crab. But they are</p> <p>22 represented by the mud crab, so we didn't have</p> <p>23 to include additional species.</p> <p>24 The final recruitment model for the 30-day</p> <p>25 DO is 4.5 milligrams per liter. The natural DO</p>
<p>1 is right across from Elbus Island.</p> <p>2 MS. BOOTH: This is just south of that.</p> <p>3 The results from the model runs were</p> <p>4 compared to the Virginia province standard,</p> <p>5 which are shown in this table. On the top line</p> <p>6 it shows the Virginia province. The Virginia</p> <p>7 province is set up to be protective of</p> <p>8 biological conditions and have various DO levels</p> <p>9 allowed for a certain length of time. A one-day</p> <p>10 standard 2.3 milligrams per liter. A seven day</p> <p>11 you must have a minimum of 3.8 milligrams per</p> <p>12 liter. A 30 day you must have 4.8.</p> <p>13 This shows the results of this 1854</p> <p>14 bathymetry with the various SODs and the</p> <p>15 existing 1999 with no point sources. We meet</p> <p>16 the one day and the seven day. This is only the</p> <p>17 surface layer. We meet the one day and the</p> <p>18 seven day in both of those conditions, but we</p> <p>19 don't meet -- the 30-day natural standard is</p> <p>20 less than the 4.8.</p> <p>21 We would have to use a modified Virginia</p> <p>22 province standard. However, we would have to do</p> <p>23 this for various layers since, the Virginia</p> <p>24 standard applies except for the deep channel,</p> <p>25 which allows for a DO of 1.5 milligrams per</p>	<p>1 for the harbor is less than this. Based on the</p> <p>2 critical species, the striped bass seems to be</p> <p>3 the limiting species allowing a minimum DO of</p> <p>4 3.23 milligrams per liter which is approximately</p> <p>5 the natural DO.</p> <p>6 It should be noted that the striped bass</p> <p>7 is generally not found in the system during this</p> <p>8 period of time. They tend to migrate upstream.</p> <p>9 We have to represent them in the recruitment</p> <p>10 model as a spiny fish. They are found in the</p> <p>11 top layer. We would only be allowed a .1</p> <p>12 milligram per liter deficit.</p> <p>13 The other major species of concern is the</p> <p>14 short-nosed sturgeon. The sturgeon is a bottom</p> <p>15 dweller that spawns upstream during the spring</p> <p>16 and feeds at the feeding ground at the fresh</p> <p>17 water/salt water boundary.</p> <p>18 Mark Collins did a study of the movement</p> <p>19 and habit of the sturgeon in 1999 and 2000.</p> <p>20 This figure shows the spacial extent where he</p> <p>21 found the fish. In 1999, which was a very hot</p> <p>22 summer, the sturgeon were found upstream at</p> <p>23 river mile 22.5 to 29.5. In 2000, which was</p> <p>24 cooler the sturgeons were found down to river</p> <p>25 mile 19.4, which is just above the turning</p>
22	24

<p style="text-align: center;">25</p> <p>1 basin.</p> <p>2 Jud Campbell and Larry Goodman conducted</p> <p>3 acute toxicity studies for the short-nosed</p> <p>4 sturgeon that were collected from the Savannah</p> <p>5 Harbor. The findings are shown on this table.</p> <p>6 They found that under non-stressful temperatures</p> <p>7 that the 24 LC 50 was 2.2. This is the</p> <p>8 dissolved oxygen concentration at which half the</p> <p>9 population died within 24 hours. They typically</p> <p>10 died within the first two to four hours.</p> <p>11 Under stressful temperatures that 24 LC 50</p> <p>12 is 3.1. Using the ratio of the LC-5, which is</p> <p>13 the population -- the concentration which kills</p> <p>14 5 percent of the population and the LC 50 which</p> <p>15 is 1.3, we find that the DO -- acute DO criteria</p> <p>16 can be developed that are protective of the</p> <p>17 short-nosed sturgeon. Under stressful and</p> <p>18 unstressful temperatures. They need to be 3.1</p> <p>19 milligrams per liter under unstressful</p> <p>20 temperatures and 4.0 under stressful</p> <p>21 temperatures.</p> <p>22 This slide shows the profile of the river</p> <p>23 with the DO in the bottom layer on the critical</p> <p>24 day in August, and the DO in the bottom layer is</p> <p>25 above 4 milligrams per liter at approximately</p>	<p style="text-align: center;">27</p> <p>1 for the same body. It allows for spacial</p> <p>2 flexibility in the upper portions of the</p> <p>3 Savannah Harbor, which are fresh water. The</p> <p>4 fresh water fishing standard would apply. In</p> <p>5 the lower portions of the river where it's</p> <p>6 estuaries the natural DO standard could apply.</p> <p>7 The schedule for adopting the Savannah</p> <p>8 Harbor DO standard is as follows: We have had</p> <p>9 discussions and proposed the standard with the</p> <p>10 fishery folks from Georgia, both wildlife</p> <p>11 resource division and the coastal resource</p> <p>12 division.</p> <p>13 In February and March we held meetings</p> <p>14 with various group organizations. We will have</p> <p>15 two public meetings in April to present the</p> <p>16 proposed standard to the public, one in Augusta</p> <p>17 and one in Savannah. And June the EPD will</p> <p>18 brief to the DNR board on the proposed Savannah</p> <p>19 Harbor dissolved oxygen standard. The standard</p> <p>20 will be public notice for 45 days. Two public</p> <p>21 hearings will be held in August of 2008 and the</p> <p>22 board will consider final action on the adoption</p> <p>23 of the standard in September.</p> <p>24 Any questions? This is the model that's</p> <p>25 used to determine your -- what did you call it?</p>
<p style="text-align: center;">26</p> <p>1 river mile 20.4.</p> <p>2 MS. COUCH: How deep is the bottom layer?</p> <p>3 MS. BOOTH: The harbor -- it's 42 feet in</p> <p>4 the dredge.</p> <p>5 This is the DO with the various layers at</p> <p>6 that river mile 20.5. You can see there's two</p> <p>7 days we have DOs that are critical. We think we</p> <p>8 can be protective of the sturgeon in that</p> <p>9 feeding area. The proposed dissolved oxygen</p> <p>10 standard is the current South Carolina DO's</p> <p>11 criteria, a daily average of 5.0 milligrams per</p> <p>12 liter, not less than four. However if it's</p> <p>13 determined that the natural DO in the water body</p> <p>14 is less than stated above, the criteria would</p> <p>15 revert to the natural DO and water standard</p> <p>16 would allow for up to a 10th of a milligram per</p> <p>17 liter deficit from natural.</p> <p>18 If it can be shown that it's demonstrated</p> <p>19 that the resident aquatic species are not</p> <p>20 adversely affected, we would allow up to a 10</p> <p>21 percent deficit. However, we have done those</p> <p>22 studies to show we can only allow a 10 percent</p> <p>23 deficit.</p> <p>24 This standard allows Georgia and South</p> <p>25 Carolina to have the same water quality standard</p>	<p style="text-align: center;">28</p> <p>1 Horizontal salt water? This is the model that's</p> <p>2 used for that.</p> <p>3 MR. MOSS: When you present to the DNR</p> <p>4 board, will there be a kind of an evaluation of</p> <p>5 the impact of this standard on the dischargers</p> <p>6 in the lower basin? I'm presuming that</p> <p>7 effectively we're going to see the same</p> <p>8 phenomena probably applied in the EPA TMBL,</p> <p>9 which was the impact was felt by NPDS</p> <p>10 dischargers all the way up to Augusta.</p> <p>11 MS. BOOTH: We are not going to be</p> <p>12 proposing the TMBL.</p> <p>13 MR. MOSS: I understand that.</p> <p>14 MS. BOOTH: The TMBL development will be</p> <p>15 ongoing on at the same time so we will know the</p> <p>16 impacts.</p> <p>17 MR. MOSS: This is the decision that has</p> <p>18 the impact.</p> <p>19 MS. COUCH: Let me address that, if I</p> <p>20 could. We need to propose the standard. The</p> <p>21 standard will be protective of the environment.</p> <p>22 That standard is being done independently of the</p> <p>23 economic assessment.</p> <p>24 The economic assessment, of course, comes</p> <p>25 in through the TMBL. As you very well know, the</p>

<p style="text-align: center;">29</p> <p>1 development of standards are done in a manner 2 that have to be scientifically defensible for 3 the protection of aquatic fisheries.</p> <p>4 MR. MOSS: I understand. I wanted to get 5 it into the record.</p> <p>6 MR. TANNER: Can we get a copy of that 7 presentation?</p> <p>8 MS. BOOTH: Sure. There's a website that 9 have both the model and the presentations. It's 10 ftp:planetwater.com. The user name is Savannah 11 and the password is S-A-V-H-A-R-B-O-R-T-M-D-L 12 all pushed together and everything is lower 13 case.</p> <p>14 MS. COUCH: Thank you.</p> <p>15 MS. BENNETT: I'm Amy Bennett with South 16 Carolina DHAC. I'm the water quality standards 17 coordinator for the State of South Carolina. 18 And I just wanted to say that we have been 19 involved with the Georgia EPD and the EPA 20 throughout 2007, as they have used applied 21 scientific knowledge to come to the proposed 22 standard which currently mirrors South 23 Carolina's standard.</p> <p>24 Our standard has been in place as it is 25 currently worded since 1990. This was an</p>	<p style="text-align: center;">31</p> <p>1 already changed rules. Industries will be able 2 to apply for a variance. That's a step-wise 3 process to ultimately get to the standard. So 4 that is -- if you want to look at that as a 5 hurdle, that's an application process that we 6 put in for; and South Carolina already has that 7 process. Georgia has, again, the rule and in a 8 variance -- well, they could apply for a 9 variance now if they wanted to. But we will 10 have the procedures in lockstep with EPA rules 11 soon. But that is one aspect of this, to get 12 back at what Dean was talking about. That is 13 industries and municipalities.</p> <p>14 MR. KISNER: How about from the public 15 side?</p> <p>16 MR. LARSON: Other than understanding the 17 standard -- we have vetted it to the public. We 18 have brought -- we went out to the businesses. 19 We went out through public meetings. But this 20 is generally a standard that is going into the 21 industry and the municipalities for their 22 existing facilities to have to meet this new 23 standard.</p> <p>24 I'd say the environmental groups were 25 interested in it. A couple of days ago we did</p>
<p style="text-align: center;">30</p> <p>1 EPA-approved standard, and our scientists and 2 modelers and engineers and management have 3 worked closely with Georgia as they follow the 4 process and have come to the proposed standard, 5 which is our current standard.</p> <p>6 As the water quality standards 7 coordinator, I do find it to be a scientifically 8 defensible standard. EPA also has its opinion 9 of the standard and we will continue to work 10 with Georgia EPD as they go through this 11 adoption process.</p> <p>12 I'll take any questions, but Liz did a 13 great job going through the science that was 14 used to determine this proposed standard.</p> <p>15 MR. KISNER: What are the hurdles?</p> <p>16 MS. BENNETT: Georgia could address that 17 more. It is our current standard. We will not 18 make any changes to our water quality standards. 19 Our dischargers have been involved as have our 20 resource agencies.</p> <p>21 Georgia -- the adoption process now would 22 be the biggest hurdle in my opinion. Liz may 23 speak to that or Jeff.</p> <p>24 MR. LARSON: There will be a variance 25 process. We have the legalities for that. We</p>	<p style="text-align: center;">32</p> <p>1 an organizational meeting with them and went 2 through the standard just like you saw today. 3 It's one of the reasons we wanted to get it to 4 this group. We are telling everybody else about 5 it. They're interested. I think the tenor of 6 the meeting was good.</p> <p>7 MS. BOOTH: They're supportive because it 8 protects the biology there, which is what 9 they're concerned with. In September we did 10 adopt the variance and UAA language into our 11 rules. That allows for a way of meeting the 12 standard, and those will have to be applied for. 13 I think that's a means that industry and 14 municipalities can use while we develop the new 15 TMBL.</p> <p>16 MR. WALDREP: Aren't we locked in right 17 now by EPA -- our limitations as to any 18 additional dischargers into the river?</p> <p>19 MR. LARSON: Additional dischargers. 20 There's no room. The new standard will provide 21 some relief. It's still stringent, but as it 22 stands right now with the existing TMBL, it's no 23 dischargers and it's everybody out of the water. 24 That is those pipes that are currently 25 discharging don't have the capacity to</p>

<p style="text-align: center;">33</p> <p>1 discharge. It was based on a standard --</p> <p>2 Georgia standard was not approved. We went back</p> <p>3 -- or in adoption of this standard -- or in</p> <p>4 pre-adoption of this standard we went back and</p> <p>5 took all the data from years. This has been</p> <p>6 going on for --</p> <p>7 MS. BOOTH: 19 years today.</p> <p>8 MR. LARSON: 19 years today. As far as</p> <p>9 data compilation. All that has gone into what</p> <p>10 Liz described, the model simulations, to come up</p> <p>11 with what we're hoping everyone will see as the</p> <p>12 state of the art standard based on years of data</p> <p>13 gathering, years of modeling. So this standard</p> <p>14 will be highly scientifically defensible.</p> <p>15 MR. WALDREP: Is the technology of the</p> <p>16 folks that are discharging, is that improving or</p> <p>17 changing that would give them some -- give the</p> <p>18 state some relief about this cap that's been</p> <p>19 placed on this?</p> <p>20 MR. LARSON: I think a lot of the</p> <p>21 municipalities -- they have advanced treatment.</p> <p>22 Industries, they'll need to switch technologies</p> <p>23 or improve their technologies. But this</p> <p>24 permitting program has been in existence for 20</p> <p>25 or 30 years; and as you go with these</p>	<p style="text-align: center;">35</p> <p>1 of Savannah, not by the industries, or anything</p> <p>2 else. And the harbor was basically dead. There</p> <p>3 was virtually no life of any kind in the harbor</p> <p>4 at that time. So it's important to remember</p> <p>5 that we have made a lot of improvement. We are</p> <p>6 not where we need to be. But if you look where</p> <p>7 we started from back in the '60s, we have made a</p> <p>8 lot of progress.</p> <p>9 MR. McSHANE: On top of that, Joe, how</p> <p>10 many more people are living within the basin and</p> <p>11 its impact.</p> <p>12 MR. TANNER: Exactly correct.</p> <p>13 MR. McSHANE: To think what you put in</p> <p>14 place today, Dr. Booth, and the work you've</p> <p>15 done, 25 years from now that is what it's going</p> <p>16 to look at. I think that's what we at this</p> <p>17 table are thinking about, not necessarily what</p> <p>18 has been -- no pun intended -- water under the</p> <p>19 bridge, but what is coming for the next 25 or in</p> <p>20 some cases 50 years.</p> <p>21 MS. COUCH: Thank you.</p> <p>22 Changing the subject now from what is in</p> <p>23 the water to how much of it we have. I wanted</p> <p>24 to make -- have the opportunity, again, to deal</p> <p>25 with the very timely briefing on the Savannah</p>
<p style="text-align: center;">34</p> <p>1 dischargers and waste load allocations, which</p> <p>2 become ever more stringent, yeah, do you have</p> <p>3 municipalities meeting stringent limits. But</p> <p>4 they're not stringent enough for this TMBL.</p> <p>5 This is a pretty stringent TMBL. Obviously 0 is</p> <p>6 stringent. Anything backing off that, giving</p> <p>7 some more allocation to both states, still</p> <p>8 stringent, but something is there. And they</p> <p>9 will have to decrease or improve the waste water</p> <p>10 treatment. I think pretty much across the board</p> <p>11 in some way shape or manner.</p> <p>12 MR. McSHANE: I think what I saw when Amy</p> <p>13 came up is South Carolina DHAC staff -- correct</p> <p>14 me today if I'm wrong -- I sense that that was</p> <p>15 an endorsement of the process with the</p> <p>16 encouragement to adopt the standard that we</p> <p>17 heard today. Stringent implies it's</p> <p>18 restrictive. Protective implies that we are</p> <p>19 doing what our agencies are charged to do.</p> <p>20 MR. TANNER: I think one thing -- there's</p> <p>21 some advantage to being old -- not many, I</p> <p>22 guess, but a few -- I went to a hearing on the</p> <p>23 Savannah River, I think in 1964. And there was</p> <p>24 virtually no treatment of discharges into the</p> <p>25 harbor of any kind at that time, not by the City</p>	<p style="text-align: center;">36</p> <p>1 River drought and issues related to that. Jeff</p> <p>2 Larson will cover the first part of this</p> <p>3 presentation, and we're grateful to have Stan</p> <p>4 Simpson here from the Savannah District Corps to</p> <p>5 also present.</p> <p>6 MR. LARSON: Thank you. This is a</p> <p>7 briefing to you on the inter-agency discussions</p> <p>8 to date on the Savannah drought and how they</p> <p>9 affect the core projects and how they'll effect</p> <p>10 downstream users as well as those in taking from</p> <p>11 the reservoirs. I think it's good to start any</p> <p>12 discussion with a drought monitor map.</p> <p>13 We have learned to love these in telling</p> <p>14 us at least in Georgia if it's improving or not</p> <p>15 improving. This isn't the most recent, but it's</p> <p>16 a March 4th map. You're going from south to</p> <p>17 north as you get more severe drought. That</p> <p>18 peach color in the middle -- in the middle of</p> <p>19 that on the Savannah River side is the Thurmond</p> <p>20 Dam. You can get an idea as you go from severe</p> <p>21 in the peach color to that red which is severe</p> <p>22 -- I'm sorry, extreme. The peach is severe.</p> <p>23 The red is extreme; and the exceptional is now</p> <p>24 to the northwest.</p> <p>25 I view to the drought situation kind of</p>

<p style="text-align: center;">37</p> <p>1 historically. We have State of Georgia drought 2 actions, mandatory restrictions. We have since 3 June of 2006 declared our drought response level 4 statewide. These are time-of-day restrictions 5 on scheduled watering days. It was level one. 6 Level two is April 2007, further restrictions on 7 time-of-day watering on scheduled water days in 8 Georgia.</p> <p>9 September 2007 we declared level four, the 10 northern third of the state. 61 counties 11 outdoor watering prohibition with some 12 exemptions. October was a busy month for 13 Georgia. Governor Purdue's executive order 14 declared a state of emergency in 85 counties to 15 include those level four 61 counties.</p> <p>16 Two days later we were directed -- meaning 17 we, EPD -- to modify our water supply permits to 18 reduce water usage by 10 percent when compared 19 against a winter average time period extending 20 over 2006 and 2007.</p> <p>21 So the map looks like this for the State 22 of Georgia. Again, superimposing the Savannah 23 River Basin, you can see Lincoln County at the 24 southern end as Thurmond Dam. So we are -- the 25 counties involved -- what is critical here is</p>	<p style="text-align: center;">39</p> <p>1 same agencies that help develop the contingency 2 plan -- are put on conference calls every two 3 weeks to discuss the situations and to hear 4 about drought forecasting. Public meetings also 5 came in the four led by the Corps but supported 6 by the states and other federal agencies.</p> <p>7 We're now at level two. Thurmond has been 8 reduced to 4000 cubic feet per second. That was 9 modified with a deviation in October of last 10 year to 3600 cubic feet per second as a daily 11 target, a minimum, until the end of the drought.</p> <p>12 So the Corps right now is attempting 13 between 4000 and 3600 to target 3600 as the 14 major daily release. The idea: Keep more water 15 in the lakes, but balance out your downstream 16 uses. It's a balancing act, as you'll hear from 17 Stan in a minute, between Hartwell and Thurmond.</p> <p>18 So we're on 3600. When and if we go to 19 level three 3800 won't apply. It will be 3600. 20 Level four is your -- continue level three as 21 long as possible, until you get into an outflows 22 equals inflow. Generally the lakes become the 23 river. So outflow equals inflow is -- inflow, 24 again, is 20 percent -- 20 to 40 percent of 25 normal is going by the lakes, because the lakes</p>
<p style="text-align: center;">38</p> <p>1 the counties involved are under level four. And 2 you saw that first map. They're in severe 3 drought. So the inflow runoff going into the 4 lakes to replenish the lakes is down 20 to 40 5 percent of normal.</p> <p>6 The rest of the state is in level two, 7 remains in level two. So that's our map. 8 That's what it looks like. That's the State 9 perspective.</p> <p>10 The federal perspective -- U.S. Army Corps 11 of Engineers, which we and all agencies have 12 been working with in the past several months, is 13 the federal side of an operation of the three 14 projects. They have a drought contingency plan, 15 an updated plan that has also action levels, 16 drought contingency declarations.</p> <p>17 They had level one in June of 2007, where 18 you reduced Thurmond's Dam release. That's the 19 third one. You got Thurmond here, Russell, and 20 Hartwell as you go south to north. Thurmond's 21 release is the last one -- is the one before it 22 goes downstream at 42 cubic feet per second. It 23 also implemented a public safety information 24 process, where the Corps with agencies affected 25 by the Corps's actions -- and also these are the</p>	<p style="text-align: center;">40</p> <p>1 are down at the bottom of the conservation pool 2 downstream.</p> <p>3 That is a cross section of Hartwell on the 4 left and Thurmond on the right. These lines 5 indicate drought contingency declaration levels. 6 Again, we're at level two. There's different 7 sized lakes, different amount of conservation 8 pool depths. Thurmond is shallower than 9 Hartwell. But when you get to those balanced 10 out like this, you're at level two. Those apply 11 to both lakes. So we're between level two and 12 level three. At the bottom -- this is the 13 bottom of your conservation pool. Then you hit 14 what is called the enacted pool, lower water 15 quality. You have water, but it's lower water 16 quality.</p> <p>17 We have put together a technical 18 coordination group consisting right now of nine 19 agencies -- EPD, wildlife resources divisions 20 from DNR -- Georgia DNR. US Fish and Wildlife 21 Service, EPA, USGS, obviously the Corps, 22 Savannah district, and the South Carolina 23 Department of Natural Resources and DHAC. 24 That's our core group right now who are working 25 on what amounts to a transitioning plan</p>

<p style="text-align: center;">41</p> <p>1 proposal.</p> <p>2 Here are some of the milestones that we</p> <p>3 have set up. The group members exchange</p> <p>4 information. We send what we have to from the</p> <p>5 State of Georgia to USGS or U.S. Fish and</p> <p>6 Wildlife, so they can look at our data. It's a</p> <p>7 data swap. March 14th, after review of the</p> <p>8 applicable data, the group members submit their</p> <p>9 drought evaluation to the Corps. So the Army</p> <p>10 Corps will be the one compiling agency data. In</p> <p>11 fact, today same parallel to this meeting, the</p> <p>12 Corps plus the stakeholder group -- that is the</p> <p>13 group that is on the TCG -- are meeting with</p> <p>14 water supply permit holders and people involved</p> <p>15 with habitat protection not too far from this</p> <p>16 building to further define actions and look at a</p> <p>17 monitoring plan. Basically, what are we going</p> <p>18 to look at on the river. Do we need more</p> <p>19 stations. Do we need to verify intake levels.</p> <p>20 We need to take into account what will be</p> <p>21 impacted downstream.</p> <p>22 The 28th of March we will prepare a draft</p> <p>23 paper, the Corps will be compiling all the TCG</p> <p>24 information and I'm sure information we get</p> <p>25 today with the best possible project operation</p>	<p style="text-align: center;">43</p> <p>1 degrees of success right now with respect to</p> <p>2 each industry or municipality, anywhere from</p> <p>3 understanding where the intake level is to in</p> <p>4 the best case putting finishing touches on</p> <p>5 emergency planning.</p> <p>6 Who does this affect? Those are the water</p> <p>7 supply withdrawals in the reservoirs between</p> <p>8 Georgia and South Carolina. You can read this.</p> <p>9 This is who has intakes in the reservoirs. It</p> <p>10 shows you an actual placement of these</p> <p>11 facilities.</p> <p>12 MR. TANNER: While you got that slide up,</p> <p>13 do you or the Corps -- can you tell us what the</p> <p>14 pool levels are now in each of those lakes?</p> <p>15 MR. LARSON: 650.83 as of last night.</p> <p>16 Thurmond is 319.94.</p> <p>17 MR. MOSS: I have a question also.</p> <p>18 MR. LARSON: Russell is at 5 feet.</p> <p>19 MR. MOSS: Elizabeth, if you would back</p> <p>20 two slides. Right there. I understand what you</p> <p>21 are -- this notion of transitioning to level</p> <p>22 four. My understanding was that part of what we</p> <p>23 were trying to figure out here was assuming that</p> <p>24 we wanted to prevent ourselves from getting to</p> <p>25 outflow equals inflow, which conceivably there</p>
<p style="text-align: center;">42</p> <p>1 for transitioning to level four. That's a key</p> <p>2 word "transitioning." There's no transition in</p> <p>3 the current drought contingency plan. We must</p> <p>4 remember that that plan is authorized through</p> <p>5 Congress, and it's a document.</p> <p>6 We were able to get a deviation in October</p> <p>7 for 3600 -- and Stan will talk about this in a</p> <p>8 minute. But this is much more of a major</p> <p>9 consideration.</p> <p>10 April 3rd we plan to discuss the compiled</p> <p>11 information and draft into the draft paper and</p> <p>12 to select a time for presentation to</p> <p>13 decision-makers to vet this. This is a piece of</p> <p>14 art in motion. We don't have an actual end -- I</p> <p>15 can't give you a resolution. I can give you the</p> <p>16 steps in the process right now.</p> <p>17 Everything going right -- everything --</p> <p>18 everybody able to work through their different</p> <p>19 regulations, and I think regardless of that we</p> <p>20 will still meet with the effective water</p> <p>21 withdrawals and dischargers to discuss either</p> <p>22 the selected transitioning scenario or the</p> <p>23 contingency plan as it is, but to importantly</p> <p>24 define emergency planning.</p> <p>25 That is something that has different</p>	<p style="text-align: center;">44</p> <p>1 was some minimum release lower than 3600 CFS</p> <p>2 that we could conceivably transition to, maybe a</p> <p>3 level 3.5 or a level -- whatever you want to</p> <p>4 call it. That was well before we got to outflow</p> <p>5 equalling inflow.</p> <p>6 MR. LARSON: Correct.</p> <p>7 MR. MOSS: Is that also an output from</p> <p>8 this process?</p> <p>9 MR. LARSON: Yes, sir, it is.</p> <p>10 MR. MOSS: It's not clear.</p> <p>11 MR. LARSON: The Corps is going to take</p> <p>12 that.</p> <p>13 MR. TANNER: What is full pool at the</p> <p>14 other two?</p> <p>15 MR. SIMPSON: Summer full pool is 330 at</p> <p>16 Thurmond, 660 Hartwell. We're about 10 feet</p> <p>17 down.</p> <p>18 MS. COUCH: Show it on the graph here.</p> <p>19 Hartwell is what? 650?</p> <p>20 MR. LARSON: Hartwell is right here and</p> <p>21 Thurmond is right here.</p> <p>22 MR. SIMPSON: Full.</p> <p>23 MR. LARSON: Next is Savannah downstream</p> <p>24 intakes. Georgia and South Carolina. We are</p> <p>25 still ground0-truthing, but I'm sharing with you</p>

<p style="text-align: center;">45</p> <p>1 the inventories we have right now. 2 These are your waste water dischargers, 3 both states. And next is the placement through 4 the harbor. These ultimately are the 5 municipalities and industries we're going to 6 need to interface with as we move through this 7 process. 8 Pray for rain. This is a large effort, 9 but it's one we have undertaken and would love 10 not to have to completely and utterly follow 11 through with. I think this process is going to 12 shed light on even more revisions to a drought 13 contingency plan and to drought planning. So 14 everything we get out of this process is going 15 to be to the good. But the emergency planning, 16 provided that we don't get rain and we don't get 17 inflow like we need into the basins, will come 18 pretty fast. And we are, again, going to talk 19 to the public about this or to the industries 20 and municipalities. So they're going to have to 21 discuss this with us. 22 This shows preliminary water quality 23 modeling results. That purple line is 3600 out 24 until November. I think we have bought a couple 25 more months or so with the rainy whether we have</p>	<p style="text-align: center;">47</p> <p>1 15 intakes of the reservoir, 20 intakes 2 downstream, 23 waste water plants. And the 3 interagency group is working up a white paper 4 with a transitioning scenario discussed with one 5 recommended and the impacts forecasted. That 6 transitioning plan Stan will get to. 7 MR. TANNER: Do you have any forecasts as 8 to what we think is going to happen long-term? 9 MR. LARSON: No. Other than what I've 10 shown you -- I've thought about that all the 11 time. But the numbers are what are there. 12 MR. SIMPSON: We have got 10 weeks -- I 13 have a 10-week forecast coming up. I can tell 14 you what the weather service is telling us. 15 MR. HOLCOMB: Has the hurricane center 16 made their predictions for this year's tropical 17 storm? 18 MR. SIMPSON: They probably have, but they 19 did last year too. It was supposedly going to 20 be a pretty good season for picking up tropical 21 activity, but it didn't turn out that way. 22 You know, we have multi-purpose projects. 23 We're not operating for a single target. It's a 24 juggling act and things are getting worse when 25 it gets dry. The pools, as he mentioned, are</p>
<p style="text-align: center;">46</p> <p>1 had in the northeast section of the state. 2 But it's -- the transitioning; there isn't 3 one. You drop pretty well in November. You 4 skate above -- that red line is our Georgia 5 water quality standard, five milligrams per 6 liter daily average. Then you -- in May you 7 really get below it. That squiggly line is the 8 DO simulated based on 2007 fellows at Clyo at 9 river mile 60 forecaster to put these -- this 10 kind of a graph together. 11 So you have the drop-off or standard and 12 then where the DO ultimately goes down. Reason 13 being is you have less release from the dam, 14 less capacity to handle the current dischargers 15 that are in there, even though they're doing 16 pretty good. These dischargers are either on 17 some sort of advanced limit or doing better than 18 advanced. We're real happy about that. That 19 helps. But still even with that -- because this 20 was modelled off of actuals -- you'll see where 21 the DO goes down. Again, that's outflow equals 22 inflow. 23 Summary: We're at drought response level 24 four at the lake locations and upstream Army 25 Corps is at 3600 minimum at Thurmond. There are</p>	<p style="text-align: center;">48</p> <p>1 different, just based on when where they are and 2 on their purpose. 3 Hartwell is closer to the mountains; it's 4 a little bit deeper, a lot more relief. 5 Conservation pools between 660 and 625. That's 6 summer pool. We have a little bit of flood 7 control -- four feet at both projects, actually, 8 excuse me, five feet at all three projects. 9 Whereas, Thurmond's conservation pool goes from 10 330 to 312. It's about the same volume; it's 11 distributed a little bit differently. 12 When you look at Russell, it's only five 13 feet there. I'm not saying that the pools are 14 empty when you get here. There is almost the 15 same amount of storage in the reservoirs when 16 they're at the bottom of their conservation. 17 The problem we have at that point is we can't 18 put the water through turbines. You're going to 19 be draining out of the sluices which is at the 20 bottom. 21 For a while we will have a little bit of 22 an access to the spillway gates. You can't put 23 it through the turbines. It will tear up the 24 turbines at that point. We will have access for 25 about twenty feet and then it goes to sluices on</p>

<p style="text-align: center;">49</p> <p>1 Russell.</p> <p>2 Drought update, Jeff pretty much covered</p> <p>3 that. Our deviation -- the way the deviation</p> <p>4 worked was in the previous drought plan 3600 CFS</p> <p>5 was the minimum flow for the river. That was</p> <p>6 the number that we had used and coordinated with</p> <p>7 the states. It was based not on habitat but on</p> <p>8 physical limitation, primarily SRS and some</p> <p>9 other industries.</p> <p>10 The drought plan got updated. It re-</p> <p>11 established it at 3800 CFS, a little bit of</p> <p>12 relief there. Well, this is a pretty serious</p> <p>13 drought. We knew there wasn't going to be much</p> <p>14 of an impact going back to the 3600. So we were</p> <p>15 able to fly through that. It's a different</p> <p>16 story going from 3600 to something less than we</p> <p>17 have ever done. A lot of processes going on</p> <p>18 there. Level three is out in pretty far. Level</p> <p>19 four is out way out there now.</p> <p>20 Here are plots. This top line, that's the</p> <p>21 full pool. The blue line is the observed pool,</p> <p>22 and the red dots at the end are a 10-week</p> <p>23 projection. Between now and May we will</p> <p>24 probably get another foot, foot and a half of</p> <p>25 recovery. After that, typically, that's about</p>	<p style="text-align: center;">51</p> <p>1 useful. You get to see the percentage of</p> <p>2 storage and where you are in the pool.</p> <p>3 Thurmond: Very similar, same idea, level</p> <p>4 three. 312 is the bottom of conservation at</p> <p>5 Thurmond. We got a little bit more recovery.</p> <p>6 We are a little out of balance. Hartwell is a</p> <p>7 bit higher. Moving water down -- we don't</p> <p>8 generate excess in amounts of energy. We'd</p> <p>9 rather conserve it and keep it out of balance as</p> <p>10 long as the people don't cry too much.</p> <p>11 When it's far down it's not as bad. If we</p> <p>12 are off season. If it's the middle of the</p> <p>13 summer and we are two feet out of balance, we're</p> <p>14 getting letters from the Colonel every day.</p> <p>15 Our coordinating group members -- our</p> <p>16 mission is pretty much the same. They have the</p> <p>17 workshop going on today. They're exchanging</p> <p>18 information. Like you said, it's pretty much</p> <p>19 two focuses: One was more physical based. Your</p> <p>20 -- what are your intakes. What are our pinch</p> <p>21 points. How low can we go with our flow.</p> <p>22 We're looking at going down in the 2600</p> <p>23 CFS range and trying to find out who that is</p> <p>24 going to impact. We do it by transitioning down</p> <p>25 in probably 500 CFS increments and hold that for</p>
<p style="text-align: center;">50</p> <p>1 where you start to round out and head into your</p> <p>2 downward trend for the summer. You can see the</p> <p>3 curves there: Level one, level two, level</p> <p>4 three.</p> <p>5 MR. McSHANE: You don't think Hartwell</p> <p>6 will even get back to where it was a year ago?</p> <p>7 MR. SIMPSON: No. I think we will be</p> <p>8 starting this season --</p> <p>9 MR. McSHANE: Lower than we were --</p> <p>10 MR. SIMPSON: Eight to nine feet down.</p> <p>11 Russell, different story. It's pretty</p> <p>12 much flat. It's a pump storage facility,</p> <p>13 designed with only five feet of fluctuation.</p> <p>14 When we tend to average it roughly mid-pool or</p> <p>15 towards the high side of the mid pool.</p> <p>16 MR. HOLCOMB: Stan, when you say eight to</p> <p>17 nine feet down, what percentage of the water</p> <p>18 exists?</p> <p>19 MR. SIMPSON: Right now I believe we're</p> <p>20 about 50 percent full. There's a chart on our</p> <p>21 website. If you -- it varies between pools --</p> <p>22 Hartwell and Thurmond -- it's going to be like</p> <p>23 60 and 40. If you look on the left side of the</p> <p>24 page, it will say "pool schematic." It shows it</p> <p>25 in a slightly different way. It's really</p>	<p style="text-align: center;">52</p> <p>1 a month, maybe, and transition to the next 500</p> <p>2 CFS until you get down into the 2600 CFS range.</p> <p>3 The other people there are not the</p> <p>4 infrastructure folks. They're the habitat</p> <p>5 folks. They're saying these species can't take</p> <p>6 that kind of transition or can't take that kind</p> <p>7 of minimum flow. We're trying to set up those</p> <p>8 boundaries to how low we can go what we can work</p> <p>9 with.</p> <p>10 MR. WALDREP: This issue comes up a lot in</p> <p>11 the area where I live, about the flow and how</p> <p>12 you determine that. What was the initial reason</p> <p>13 for justification or criteria? What was -- what</p> <p>14 was based on?</p> <p>15 MR. SIMPSON: Back in the '80s drought we</p> <p>16 were kind of going through the same process, how</p> <p>17 low could we go. We were discussing with the</p> <p>18 industry through Augusta and SRS. And at that</p> <p>19 time we were transitioning away from the</p> <p>20 reactors that were. They were fazing them out.</p> <p>21 But their flow target was 3600.</p> <p>22 Now, it's not a flow base; it's a stage</p> <p>23 base. For most of the industry downstream of</p> <p>24 Thurmond, industry doesn't require 3600. They</p> <p>25 actually don't use that much water. It's just</p>

<p style="text-align: center;">53</p> <p>1 that their intakes are in the river at such a 2 level that we have to put 3600 out for them to 3 be able to withdraw water from the river. Now, 4 their contingency is to move the intakes, but 5 it's pretty expensive for them to do that. 6 MR. WALDREP: I just never knew that. 7 Thank you. 8 MR. SIMPSON: There's two ways to look at 9 transitioning. We actually made four transition 10 scenarios, but everybody said: What are the 11 most obvious things. One is transition before 12 you hit level four. Or two is when you get to 13 level four, you figure out how you're going to 14 transition before you hit natural inflow. 15 That means that you maintain some flow for 16 a prolonged period of time until you just don't 17 have any more storage. Hopefully, we never see 18 that; but the four scenarios that we're looking 19 at -- some have seasonality to them, meaning 20 that we will try something in the wintertime to 21 go lower. And in the summertime we'll bring it 22 back up and keep it in the 3600 CFS range. 23 And others do not. We will hit the 2600 24 and retain that flow until you run out of 25 inactive storage. Then we have our base</p>	<p style="text-align: center;">55</p> <p>1 There's a couple of questions that we have 2 to emphasize. We can operate it any way the 3 public wants us to operate it, but it's a 4 process to get there. And it's not our water. 5 We have the container, and we have the valves to 6 adjust it; but I'm asking you guys to kind of 7 come together -- and it sounds like this is 8 where this is working -- get a unified position 9 on how much water you need, how low you're 10 willing to go. I mean, because when we start 11 going down, we're going to start impacting a lot 12 of infrastructure and potentially habitat. I 13 really don't want to be the only one out there 14 as the target when I'm doing this. 15 MR. LARSON: That's why we have the 16 coordination group. "Coordination" being the 17 prominent word. 18 MR. WALDREP: You got the Army backing you 19 up. 20 MR. SIMPSON: That's what the Colonel 21 says, but he changes every four years. 22 There's one thing, though, once we come up 23 with this plan, we're stuck to a NEPA process. 24 That is not something that we can get done in a 25 matter of weeks. It depends on how extreme the</p>
<p style="text-align: center;">54</p> <p>1 conditions -- it's either you run the 3600 until 2 you run out of inactive storage, or you run 3600 3 until you run out of your conservation pool. 4 Then you run natural inflow. We wouldn't do 5 that, because it's leaving water in the lakes 6 and downstream has nothing. 7 MR. TANNER: Assume that you are releasing 8 3600 cubic feet a second, is that an average? 9 MR. SIMPSON: It's an average release. 10 We're picking plants, meaning we run three to 11 four hours in the morning, three to four hours 12 in the afternoon and shut off the rest of the 13 day. 14 Downstream we have a project Stevens 15 Creek. Every hour of the day they run our daily 16 average. That works well. They can't do that 17 on higher flows. 18 MR. TANNER: It serves as a re-reg dam. 19 MR. SIMPSON: Serves as a re-reg dam. 20 MR. TANNER: When you release it, you are 21 running it through the turbines. 22 MR. SIMPSON: Right. We very seldom 23 release anything through anything but the 24 turbines unless we run out of flood storage. 25 That's happened a couple of times.</p>	<p style="text-align: center;">56</p> <p>1 impacts are, and some of the stuff we're talking 2 about is going to be a major impact, which will 3 probably lend itself towards a full-blown EIS. 4 That is not something we can push back quickly. 5 If it's an environmental assessment, we 6 could. So we might be able to get done with the 7 wintertime stuff under an environmental 8 assessment, but if we are pushing 2600 through 9 the summertime we're going to have something -- 10 a bigger animal and much more expensive. 11 And our funding at the Corps of Engineers 12 is essentially gone. It's in the Mideast. If 13 you're not familiar with the process. It's real 14 simple: Develop your alternatives, look at the 15 impacts, apply some economics to it, and choose 16 the best alternative. The drought plans were 17 done with environmental EAs, the smaller of the 18 two, not the full-blown EIAs. 19 MS. COUCH: What would trigger going into 20 the EIA. 21 MR. SIMPSON: A significant impact. The 22 first drought plan probably should have been 23 EIS, because we were putting on a heavy 24 restriction, especially on hydropower. We 25 nailed them big time. As well as you're putting</p>

<p style="text-align: center;">57</p> <p>1 a lot of impact -- you're going to a minimum 2 flow to a 3600, something that habitat is 3 getting strained on. And we did not -- I guess 4 part of the deal is we did not want to spend a 5 couple of million dollars on studying habitat, 6 or maybe our budget didn't exist that we could 7 do that -- not to say it would cost a couple of 8 millions, but more than likely it will. 9 MR. McSHANE: Are you referring to 1989 as 10 the first plan? 11 MR. SIMPSON: Yes. We didn't have a 12 drought plan before that. We were flying by the 13 hip when we had a drought. 14 MR. STALLWORTH: The drought in the '80s 15 was a significant drought. It was a big problem 16 in the river. 17 MR. SIMPSON: Forecast: We run some 18 preliminary numbers to say the amount of storage 19 we have up there -- if you ran 20 percent over 20 our normal inflow, how long would the storage 21 last before you ran out of conservation. With 22 the recent rains that we have had, we are 23 probably out there a little over a year. So it 24 wouldn't be this year; it would be next spring. 25 That's assuming 20 percent.</p>	<p style="text-align: center;">59</p> <p>1 not much storage in the ground. That affects 2 your inflow situation too. 3 MR. SIMPSON: A lot of the inflows we're 4 seeing right now are coming off of Duke. But 5 it's intermittent. We have a storage agreement 6 with some of the projects upstream who have a 7 reasonable amount of storage, but they are 8 restricted by some other rules. Because they 9 are running it nuclear plant up there, and their 10 lake is their cooling power. 11 MR. BOARDMAN: Stan, based on where all 12 the agencies are going with this, isn't it 13 realistic to respect that EIS will probably be 14 needed? 15 MR. SIMPSON: It's probably realistic. 16 That white paper -- when we get to that step, 17 that is going to the Colonel and going to your 18 bosses and saying: This is what we need to do, 19 and saying: Let's go, and it's a matter of 20 finding the money to do this. 21 If it was a wintertime thing, we might be 22 able to squeeze it through. We missed out on 23 this winter -- not to say that we wouldn't do it 24 next winter. If it's a downward pool, we will 25 be looking at and try to do that through EA and</p>
<p style="text-align: center;">58</p> <p>1 Now, we saw inflows right now that are 2 probably pushing 80 percent on Hartwell and 60 3 on Thurmond, but back up about four months and 4 we were -- five months -- we were at 5 percent 5 of flows. It just depends. The weather 6 service, what they have been telling us, it's 7 going to be warmer and dryer. This is our 8 reprieve. If we don't get it in the next month 9 here, it's into summertime, the same response we 10 had earlier. 11 Tropical activity: Yes, it will help a 12 lot if it hits us, but we can't guarantee that. 13 MR. McSHANE: Those of us that live on the 14 coast have a trade-off issue on that one. I 15 think your point -- as I recall our climatology 16 staff referred to -- what frightens them is that 17 where we are today is actually -- even though 18 with these recent rains -- you're seeing some 19 inflows that coming in the streams that were 20 dry, it's the time of year. If we were seeing 21 this going into October, it would be different. 22 MR. STALLWORTH: The other thing that she 23 mentioned was ground water levels. Our ground 24 levels haven't recovered. I know they haven't 25 recovered nearly as much in Piedmont. There is</p>	<p style="text-align: center;">60</p> <p>1 a deviation of some sort. 2 MR. BOARDMAN: Remind me in your schedule 3 when the white paper will be developed. 4 MR. LARSON: April 3rd we're going to meet 5 to put it together. And finishing touches -- 6 probably by the middle of April. 7 MR. SIMPSON: A lot of information they're 8 collecting at the other meeting is the same type 9 of information that goes into your EAs and EISs 10 -- what are your habitat limits and those kind 11 of things -- as well as we have to know all the 12 MNI users intakes, how will they be impacted. 13 What we'd like to develop as part of this 14 effort is -- I look at it as a stage damage 15 curve with respect to flood control. In this 16 case it's with respect to water supply. As we 17 lower it, who is getting impacted and how much 18 is it -- is the associated impact. That would 19 help kind of make that decision. 20 I don't know how realistic that is. I 21 know some of these are City of Augusta -- 22 splitting it between the Shoals habitat and a 23 lot of industrial use. SRS, I don't know what 24 they do. I know they are one of the pinch 25 points. I don't know what it will cost them to</p>

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<p>1 develop contingencies to move their intakes 2 further into the river or the other industries. 3 I assume it's a pretty high cost. 4 MR. MOSS: Stan, I think this is great. 5 This is very important and absolutely critical 6 for us. One thing I just want to kind of say is 7 that presuming that we are operating a system 8 that is going to be with us for generations and 9 generations and generations, if we are faced -- 10 and I speak as an intake owner -- if the capital 11 cost -- the capital cost of moving those 12 intakes, which allows those reservoirs to 13 operate more -- in other words, allows us to 14 drop back down to the habitat point, which I 15 think is probably -- to me is the critical 16 number. We can't change the habitat, but we can 17 change the intakes. 18 Sure, it's going to be expensive, but if 19 you look at the value that accrues from those 20 capital changes out over the life of these 21 reservoirs and the long-term projections of 22 water demand that these reservoirs are going to 23 have to provide over the next 50 years. The 24 population in the basin is going to continue to 25 grow. The competition for water will get</p>	<p>1 is we need to keep these reservoirs as full 2 pooled as possible for as long as possible. 3 This draw-down that we used to do for rains that 4 were going to come in the fall, the spring, or 5 whatever, seems like to me we need to keep these 6 things at full pool as long as we can. Hydro 7 electricity I know is important to the 8 preference customers, but it's not as important 9 to the states as water supply. 10 MR. SIMPSON: Hydro power is all 11 incidental to us now. What we're deciding is 12 driving the train. Right now the only place 13 hydro power has leeway in meeting their target 14 rather than ours is between level one and full 15 pool. 16 MR. STALLWORTH: And you could use pump 17 storage. 18 MR. SIMPSON: Yes. They're really saving 19 themselves right now with pump storage. 20 MR. MOSS: I'd like to echo what Joe says. 21 One of the issues that's always seemed to me is 22 that for the most part the interest of the 23 people in the lower part of the basin and the 24 interest of the people in the upper part of the 25 basin -- regardless of the state -- are the</p>
62	64
<p>1 greater. The capital investments have to be 2 made in order to enable us to utilize these 3 reservoirs to their maximum extent possible, and 4 not require us to simply release water to cover 5 intake X by two feet of water at all times. 6 MR. SIMPSON: Something that I haven't 7 mentioned but we were in the middle of a 8 comprehensive basin study. Funding went away. 9 But once we developed some of these extremes 10 like the low side of the drought, we might want 11 to be trying to get back into that to figure out 12 how do you want to use the water. I mean, I'm 13 not saying from the Corps's perspective. How do 14 you want to use the water, where do you want to 15 retain it. 16 We can get rid of some of our flood 17 control and store water up there and figure out 18 what the trade-offs are associated with that. 19 Or we can get rid of some of our generation -- 20 take our trigger level one move it to full pool. 21 That has impacts on habitat. 22 MR. TANNER: I'm glad you said what you 23 just said. I was getting ready to basically 24 make the point -- it seems like to me the lesson 25 here for the states and the Corps of Engineers</p>	<p>1 same. The people in -- that live on those 2 reservoirs and depend on those reservoirs want 3 to keep the reservoirs as full as possible. 4 Speaking as a downstream water user, I 5 want to keep the reservoirs as full as possible. 6 I want to know there's water in there that is 7 going to get us through these types of droughts. 8 I don't have any doubt they are going to 9 continue. This is the second significant 10 drought event in five years. 11 I mean, what he showed us tipping that 12 bottom point, we tipped that bottom point in 13 2002. It's not going -- I don't anticipate -- I 14 think it's going to continue to be an issue we 15 are going to wrestle with. I think there's a 16 real commonality here and I think there's a 17 commonality between the states. I think South 18 Carolina and Georgia in general are both looking 19 at this river the same way. We balance our 20 major metropolitan areas on the river and our 21 industry and our recreation on the river all the 22 way down. 23 MR. TANNER: I'm not slamming the Corps 24 here. I appreciate what the Corps does. The 25 other thing we can't do is make mistakes. We</p>

<p style="text-align: center;">65</p> <p>1 have never recovered on Lanier from a mistake 2 release of water. It's important to understand 3 that's the real reason we need to keep the 4 reservoirs full, because you can be looking at 5 five or six years to recover from an error. 6 MR. SIMPSON: Redundant gauging is really 7 helpful. It removes a lot of stress on my part. 8 It's nice to know when you're looking at 9 something, you can tell people: Hey, the pool 10 looks like it's up half a foot. What happened 11 overnight. The front went through. You get two 12 gauges and you start to see things like wind 13 shift or Jean's network up and down the river 14 basin. That's very helpful to us to understand 15 what is going on with water quality and how 16 we're impacting on other things. 17 MS. COUCH: Dean, following up on your 18 comments: What is happening in South Carolina 19 as it relates to local or State drought 20 management in terms of consumptive uses and 21 withdrawals? 22 MR. McSHANE: Legislatively? 23 MS. COUCH: If you have drought issues. 24 We're obviously -- we have been at progressive 25 levels of aggressiveness of putting in rather</p>	<p style="text-align: center;">67</p> <p>1 than I do -- approximately 65 to 70 percent of 2 our current municipal water users are under one 3 drought restriction or another right now. 4 MR. STALLWORTH: What is that of the 5 population? 6 MR. KISNER: I think we're close to 90 7 percent of all the public served as some level 8 of concentration measures in place right now. 9 MR. WALDREP: I would like to add that we 10 have some pending legislation in South Carolina 11 where we're trying to create a water board, 12 which would also incorporate all these entities, 13 as I understand it, and try to make it more 14 coordinated so that we would be speaking pretty 15 much with one voice as far as our drought 16 situation is concerned rather than so many 17 different -- there's a lot of voices to be 18 heard, but somehow or another they would be 19 coordinated so that is going through the 20 legislation. 21 MR. McSHANE: They were introduced this 22 year, both in the house and the senate -- we 23 currently have in the South Carolina senate on 24 Wednesday -- our ag and resources committee will 25 be hearing testimony on the surface water</p>
<p style="text-align: center;">66</p> <p>1 stringent -- and I'll use the word in this 2 context -- 3 MR. MOSS: We approach it differently than 4 you do on one level, the same on another level. 5 We have progressed up through drought stages in 6 the state since roughly the same time period -- 7 June of 2006, summer of 2006. 8 We are at a severe drought declaration 9 over the entire state right now with the 10 exception of the two counties in the 11 southeastern corner Beaufort and Jasper. We're 12 at a moderate drought in those two counties. 13 Once we get past that point, we do not 14 have -- as Georgia does -- a state level 15 mandated conservation effort -- whether it is 16 watering restrictions or other things. These 17 are not mandated at the state level. They are 18 basically voluntarily at the local level tied to 19 state-approved drought management plans, which 20 are tied to triggers. 21 So each municipality or water user has a 22 drought plan that has a series of triggers in it 23 that says: At this trigger we implement these 24 changes. At this trigger, we implement these 25 changes. I would say -- Hank may know better</p>	<p style="text-align: center;">68</p> <p>1 withdrawal permitting action that was filed 2 earlier in the year and the committees have had 3 discussions that South Carolina has not had on 4 surface water withdrawal permitting. 5 I think Wednesday will be a pending point 6 in my view, whether that will move forward 7 through the senate to the house or it may not 8 move forward. 9 Carol, just to make certain, we're a state 10 in our current drought management plan, where we 11 have four levels, we're in level three. As you 12 identified in 44 out of the 46 counties it is in 13 level 4, which we consider extreme. 14 There is a mechanism. 15 MS. COUCH: Different route. 16 Clearly, I think with even the 10-week 17 projection we will be at a level that is not 18 favorable going into the hot and dry summer. So 19 the discussion of how we're going to manage the 20 drought and make alternatives within the Corps 21 contingency is important. I guess I would like 22 to come back to talk about how we could be 23 helpful to you in assuring EIS could be 24 performed in a timely way. That's absolutely 25 critical.</p>

<p style="text-align: center;">69</p> <p>1 MR. SIMPSON: I agree. Like I said, a lot 2 of it is budget-oriented. But if you push our 3 Colonel, we will pull it out of something else. 4 MS. COUCH: You'll probably be hearing 5 more on about that. 6 MR. MOSS: Is it the kind of thing that 7 the delegation of both states working 8 collectively would be helpful with? 9 MR. SIMPSON: Sure. 10 MR. McSHANE: I'd like to see you 11 articulate what you think these committees can 12 do to help you in this process, articulate the 13 steps that these committees could come back. 14 MR. SIMPSON: When I say we will take it 15 out of something else, there's not a whole lot. 16 They already cut the operations budget 17 drastically this year, and so it's we're looking 18 for money for labor to cover our labor so we can 19 stay at work. 20 They're thinking about closing some of the 21 parks on the lakes that are still open, things 22 like that, as just ways to come up with a 23 sufficient amount of funding to do something 24 like this. That wouldn't be enough. I mean, 25 maybe for an EA, but not for an EIS.</p>	<p style="text-align: center;">71</p> <p>1 there any problem with that? 2 MR. McSHANE: I think there are a couple 3 of issues that from a layman -- there's already 4 existing permits in place. There's going to 5 have to be a review of impacts, and I think 6 staffs need to work on those -- what is their 7 strength and their resource in terms of whether 8 it's -- whether your Steve's department or DNR. 9 I don't think they charge them necessarily with 10 that. We have had discussions on it, but I 11 think they need to come back to us before we 12 could just unilaterally say that. 13 I think you have some ideas on -- today 14 you're going to present to the committee that 15 may tie this into that. 16 MR. MOSS: I have a question for Carol and 17 Jeff: How does the TMBL model and the process 18 we're going through there affect the process 19 we're going through here? In other words, the 20 assumption in that TMBL modeling has to be a 21 certain amount of flow of fresh water coming 22 down the river in order to make that model. 23 You have to assume there's going to be 24 fresh water to keep that salt wedge down and to 25 show where your transition points are between</p>
<p style="text-align: center;">70</p> <p>1 MR. McSHANE: Can you go back two slides. 2 There were two points you were asking the 3 committee. Is this an expectation. You're 4 looking for these. 5 MR. SIMPSON: That would be my 6 expectation. I have a hard time -- I mean, to 7 give you a little history, in the previous 8 drought I was shooting at a different number. 9 Instead of 3600, I was shooting at a number of 10 4500. The idea was to support water quality at 11 the time. That was supposedly where the permits 12 were based. 13 Well, they managed to work their way down 14 to the 3600 range now. So I'm not sure what is 15 changing, other than we're redefining -- we're 16 understanding dissolved oxygen and things like 17 that better; but I don't know what causes the 18 change, but I want both states to have the same 19 -- at the time, in the '80s, South Carolina was 20 like 5400 and Georgia was a different number. 21 Even that by itself is a hard thing to 22 consolidate and come up with the same one. 23 MR. WALDREP: Is there any objection by 24 our states to what the Corps -- the way the 25 Corps is treating this pooling in reduction? Is</p>	<p style="text-align: center;">72</p> <p>1 fresh, brackish and salt. Are the models going 2 to work together? Is it possible we could come 3 up a TMBL for the situation in our harbor DO 4 study which would then create problems in the 5 EIS for a reduction -- conceivable reduction in 6 flow that the Corps is contemplating down to 7 2600. How do we -- is that 2600 -- I'm assuming 8 we can relate the 2600 at least from Thurmond to 9 what we're actually going to see at Cryo and 10 ultimately what that impacts the harbor. How do 11 those things work together? 12 MR. LARSON: Liz, can you explain the 13 standard, how the harbor standard is 14 contemplated. 15 MR. SIMPSON: You're modeling was based on 16 3600. 17 MS. BOOTH: It was based Clio in 1999. 18 It's a timing issue which is why you have a 19 seasonality. We typically can meet the DO 20 standards in the wintertime with reduced flows 21 because the temperatures are cooler. It's the 22 summertime where we need those flows. 23 Right now we have a harbor that's not 24 meeting the current standard on the books. When 25 we put the standard on the books, my guess is</p>

<p style="text-align: center;">73</p> <p>1 that we're looking at 85 to 90 percent 2 reductions in point source loads to the river 3 and harbor, and that's going to require 4 variances. The variance is the route in order 5 to meet the standard that you're going to have 6 to go with.</p> <p>7 MR. MOSS: I guess what that does to me is 8 inform -- if we go back to the alternative 9 scenarios that you're looking at, the 10 seasonality scenario, in which we conceivably 11 reduce our winter discharge, our winter releases 12 dramatically, to hold that water in the 13 reservoirs so that more release could occur in 14 the summertime, which would then help to offset 15 the impact of temperature on the DO in the 16 harbor so that you work a balance there -- not 17 any more than you have to, but you aim -- use 18 your DO as your objective.</p> <p>19 MR. LARSON: Keep in mind this is almost 20 an emergency action. DO standard setting, and 21 then there's the transitioning down. We could 22 be informed by transitioning as best we can, but 23 there are two -- I view them as two separate 24 objects.</p> <p>25 MR. MOSS: We got to assume we are going</p>	<p style="text-align: center;">75</p> <p>1 that within the results of this committee.</p> <p>2 MR. LARSON: Our modeler on the committee 3 is the one who helped with the harbor standard.</p> <p>4 MR. MOSS: I'm not doubting it. I'm just 5 -- my notion -- you got to think about both of 6 those things together to the extent you can.</p> <p>7 MS. COUCH: And I think they do need to be 8 looked at in terms of the committee vision; but 9 they do have a separate but related reason for 10 moving forward, and the timeliness as an 11 emergency issue in the next summer is something 12 that we on both sides of the river need to 13 address much sooner than ultimately a long-term 14 solution on a similar capacity.</p> <p>15 It's good you bring that out.</p> <p>16 MR. BELL: Carol, should the power 17 industry be part of this coordination group? Or 18 at least a contact to the power industry. I 19 guess, on non-nuclear plants you have about 95 20 percent water taken out and put back in but on 21 these probably 50 to 60 percent.</p> <p>22 MR. LARSON: They will be on the 23 committee. Plant Vogtle will be.</p> <p>24 MR. SIMPSON: They're definitely a factor. 25 When you say "power," you're not talking about</p>
<p style="text-align: center;">74</p> <p>1 to be in the situation again.</p> <p>2 MS. BOOTH: You have the tool to do the 3 evaluation of where we are at this point in 4 time.</p> <p>5 MR. McSHANE: That's what you're trying to 6 suggest. We ought to be keeping that.</p> <p>7 MS. BOOTH: We have used the tool. We 8 have used modeling to determine how far the salt 9 wedge is going up, whether it's going to 10 interfere with the intake of the city of 11 Savannah.</p> <p>12 MR. SIMPSON: The DO operations that Jeff 13 showed were the same tool.</p> <p>14 MS. COUCH: Can you scroll back to the 15 coordinating committee composition.</p> <p>16 One important point is that we are already 17 working together in terms of this effort through 18 this committee, and there are many agencies that 19 touch it, different federal resource agencies; 20 but we already have a route forward to develop 21 the content of the white paper.</p> <p>22 So I would say that to the extent that 23 there's a consolidated way to address the 24 states' interests, I think it is through that 25 white paper development and the articulation of</p>	<p style="text-align: center;">76</p> <p>1 CEPA and the people we will sell power to, 2 but --</p> <p>3 MR. BELL: Where there's power impacts.</p> <p>4 MR. LARSON: They're included.</p> <p>5 MR. SIMPSON: That's how we came up with 6 the 2600, was Plant Vogtle, with the rough 7 level. Not to say that 2600 should be the 8 bottom; that's just our preliminary assumption. 9 That's a very big impact -- regional impact.</p> <p>10 MR. COUCH: If there are no other 11 questions or discussions on this, we could -- 12 thank you very much, Stan. Our lunch has 13 arrived. I guess it is set up out here. We 14 have one remaining agenda item presentation, and 15 Dean it is your discussion on the planning and 16 allocation issues.</p> <p>17 One of the things we did not provide for 18 on the agenda is the opportunity for public 19 comment. I think that if there's any member 20 here of -- in the audience today that would like 21 to address the committee, the opportunity to do 22 so would be the culmination of our last agenda 23 item, I would ask you to sign up with Yolanda. 24 You want to raise your hand. Let Yolanda be 25 aware of any interest in addressing the</p>

<p style="text-align: center;">77</p> <p>1 committee. We should have pointed that out 2 earlier. I apologize for that oversight. 3 (Lunch recess from 11:49 a.m. to 4 12:27 p.m.) 5 MR. MOSS: Before I kick into this, I gave 6 everybody a copy of the document, actually, that 7 I handed out at the last meeting about the 8 planning coordinating efforts involving a kind 9 of a top-level coordinating team of 10 representatives, one from each state appointed 11 by the governor, a representative of the Corps, 12 a representative of the hydroelectric power 13 folks -- being my choice, because of the 14 immanence of their licensing, and a senior 15 scientist to chair. Without biasing anything, 16 hopefully, Dr. Ideson (ph) might consider that. 17 It was a notion to have five people with no 18 mandatory requirements, no ability to mandate or 19 required to do anything, just a forum on a high 20 level the issues of the efforts and the progress 21 of the various studies that are happening. 22 The Duke project is going to be done. 23 Georgia has its master planning work. The Corps 24 -- we just heard this is going to take some 25 time. There's a lot of data involved here.</p>	<p style="text-align: center;">79</p> <p>1 the bottling of water in Coca-Cola cans to be 2 shipped someplace else, whether it's water going 3 on people's lawns and never finds its way back, 4 those are consumptive uses. Both states deal 5 with that. Both states understand it's the key 6 issue. If the water comes out and goes back in, 7 it's not too big a deal. But we have a certain 8 amount of consumptive use that is happening in 9 the system right now. 10 It's increasingly well-accounted for, but 11 at some point this consumptive use becomes the 12 issue between the two states. We aren't there 13 yet. We have not had any conflicts between us 14 on who has the right to what, but eventually 15 populations growing, demands are growing, we are 16 going to have that. And I think what we need to 17 do is figure out a way to equitably allocate 18 that between the two states. 19 The basin -- I'm going to make a 20 recommendation to this committee that anytime we 21 now put a map up on the bulletin board that it 22 show both states. We have to think about this 23 basin as a unit. You've got to understand the 24 location of the basin relative to not just the 25 basin itself, but all the things that are going</p>
<p style="text-align: center;">78</p> <p>1 South Carolina will be getting into its 2 discharge permitting. It's time for us to do 3 another basin study. 4 There's a lot going on, and the second 5 piece, again, is the data piece, which would 6 attempt to ensure that as all these studies are 7 ongoing, that we have the data sets managed 8 together, so that we are using the same form, 9 the same numbers, the same map scale, just the 10 mechanics of making sure that the data that the 11 Corps is using and the data that Duke uses and 12 that Georgia collects and that South Carolina is 13 collecting, that it's all consistently usable by 14 all parties. I stand by those recommendations 15 and we can come back to those in a little bit. 16 Basically, the point I've made to a couple 17 of people -- and I'll make it again -- is that 18 until we can figure out how much of the water -- 19 when I talk about it, it is really the 20 consumptive use of the water out of the basin -- 21 whether that consumptive use is an inter basin 22 transfer -- there are number of those in South 23 Carolina -- whether it is an evaporation of 24 substantial amounts of water going out from 25 power plant and power generation, whether it is</p>	<p style="text-align: center;">80</p> <p>1 around it. We have Atlanta, Greenville, 2 Columbia, Augusta; and my two little counties 3 are there at the bottom because this map gets 4 used for other purposes. 5 But that's the basin we're talking about. 6 It is -- we have talked a lot about it. There 7 are some other lakes, obviously, that go up into 8 north Georgia -- Lake Burton and some of the 9 projects that Georgia Power has up in those 10 areas that we don't show in that map. 11 MR. TANNER: Dean, where is that South 12 Carolina dam on there? 13 MR. McSHANE: Stevens Creek? 14 MR. SIMPSON: Northside of Augusta. 15 MR. MOSS: Right up in that area. That's 16 Stevens Creek coming in there. 17 MR. TANNER: So it's very close to 18 Thurmond. 19 MR. MOSS: It's not very far. You 20 regulate there, and I guess you have the 21 opportunity to re-regulate it at the new 22 Savannah lock and dam. 23 I kind of talked about the challenges 24 here, and I consider the first challenge -- and 25 I think we all agree the natural sources and the</p>

<p style="text-align: center;">81</p> <p>1 ecosystems have got to be protected in the 2 basin. That's job one. We have talked about 3 that a number of times today with a number of 4 things.</p> <p>5 What we have and what we're going to have 6 in the future -- because this basin is no 7 different than any other significant basin in 8 the United States -- with the possible exception 9 of the Mississippi -- we have a finite amount of 10 water. It is going to be chased by what I 11 consider an apparently infinite future need.</p> <p>12 We are going to continue to grow. South 13 Carolina is going to double in population. 14 Georgia is going to double in population. 15 People like to live near and around water. I 16 project that the Savannah River basin will 17 increase dramatically in population over the 18 next 25 years.</p> <p>19 This is a very complex hydrologic system. 20 It's also a very complex institutional system. 21 We have got lakes. We have got states. We have 22 got the Corps, a number of federal agencies 23 involved here. DOE is a huge factor in the 24 basin. We have power companies -- three power 25 companies involved in the basin, multiple</p>	<p style="text-align: center;">83</p> <p>1 Georgia, Alabama, Tennessee who use those lakes, 2 an enormous economic impact on the basin from 3 having those lakes there.</p> <p>4 We have conflicts between users in the 5 basin right now, particularly in times of 6 shortage. There is a conflict between lake 7 property owners and recreation and power 8 generation. It's been that way forever. Then 9 we have a future competition between the states 10 for the limited amount of consumptive use that's 11 ultimately available in the basin.</p> <p>12 In our favor we got a lot of work already 13 done. There is an enormous amount of technical 14 work that's been done in the basin over the 15 years. The Corps has done a lot of work. 16 States have done a lot of work. Duke has done a 17 lot of work. We have a very good interstate 18 relationship. There's no litigation. We are 19 meeting. We are in good shape, probably better 20 than most states with common river basins.</p> <p>21 We have I think, as I said earlier, 22 generally common interests between the states. 23 When we look at the basin as a whole, the 24 interests of Augusta are pretty much the 25 interest of North Augusta and Aiken. The folks</p>
<p style="text-align: center;">82</p> <p>1 counties, multiple cities, and in the middle of 2 two very, very fast growing, very dynamic 3 states. It's an enormously complex system that 4 we have to figure out.</p> <p>5 We have current and future demands for 6 water, power, and recreational activities from 7 outside the basin. There's no question most of 8 the power, I think, generated through the 9 Corps's facilities leaves the basin. It's used 10 -- maybe some is being used in the basin, but a 11 substantial amount goes outside the basin and is 12 used exteriorly.</p> <p>13 Water -- obviously, there are inter basin 14 transfers in South Carolina that move water out 15 of Keowee into Greenville, a little bit in 16 Edgefield County, and then from Beaufort Jasper 17 at the bottom of the basin there are uses which 18 leave the basin water, which leaves the basin 19 not necessarily efficiently inter basin 20 transfers, but a lot of evaporation and probably 21 some products.</p> <p>22 Then we have an enormous demand for 23 recreation from across the southeast on the lake 24 resources and the river resources. We have got 25 people coming from all over South Carolina,</p>	<p style="text-align: center;">84</p> <p>1 on the Georgia side of Hartwell and the South 2 Carolina side of Hartwell have the same 3 interests. I can tell you for a fact that 4 Savannah and Buford/Jasper have exactly the same 5 interest in the management of the basin.</p> <p>6 I think we have a common interest between 7 the upper and lower basin. I think everybody's 8 interest is in keeping those reservoirs as full 9 as possible for as long as we can. I think the 10 reservoirs provide us an enormous amount of 11 management flexibility. If we can figure out 12 how to do it, those reservoirs. We have I think 13 -- I made the measurement I think we have three 14 thousand billion gallons of water in storage at 15 full conservation pool in the basin.</p> <p>16 We have the ability to move that water 17 around. We have the ability to hold it, release 18 it, and in the case of Russell the ability to 19 pump it back. In the case of Bad Creek the 20 ability to pump it back. There's a lot of 21 flexibility here.</p> <p>22 Some key concepts: The system has a 23 finite ability to lose water through consumptive 24 withdrawals. We can measure that. We can 25 figure out what that is. But it's going to vary</p>

<p style="text-align: center;">85</p> <p>1 by segment. Some reservoirs will be better than 2 others. The lower river can do something 3 conceivably the reservoirs can't. It varies by 4 season, and it's going to vary by drought 5 status. 6 Conceptually, each state should have the 7 right to utilize its share of the river's 8 consumptive use and withdrawal in any way it's 9 used. If South Carolina wants to take its 10 limited amount of consumptive use and assign 11 that to the City of Greenville for water supply, 12 we should be able to do it. If Georgia 13 contrarily wants to take its power and generate 14 it as a power-generating resource to generate 15 thermal power and evaporate those waters out, 16 it's certainly its right to do that. 17 The water supply is finite. I say that 18 again. The needs of the natural systems are 19 paramount in the basin; and then droughts have 20 been common and inflows very dramatic. I think 21 that is historical. I think we got to reconcile 22 current and future competing interests between 23 the states between the upper and lower basins 24 and the various users. 25 We can describe the system and model it.</p>	<p style="text-align: center;">87</p> <p>1 levels are. We have to determine reasonable, 2 consumable withdrawals. We have to allocate 3 those between the states. We have to develop an 4 equitable low-flow protocol. That's the term 5 you're going to see coming out of Duke as a 6 result of their -- that's the terms that are 7 used in the Catawba basin. I think it's a 8 useful way to think about it. 9 Then we have to implement a regulatory 10 system, not a new regulatory system, just making 11 sure that our existing regulatory systems are 12 coordinated, so we are comfortable that if we 13 have a lot of transparency in the basin -- we 14 know who is using what, what it's being used 15 for, et cetera. 16 My proposed approach: I say we establish 17 a small planning team, certainly consisting of 18 the state and the Corps and the utilities. This 19 would be different from the -- to what I 20 proposed before. I think you're going to 21 develop a work plan. And we will have to have a 22 budget. The states will have to contribute 23 money to get this done. 24 We need to hire a consultant. We ought to 25 select and hire a national consultant to do this</p>
<p style="text-align: center;">86</p> <p>1 We have the ability to do that. We have been 2 improving that ability, and we will to continue 3 to improve. But if we're going to do this, it's 4 time consuming. It's difficult. It's 5 expensive. But it's absolutely necessary. We 6 have to get to the point between the two states 7 where we are comfortable with each other and our 8 use of water from the basin. 9 The reason we have a problem in ground 10 water is because we never addressed it. The 11 reason we have a problem with TMBL right now is 12 we didn't get serious about figuring out that we 13 really had -- were fighting a problem until a 14 couple of years ago. The Sierra Club lawsuit 15 was the driving force that put us in the 16 position we're in. 17 We don't need to be there. We do not need 18 to put ourselves in a position to get into 19 litigation. We can solve this problem. It just 20 takes good will and patience and good data. 21 The planning steps -- this is kind of just 22 a bares bones. We got to quantify the use of 23 the natural systems. We're moving, I think, 24 toward that. Then we have to define what our 25 minimum flows, allowable flows and reservoir</p>	<p style="text-align: center;">88</p> <p>1 stuff. There are many of them around. The west 2 has been fighting these fights for years and 3 years and years. There are some consultants 4 that have been fairly successful in working 5 between states to get things done. 6 We have to establish a public involvement 7 process that works, and we have to assemble 8 existing reports, data, et cetera. One of the 9 things that Carol, when we met with Gus and 10 Braye the other day, the document that they 11 shared with us talked about a coordinated public 12 involvement approach. I think we embrace that 13 very, very completely. 14 But it also probably needs to be tied 15 somehow to a public involvement approach that 16 the Corps has been using, and the public 17 involvement approach that Duke will put in place 18 for the FERC relicensing. The FERC relicensing 19 is something that Georgia has not been through 20 the way we have with the Catawba. It is an 21 enormously complex process. It took Hank four 22 years, five years of work with Duke to get to 23 the point where there essentially was unanimity 24 between the stakeholders as to how the system 25 was going to work. Even that didn't keep us out</p>

<p style="text-align: center;">89</p> <p>1 of a lawsuit.</p> <p>2 It's enormously complex. They will throw</p> <p>3 enormous resources. They will spend millions of</p> <p>4 dollars to get this licensing done. That's an</p> <p>5 opportunity for us to use those dollars to our</p> <p>6 advantage, to get data collected, to make sure</p> <p>7 we have the ability to do stuff right now.</p> <p>8 We need to determine the amount, stage,</p> <p>9 and quality of water required to meet the</p> <p>10 natural system's needs of each segment. That</p> <p>11 includes the lakes and the lower basin. We are</p> <p>12 well on our way to doing that. We have to</p> <p>13 determine the human consumptive requirements.</p> <p>14 I'm using the term "requirements" instead of</p> <p>15 "demands."</p> <p>16 I'm probably living proof of the fact that</p> <p>17 demands exceed requirements. They certainly do</p> <p>18 in my system. People want to use as much water</p> <p>19 as they can, mostly because they don't know how</p> <p>20 to use it well. They over irrigate, and they do</p> <p>21 this, that, and the other thing. They don't</p> <p>22 need to be using that much. We are including</p> <p>23 more supply of waste water simulation, power</p> <p>24 generation, navigation, lake level maintenance,</p> <p>25 recreation, whatever those pieces are.</p>	<p style="text-align: center;">91</p> <p>1 assume that all human requirements -- and that's</p> <p>2 particularly generally for stage -- are assumed</p> <p>3 to be adjustable. It may be expensive. It may</p> <p>4 be difficult to do, but we can figure out how to</p> <p>5 do that. So the main thing is the natural</p> <p>6 systems. And once you have the natural systems</p> <p>7 in place, you understand, then you can work</p> <p>8 toward what you have available to consume.</p> <p>9 We have got a model. We would do some</p> <p>10 iterations. We want to seek for each segment an</p> <p>11 optimized set of consumptive withdrawals,</p> <p>12 downstream releases, reservoir levels. And we</p> <p>13 define allowable consumptive withdrawals for</p> <p>14 each segment. And then you allocate those</p> <p>15 between the states, and that's really before the</p> <p>16 existing demands. You want to say: Well, the</p> <p>17 system will support let's just say 1000-acre</p> <p>18 feet of consumptive demand.</p> <p>19 Right now we know Georgia is using 500 and</p> <p>20 South Carolina is using 300, whatever it is. So</p> <p>21 you adjust those so that we -- if somebody is</p> <p>22 using more than their share, we have to allocate</p> <p>23 that thousand between the states. That's the</p> <p>24 toughest part of the job, politically,</p> <p>25 obviously, is that -- as we have with ground</p>
<p style="text-align: center;">90</p> <p>1 We need to do that by segment. We need to</p> <p>2 define that for each reservoirs. We need to</p> <p>3 design that for the basin. I would break the</p> <p>4 lower basin probably up at Cloyo and talk about</p> <p>5 what happens above Cloyo and what happens below</p> <p>6 Cloyo.</p> <p>7 We have to protect future human</p> <p>8 consumptive requirements by segment. We need to</p> <p>9 look at population projections. We need to look</p> <p>10 at industrial development projections and try to</p> <p>11 make a judgment as we go forward -- what are we</p> <p>12 going to need in the future in the basin to meet</p> <p>13 human needs and requirements.</p> <p>14 Then we need to analyze and quantify --</p> <p>15 what I do is -- I've talked about downstream</p> <p>16 from the top of the basin where you kind of</p> <p>17 figure out -- you have your inflow. You have</p> <p>18 your demands in the segment. You have the</p> <p>19 amount of water that has to be released to the</p> <p>20 next segment to meet the demands of the lower</p> <p>21 segment, and you have to do an upstream analysis</p> <p>22 and then a downstream analysis. You have to</p> <p>23 have natural system needs and existing human</p> <p>24 consumptive requirements.</p> <p>25 Then you start -- I think you have to</p>	<p style="text-align: center;">92</p> <p>1 water and with TMBL -- there are an inequitable</p> <p>2 allocation of those resources going on right</p> <p>3 now. The challenge is how do we reconcile what</p> <p>4 ought to be with what is.</p> <p>5 Then you've got to assume those</p> <p>6 percentages vary by segments. You don't match</p> <p>7 equally segment by segment. It may be that</p> <p>8 Georgia needs a significant amount of water out</p> <p>9 of this segment for its purposes here, but South</p> <p>10 Carolina is another segment downstream. Again,</p> <p>11 you have to align those things. Then the states</p> <p>12 get to use their share as they see fit.</p> <p>13 So that's kind of my proposal. It is</p> <p>14 inexact. I'm sure that when it starts to be</p> <p>15 fleshed or something is fleshed -- again,</p> <p>16 probably for me less important that my model is</p> <p>17 followed than it is that the states resolve that</p> <p>18 we have to start to tackle the issue. And it</p> <p>19 ties into a lot of what the Corps is doing, the</p> <p>20 question that Stan asked: The states need to</p> <p>21 decide what they want to do with the water;</p> <p>22 because that will ultimately govern how the</p> <p>23 Corps decides long-term and how, in essence, we</p> <p>24 end up going to Congress, if you will, and</p> <p>25 saying: We want the management model in the</p>

<p style="text-align: center;">93</p> <p>1 basin changed, so that we don't do it this way. 2 We do it this way. 3 We can't get to that point until we have 4 reconciled to ourselves how the water will be 5 used. I don't think Georgia can advance 6 terribly far with its basin planning in the 7 Savannah basin until it has some grasp of the 8 volumes of consumptive use that it has available 9 to play with. I think South Carolina is in the 10 same situation. We can't really talk about how 11 we're going to manage our side of the river 12 until we know. 13 Certainly it isn't infinite. We know 14 there's a limit under the best of circumstances; 15 and based upon the flow regimes we have seen, 16 assuming that the reservoir operating models 17 remain the same, then that limit is dramatically 18 affected by drought. Like I said, in the last 19 five years we have started to bounce along the 20 bottom of that conservation pool at Thurmond 21 twice, and we have got to figure out how to 22 operate inside that type of environment. That's 23 what I have. Thank you for your attention. If 24 there's any questions, I'd be glad to answer 25 them.</p>	<p style="text-align: center;">95</p> <p>1 relicensing of the entire system. And we are 2 coming to that point in Keowee and Jocasee. 3 They have started the process internally. The 4 license expires in 2014. I think they have to 5 have it relicensed by 2014. 6 It's a monumental process. They will be 7 subject to an enormous amount of review. I 8 would expect by the folks who live along the 9 lakes -- because their view is an enormous 10 amount of the problem they have when their docks 11 go dry, is somehow Duke is holding water back 12 and not letting their water out so they can have 13 water. They have an enormous interest. 14 Obviously, the City of Greenville uses 15 Keowee as a water supply. They are a key 16 player. You have the power plant, the nuc 17 plant, the Keowee. So there is an enormous 18 amount of interest that it will be generated in 19 the basin. From the Corps's perspective there 20 is a huge amount of storage in Keowee and 21 Jocasee that affects how the Corps has to manage 22 Hartwell, Russell, and Thurmond. 23 And so you can't just simply put those two 24 lakes up there and say: Deal with those in the 25 abstract, in isolation. You can't do it. It</p>
<p style="text-align: center;">94</p> <p>1 MR. BOARDMAN: First off, I think you did 2 a great job of bringing this in layman's terms 3 for us who are not as scientific as some of 4 y'all. 5 Help me with -- I'm not real familiar with 6 FERC relicensing and how many hoops you have to 7 jump through. How can we in the basin learn 8 that FERC relicensing for Georgia Power or any 9 other utility to our advantage. 10 MR. MOSS: I'll do my best. I may turn to 11 Hank. He's probably got more experience with it 12 than I do. 13 Each private reservoir operator, power 14 generator is licensed by the Federal Energy 15 Regulatory Commission for the operation of their 16 hydroelectric dam. They had to have -- when 17 they built the dam, they have to have a FERC 18 license. The FERC licenses are for a finite 19 period of time. In most cases those initial 20 licenses were probably 50 years. 21 So we are coming, now, to the point -- 22 some of them I guess were 30 -- but we are 23 coming to the point -- we came in the Catawba -- 24 Duke came to the point of needing to relicense 25 its oldest dams, and so it undertook a complete</p>	<p style="text-align: center;">96</p> <p>1 has to be looked at from the view of the entire 2 basin, because how Duke manages those lakes will 3 ultimately affect how the Corps has to manage 4 the other lakes; and how the Corps manages its 5 lakes will have to affect what limits Duke has 6 right now. They have deals to release a certain 7 amount of water, and I guess sometimes they do 8 and sometimes they don't. 9 But they will be doing a significant 10 amount of environmental work. They will be 11 doing a lot of modeling. They will be doing a 12 lot of public involvement -- Hank, anything 13 additional? 14 MR. STALLWORTH: I think what is relevant 15 -- what I would add that is relevant is the 16 Yadkin River in North Carolina becomes the Pee 17 Dee River in South Carolina. The Corps has got 18 a couple of dams in the upper reaches of that. 19 Progress Energy has a couple of dams down below. 20 They went through FERC relicensing and are just 21 about to conclude that. The Catawba River went 22 through a whole series of Duke dams to come 23 down, and there are a couple of more. There's 24 one more big system in South Carolina that's on 25 the tail end of finishing up. It's a six- to</p>

<p style="text-align: center;">97</p> <p>1 eight-year process. 2 I think what Dean is talking about here is 3 the opportunity that the Duke process represents 4 on the Savannah River. If we could tie the Duke 5 work into some work the two states and the Corps 6 do together -- start looking at things there, 7 we're going to have an awful lot of data and 8 public stakeholders processes that we begin to 9 tie together to take care of the whole river. 10 Duke -- I'm not sure -- I'm not sure about the 11 Georgia Power dams. 12 MR. MOSS: I don't know what the schedule 13 is. 14 MR. STALLWORTH: I imagine they're in the 15 2014/2016 range. It represents a real 16 opportunity in terms of money that will get 17 spent. For us to put together some money to 18 spend with the Corps to try to come up with a 19 good picture of this system. 20 MS. TAYLOR: I've represented the DNR and 21 the Duke Power relicensing as well as the 22 Catawba -- I mean, typically for utilities of 23 this size that are seeking relicensing it costs 24 them about \$10 to \$12 million simply to get a 25 license. Most of that money is spent on</p>	<p style="text-align: center;">99</p> <p>1 process that we also need to be a little bit on 2 guard about is FERC is capable of imposing 3 requirements that kind of work against us. I'll 4 give you a good example: When the Tallulah 5 Falls dam was relicensed, they required a 6 certain amount of water being released for 7 rafters and adventurist and people to return the 8 stream to its natural high-flow periods of time 9 artificially. 10 So you are releasing gobs of water going 11 down through Tallulah Gorge. It passes you -- 12 bypasses your water intakes. I can't remember 13 how often those releases are. 14 MR. HOLCOMB: Two times a year. 15 MR. TANNER: You have to be on guard, that 16 they can come up with that kind of stuff that 17 doesn't have anything to do with water supply 18 for human beings. 19 One thing, Dean, that you said that 20 troubles me a little bit -- and that is that 21 it's a simple process. That part about it I 22 like. You said let the states make their own 23 decision about how to use the water. 24 The concern I would have with that -- 25 everybody knows right now we're the big user.</p>
<p style="text-align: center;">98</p> <p>1 environmental studies, and they look basin-wide. 2 So the opportunity that Dean is talking about is 3 not just looking at those particular reservoirs, 4 but the stakeholders that take part in the 5 negotiations for a license are basin-wide. 6 Duke -- what they did with the Catawba 7 relicensing is engage in a settlement agreement, 8 which is the method they like to see licensees 9 undergo. It's cheaper, relatively speaking. 10 It's a shorter process. You get massive numbers 11 of stakeholders together all the way up and down 12 the basin. 13 Both states -- I was involved in 14 negotiating in a thundering herd of lawyers in a 15 room. There must have been 70 negotiating 16 parties. They have a massive, sophisticated 17 structure. They hire Kerns & West. It's a 18 large consulting company to manage this whole 19 thing. 20 It presents a great deal of opportunity. 21 Duke for one spends a lot of their own money 22 that we don't have to spend. We have the 23 opportunity to work on downstream flow, because 24 that's where a lot of that money goes toward. 25 MR. TANNER: One of the things about that</p>	<p style="text-align: center;">100</p> <p>1 So if we have to sacrifice and spend a lot of 2 money, it seems to me we have to be a little bit 3 concerned about what happens to that water, how 4 is that water used. We ought not to be put in a 5 position, I don't think, of conserving -- 6 spending a ton of money so you can waste it. 7 I'm not suggesting you would, but follow where 8 I'm going with that. 9 When we were negotiating with Alabama, one 10 of the difficulties we had was we had a permit 11 system in Georgia, and so in order to do a water 12 withdrawal, you had to get a permit to do it. 13 And in Alabama there was no such thing. You put 14 a pipe in the river or in the lake, pump all the 15 water you want to pump, no restrictions of any 16 kind. 17 So it made the negotiations very 18 difficult, because you couldn't have one person 19 saying I want to do whatever the hell I want to 20 with the water, but I want you to restrict your 21 usage, if you follow where I'm going with that. 22 MR. MOSS: The only point I'll make on 23 that is first it seems to me -- well, let me say 24 that I believe that by the time we work this 25 through that South Carolina will, in fact, have</p>

<p style="text-align: center;">101</p> <p>1 a withdrawal permit. It has helped a little 2 bit, because, obviously, if we're pulling from 3 the lakes, any of the lakes -- the lake owner, 4 whether that's the Corps or Duke -- is going to 5 be monitoring and restricting the amount of 6 water, accounting for the amount of water that 7 is removed from the lake. The Corps has its own 8 way of doing it. Duke has its way of doing it. 9 Below the lakes as we move downstream, different 10 story. 11 But I think South Carolina will have -- we 12 have got a ways to go. We have got some issues 13 to resolve, but we have come a long way on this. 14 The main issue in our deal right now is hinging 15 around a definition of minimum stream flow and 16 how we account for minimum stream flow. The 17 mechanics of permitting, the mechanics of those 18 kinds of things are pretty well-resolved -- 19 length of permits, who has to apply, who is 20 grandfathered, who is not grandfathered. That 21 stuff is pretty well done. 22 It's the issue now of what is the target 23 minimum stream flow we're trying to maintain in 24 the streams. My proposal, Joe, is that we 25 define -- assuming that everybody has to account</p>	<p style="text-align: center;">103</p> <p>1 Georgia has probably today the lion's 2 share of consumptive use, principally because of 3 its power plants, I think. A lot of the water 4 from Augusta comes back. A lot of the water 5 from the upstream users comes back. At the same 6 time we have got an existing inter basin 7 transfer permit that Greenville has for 150 8 million a day. One of these days that rubber is 9 going to meet the road. 10 To me we need to sort it out. It may be 11 that it's a 60/40 met or 55/45. I don't know 12 what it is, but until we get there we haven't 13 got anything to negotiate on. I want to 14 negotiate on the terms of us agreeing on what 15 the natural systems need and what our current 16 uses are and what the system ultimately will 17 support under different hydrologic and 18 climatologic circumstances. 19 MR. BELL: Can I make a suggestion? 20 Georgia has just completed -- I shared this with 21 Dean and Mike -- a statewide comprehensive water 22 management plan. As a spin-off of that starting 23 this year is that Georgia is doing a water 24 resource assessment. Also as part of that plan 25 is a coordination with South Carolina,</p>
<p style="text-align: center;">102</p> <p>1 carefully for the water that they withdraw, that 2 we define ahead of time, now, what the 3 capability of the system is. One of the 4 problems that I saw you guys had in the 5 Chattahoochee was that there was an agreement 6 between the states as to what the capability of 7 the system was -- whether it was how much water 8 do we need for endangered species in the 9 Apalachicola, how much do we need for power 10 plants on the Alabama side -- whatever it was 11 you didn't start into the process with kind of 12 an agreement on that stuff. 13 So when you tried to figure out how to 14 solve the allocation problem, you kept coming 15 back to the -- my notion is we got to figure out 16 the minimum requirements problem and agree on 17 that as a state. We got to say we agree. We 18 need 4000 cubic feet per second here, or we need 19 this much stage at this point, or we need water 20 quality of X here at this point. 21 If we can agree on that, then the issue 22 becomes -- if the system is capable of the 23 producing X million gallons a day or acre feet 24 per day of consumptive use, how do we allocate 25 that between the states.</p>	<p style="text-align: center;">104</p> <p>1 particularly on the Savannah River basin. 2 What I would suggest is we could get the 3 two technical task forces -- Jim and Jeff and 4 David -- and look at what Dean is proposing 5 here, with the understanding that what Georgia 6 has done to date -- and maybe present that -- 7 you know, follow it up quickly at our next 8 meeting, which hopefully will be within the next 9 two or three months. So that's -- do you think 10 that's wrong of me to say? I'm taking too much 11 pain medicine. 12 MS. COUCH: No, Gus. I think that's right 13 on. I think one thing -- Dean, when you came 14 with these concepts to this group last fall, it 15 was at the time that we were anticipating the 16 development of the State plan and Governor 17 Purdue did sign that plan about the middle of 18 January. 19 There are a number of aspects of your 20 concepts in here that do port well or are very 21 complimentary to what Georgia has set forth for 22 all of its water sheds. And in that regard 23 water sheds like the Savannah, where we have 24 shared waters, do require us to develop a way to 25 collect the information, look at the objectives,</p>

<p style="text-align: center;">105</p> <p>1 do the work. And we can't ignore -- and we 2 don't intend to ignore them where the boundary 3 is. I think there's a way to take the concepts, 4 see how they align with the State has otherwise 5 set for itself to be accomplished by 2011.</p> <p>6 Just a couple of things here, because not 7 everybody read the document. It's pretty dense. 8 We have a very aggressive time frame. One of 9 the key features -- and you point to the need to 10 do this in here -- there's a technical dimension 11 to it, but there's also the dimension of public 12 participation.</p> <p>13 By the end of this calendar year Governor 14 Purdue and our speaker lieutenant governor will 15 have appointed a 25-member regional council for 16 water planning for the Georgia portion of the 17 Savannah River. We are for our purposes also 18 including the Ogeechee River basin in that 19 design, because there's a lot of communities 20 that sort of straddle both those basins on the 21 lower end.</p> <p>22 So without getting into a lot of 23 discussion here, we have within the next year -- 24 let's say moving out from where we are now into 25 the first and second quarter of 2009 calendar</p>	<p style="text-align: center;">107</p> <p>1 have an intersection. There's a time dimension 2 to this. The FERC process is one that is going 3 to take five, six, seven years beyond where we 4 are today. But to the extent that the states -- 5 at least in the first generation of what would 6 be contributed to a Georgia plan, but also 7 ultimately information -- a common information 8 base that could be the basis for a common 9 understanding of our purposes, objectives, and 10 our long-term needs, that puts the states in a 11 rich setting or place, rather, to take that 12 information into the FERC process.</p> <p>13 MR. MOSS: That was the basis of this 14 concept, which was trying to say: Let's 15 formalize that, to the extent we can.</p> <p>16 MS. COUCH: Maybe we can spend some time 17 here taking a look at what we have set forth and 18 how we can address that. We have a highly 19 structured mechanism by which we need to achieve 20 this through these regional council processes. 21 Whether or not a smaller team -- like you 22 suggested here -- or some other mechanism for 23 working across the basins can be identified -- 24 to the extent that we can identify some 25 complementary activities both in time</p>
<p style="text-align: center;">106</p> <p>1 year a plan that's pretty detailed as it relates 2 to water resource assessments. Assembling and 3 modeling the information as it relates to 4 consumptive use of water, a similar capacity 5 regional, economic, and population forecasts, 6 and 30-year projections for water demand.</p> <p>7 So we have got a lot of work that's keyed 8 up, and it's currently funded for that portion 9 of the basin. So while what we're going to be 10 doing over the next year and a half is preparing 11 the information that then goes to the regional 12 council, it's diversified across all sectors of 13 water use up and down the basin. We're trying 14 to produce for both the Savannah River basin as 15 well as all the Georgia river basins by 2011 a 16 first generation of regional water plans. Those 17 are very important in this regard.</p> <p>18 Our water withdrawal permitting and our 19 availability of low interest loans for any 20 future infrastructure needed to be permitted or 21 funded by the revolving funds for the states 22 will only be done for facilities in compliance 23 with that plan.</p> <p>24 Earlier we had talked about the FERC 25 process. I do believe the FERC process does</p>	<p style="text-align: center;">108</p> <p>1 technically, but also in terms of public 2 participation the better off we're going to be.</p> <p>3 Our process for selecting our regional 4 councils will probably start in earnest in the 5 next couple of months but won't be actually done 6 until the end of the calendar year, so that if 7 this group reconvenes in a June time frame -- if 8 there's a date certain there that gives us a 9 time in anticipation of that June meeting to 10 work together on ideas and concepts for 11 collaboration over the next three-year period.</p> <p>12 Let's have a smaller break-out that deals 13 with some opportunity to talk about the Georgia 14 State law requirement and how the timing and the 15 nature of both the funding and the opportunities 16 comport with some near-term objectives of South 17 Carolina.</p> <p>18 MR. BOARDMAN: That's a good suggestion. 19 Listening to Dean's proposal -- and I have done 20 one read of the water plan -- I think you're 21 right. There are a lot of things that do jive. 22 Gus's comment to send this to staff to look it 23 over and see where there are, I guess, 24 components that go together -- we all ought to 25 do that. I think that some of your comments,</p>

<p style="text-align: center;">109</p> <p>1 Dean, are taken or addressed in the water plan. 2 It might be in different form, a little tweak in 3 there, but I think we ought to look at that. 4 MR. BELL: That's what I meant: The two 5 technical staffs get together and take this and 6 give a tweaked version of it at the next 7 meeting. 8 MR. BOARDMAN: But it would be nice -- 9 speaking for myself -- if we could come back to 10 the next meeting having done that to move on and 11 don't drag it out. 12 MR. WALDREP: Is there some way to inject 13 in this process an element of time, 14 projections -- not necessarily deadlines but 15 target times that everyone is moving toward that 16 have an effect upon the process, I guess is what 17 I'm thinking of -- just an element of some kind 18 of time. 19 It would be helpful to us to know when 20 we're moving forward. We got a long process 21 here, apparently. At the same time there are 22 certain things that are more urgent than others. 23 I say that from the standpoint -- it's helpful 24 for me in trying to understand how we're moving 25 along.</p>	<p style="text-align: center;">111</p> <p>1 think we have a unique opportunity here to do 2 that between the two of us. We are in a good 3 position. So the sooner -- and if we have 4 progress and are moving along, then that takes a 5 lot of tension off the table and lots of places 6 and makes it easier for us. 7 MS. COUCH: Let's be clear: Georgia is 8 100 percent committed to many of the same 9 concepts you have in here. In fact, our 10 legislator super majorities in both the house 11 and senate passed and the governor signed it. 12 Three years -- in 2011 -- we will have a 13 regional water plan that governs the way in 14 which permitting and infrastructure development 15 happens on the Georgia side of this basin. 16 Having said that -- I use this phrase 17 intentionally -- that's the first generation. 18 The intent is every knowledge and information is 19 constantly increasing. There's some information 20 we would like to have today that we know we will 21 not have available to us. And so the water plan 22 is intended to be updated on a cyclical basis by 23 2010. We have to start the work on the updated 24 state plan even in advance of the regional plans 25 being done.</p>
<p style="text-align: center;">110</p> <p>1 MR. BOARDMAN: I would agree. I feel like 2 the MOU that both states entered into was a huge 3 step forward, and I think to -- on that subject, 4 we checked that off. I see this as the next 5 step. This is a much, much bigger step, 6 obviously. Dean, what you proposed is huge. 7 It's hard to get our arms around it, but we have 8 got to start somewhere. We have got to start 9 somewhere. 10 MR. BELL: I think with a technical review 11 there are some things that could be done in a 12 reasonable -- you know, pretty quick. There's 13 other things that are going to take longer to 14 do. 15 MR. MOSS: One point I'd make is when Stan 16 talked about -- you know, his idea that is what 17 he needs is the states collectively working 18 together to help define long-term how the 19 reservoirs need to be managed and what to use 20 the water for. 21 I guess I would say that having watched 22 you guys on the other side of the state to try 23 to do that without the support, necessarily, of 24 your sister states on that side -- every time 25 you try something, it turns into a conflict. I</p>	<p style="text-align: center;">112</p> <p>1 We have a cyclical mechanism that allows 2 us to capture and include information that goes 3 into constantly refining the consumptive use 4 budgets or consumptive use assessments that we 5 have already outlined, and we have invested the 6 development of hydrologic models in the last 7 year. So that's important to know. 8 One thing that's -- just sort of a comment 9 that leads back in a couple of points you made 10 earlier. It's of interest that in your 11 permitting discussions you're talking about how 12 to deal with low flows or non-depletable flows 13 or whatever phrase you're using in your work in 14 South Carolina -- that's also an issue for us. 15 We do have a non-depletable flow. We have 16 a policy of our Department of Natural Resources 17 board on minimum instream flow requirements. 18 And not surprisingly, those historically have 19 been driven by water quality, which is not -- 20 it's not inappropriate, but it's quickly 21 becoming outdated. I think it's one of the 22 reasons why we need to be thinking about a 23 planning process, a long-term understanding of 24 both the consumptive uses and other uses of 25 water that allows whatever we do together as a</p>

<p style="text-align: center;">113</p> <p>1 state to be adapted.</p> <p>2 In developing a plan that includes the</p> <p>3 development of a consumptive use assessment we</p> <p>4 have to start with current state regulations;</p> <p>5 but also recognize that for some basins there</p> <p>6 are other types of instream flows that while may</p> <p>7 not derive from state law, certainly derives</p> <p>8 from federal law. That's the very sort of</p> <p>9 issues we're facing on the Florida and Alabama</p> <p>10 side.</p> <p>11 Dean, one thing I was pleased to see is</p> <p>12 your acknowledging that most states' economy and</p> <p>13 environment are knit together by how we are</p> <p>14 using our consumptive use of the basin. In</p> <p>15 Florida and Alabama they acknowledge no</p> <p>16 consumptive use of water from Georgia whatsoever</p> <p>17 is appropriate.</p> <p>18 MR. MOSS: I mean, you just need to look</p> <p>19 at this map. You see where the interstates</p> <p>20 cross. Every one of those interstates crossing</p> <p>21 has a major metropolitan area that basically</p> <p>22 spans the state line.</p> <p>23 MS. COUCH: It's a very different</p> <p>24 opportunity from the state we are the head water</p> <p>25 system delivering water downstream and in both</p>	<p style="text-align: center;">115</p> <p>1 complex system. You mentioned a couple of times</p> <p>2 consumptive use of power plants. You know,</p> <p>3 whether you are the Corps generating power for</p> <p>4 CEPA that's being distributed paper-wise to</p> <p>5 preference customers in both states -- even</p> <p>6 Plant Vogtle is hooked into the grid, and Lord</p> <p>7 knows where the power is going to go.</p> <p>8 These systems are all hooked together,</p> <p>9 with the power being generated in South Carolina</p> <p>10 and being generated in Georgia. Once again, you</p> <p>11 know, it could be going some other place.</p> <p>12 MR. MOSS: You could build an economic</p> <p>13 model that would take you all day for what was</p> <p>14 going on.</p> <p>15 MR. WALDREP: Everything that I've heard</p> <p>16 -- everything that I understand is that our</p> <p>17 process is predicated on a common language and</p> <p>18 common scientific data, and that that is what</p> <p>19 we're working toward here. Having said that,</p> <p>20 Braye and Gus, I think your suggestion about the</p> <p>21 committees -- technical committees meeting</p> <p>22 together and --</p> <p>23 MR. BELL: Getting back at the next</p> <p>24 meeting.</p> <p>25 MR. WALDREP: Yes, it's well-served.</p>
<p style="text-align: center;">114</p> <p>1 situations are facing the basic -- apparently</p> <p>2 non-negotiable point that consumptive use by</p> <p>3 Georgia is not going to be acceptable. That</p> <p>4 makes discussing --</p> <p>5 MR. MOSS: Hard.</p> <p>6 MS. COUCH: -- sharing of water very hard.</p> <p>7 MR. TANNER: One thing, Dean, I would say</p> <p>8 I thought you did a very good job putting that</p> <p>9 together. I think the more we know about this</p> <p>10 system the better off we're going to be.</p> <p>11 One thing that is very important is if we</p> <p>12 can agree on the basis of whatever kind of study</p> <p>13 it is we are doing so that the end product is</p> <p>14 something we both agree on. One of the problems</p> <p>15 we had on the other side of Georgia was we</p> <p>16 couldn't even agree on -- we had a great</p> <p>17 difficulty agreeing on what the state components</p> <p>18 were going to be, what the model of those</p> <p>19 components were going to be. And then most of</p> <p>20 the time we disagreed on the outcome. We got an</p> <p>21 opportunity, I think, here with whatever we do</p> <p>22 we can agree on how to go about it. Then we can</p> <p>23 agree with what the outcome is, and we got the</p> <p>24 basis to talk about what we see as solutions.</p> <p>25 There are some -- you also said this is a</p>	<p style="text-align: center;">116</p> <p>1 MR. BOARDMAN: We can set a goal of coming</p> <p>2 back to the next meeting with comments on how</p> <p>3 the two things do mesh together.</p> <p>4 MS. COUCH: I'm not sure I want to wait</p> <p>5 that long for at least having a report back that</p> <p>6 could be shared back out to everyone. I wonder</p> <p>7 if we could -- maybe late April, first part of</p> <p>8 May have at least a concept or summary of these</p> <p>9 concepts in relationship to the state plan, and</p> <p>10 have that shared out for discussion and</p> <p>11 conference calls.</p> <p>12 MR. BOARDMAN: I love that idea. Anything</p> <p>13 we can do prior to these meetings so we can see</p> <p>14 information here first that we can digest and</p> <p>15 formulate comments and come to the meetings</p> <p>16 ready to work -- I'm all for that. That would</p> <p>17 be a better use of our time.</p> <p>18 MR. McSHANE: Realistically looking at</p> <p>19 this -- time is important to all of us, because</p> <p>20 by 2011 -- which reading your plan and some</p> <p>21 prospective dates of 2011 and legislation being</p> <p>22 considered in South Carolina -- there will be a</p> <p>23 new administration. There will be a whole new</p> <p>24 group of people around this table. Certainly, I</p> <p>25 can assure you that there will be at least one</p>

<p style="text-align: center;">117</p> <p>1 new person in this role. It keeps me bound to 2 why we are here to begin. It wasn't just to 3 highlight potential issues that our states have. 4 It was to come back with solutions to 5 recommendations to our mutual governors to bring 6 those back to that process in each state. 7 I look at that in being the ultimate clock 8 in many ways. They will not be governor in 9 2011. I want to see if we can do it in April or 10 May versus June. That gives us more time to 11 work through some things. I'd have to turn and 12 look at some staff. 13 MR. WALDREP: What about May 1st? 14 MR. McSHANE: That seems reasonable. 15 MS. COUCH: That's the end of April, 16 beginning of May. 17 MR. KISNER: Does our staff understand the 18 objective? 19 MR. MOSS: What I have presented is a very 20 broad-brush conceptual notion. So, first off, 21 we have the Georgia plan and its ideas and 22 mandates and schedules and tasks and things that 23 have to be done inside the plan. The first step 24 is to look at that plan and take -- assume that 25 the objective that we have talked about here</p>	<p style="text-align: center;">119</p> <p>1 process in a way that y'all can reflect on to 2 see which of those pieces comport with areas of 3 either process, timing, or objective that you 4 feel are in alignment or the identification of 5 areas that are not. 6 This is conceptual. Aspects of the state 7 plan are conceptual but go well beyond that. If 8 you could take a look at the finer level of 9 detail that we have there on process, time, and 10 objective. 11 One thing that I would caution us about 12 right now is that there are many aspects of work 13 that we want to do for the system, and they 14 would ultimately lead toward a conversation of 15 allocation. When I use the word "allocation," 16 I'm talking about in the context of an agreement 17 between two sovereign governments. 18 We're not here with a work plan, if you 19 will, or deliverable for our governor at this 20 moment to talk explicitly within in body on 21 allocations of the Savannah River. 22 MR. MOSS: We are the long way from the 23 point of even being able to start to do that. 24 MS. COUCH: I think one of the outcomes of 25 this conversation is beginning the process of</p>
<p style="text-align: center;">118</p> <p>1 stands. The objective is to figure out how to 2 allocate the consumptive use. And to the extent 3 that the ideas I've presented make sense in the 4 context of the work that's projected out in the 5 Georgia plan and the kinds of things that South 6 Carolina will be doing, and what the Corps is 7 going to be doing. 8 Then let's put together a path -- 9 more-detailed path forward that shows how those 10 pieces fit together; and layout a very tentative 11 schedule and say in the context of the work 12 that's being done by others, by the states and 13 everybody else. This is how this sets out and 14 lays out. 15 That to me is the first step more than 16 getting too detailed into who and how. Let's 17 just make the schedules work together and 18 provide some tasks and see how they play out. 19 MS. COUCH: Let me try to rephrase that 20 and see if we are saying the same thing: 21 Between what is documented in this plan as 22 well as the detailed work plans that we have 23 developed in order to actually guide the 24 day-to-day work, that material once reviewed 25 should be able to talk to timing, objective,</p>	<p style="text-align: center;">120</p> <p>1 moving forward to what would need to be in place 2 in terms of data, information, and understanding 3 so that our state governors can determine at 4 what time and stage any -- 5 MR. McSHANE: We are in agreement with 6 that. 7 MR. MOSS: Absolutely. 8 MS. COUCH: In the general public there 9 maybe a high degree of confusion on that issue. 10 So May 1st would be our target date for the 11 staffs working together to bring a report back 12 to the committee members here. And we have 13 chosen intentionally the three-year window, 14 Mike, for many reasons, one of which is to 15 ensure there's a level of completion before a 16 change of administration. 17 MR. McSHANE: We share your thoughts on 18 that. 19 MS. COUCH: And to leave that work at a 20 level of completion that allows the state to 21 progress into the future and adapt at that point 22 in time. I think we do have a window, and it is 23 in part framed by that. 24 MR. WALDREP: On that note, I guess my 25 anxiety gets to be when we talk about that</p>

<p style="text-align: center;">121</p> <p>1 three-year window, is that if there is a change 2 in administration and everybody sitting here is 3 not sitting here three years from now, hopefully 4 this will be in such a concise and well-based 5 manner that our successors will not have to 6 reinvent the wheel and start all over again. 7 Because that seems to be a common thing 8 that happens in government time and time again. 9 So if we do it right, you know, we should have 10 infallible logic and reirrefutable evidence here 11 that we have done our job. 12 Having said that, we got May 1 as a 13 deadline. What about the next meeting that we 14 would have? 15 MR. McSHANE: There was discussion that I 16 recall hearing -- maybe from Mr. Bell -- about 17 trying to orient ourselves to meet more 18 frequently than just what I think is 19 historically been twice a year, perhaps as often 20 as quarterly, which I'm certainly open to. I'm 21 not suggesting it has to be determined today, 22 but to be thinking about. 23 Gus, am I reading -- 24 MR. BELL: Where I was coming from there 25 is that Georgia has completed its work and now</p>	<p style="text-align: center;">123</p> <p>1 summer with the potential extended drought -- 2 potential drought issues. I would suggest, 3 Senator Waldrep, you elicit some dates from your 4 team to forward, and Carol can do the same 5 thing, looking around June 1 -- I don't know 6 what week that is, if that's Memorial week or 7 what. 8 MR. WALDREP: Look for sometime around 9 June 1. 10 MR. McSHANE: Which would put the next 11 meeting after Labor Day in September. 12 MR. HOLCOMB: June 1 is a Sunday. 13 MR. McSHANE: So the week of June 1. 14 MS. COUCH: That first week in June. Then 15 in September after Labor Day would be the next 16 window. I'd like to get the staff report back 17 to everybody by May 1. That gives everybody 18 time to digest it. It may be we would want to 19 do conference calls amongst key individuals to 20 explore issues. 21 MR. WALDREP: I like the idea of what 22 happened this last time when Gus and Braye and 23 Mike and Dean got together to do some ground 24 work before we got to this meeting. I thought 25 that was apparently very helpful, was it not? I</p>
<p style="text-align: center;">122</p> <p>1 it's putting in into the regional plans. 2 Therefore, we do have -- again, I'm just -- we 3 don't need meetings just to have meetings, but 4 to get to the end. I think quarterly, at least. 5 I'm throwing that out on the table. 6 MR. BOARDMAN: I agree. I don't want to 7 speak for Carol, but last year was pretty busy 8 for Carol and the staff. I think now so much is 9 happening. The sun and the moon are aligning on 10 this base. I think as far as Georgia Power and 11 Plant Vogtle and the work that's being done with 12 TMBL -- there's a lot things that are happening. 13 I think the opportunity -- there's a 14 window of opportunity for us now here, and 15 everybody is focussed on it. I think meeting 16 more frequently rather than twice a year would 17 be much let better for us right now. 18 MR. McSHANE: I'll take that as the answer 19 broadly is: Yes, we ought to meet more 20 frequently or more regularly and we need to try 21 to get some dates. 22 Carol, you mentioned say by June 1, 23 because we all know in summer people tend to 24 scatter. It's much more difficult. I expect we 25 will be having lot of conversations over the</p>	<p style="text-align: center;">124</p> <p>1 would think that's a good idea. Sometimes I 2 like to just get a translation. 3 MR. McSHANE: We would by May 1 probably 4 have a pretty good opportunity to know where 5 we're going in our current legislative process 6 so we can report back. 7 I hear what Mr. Tanner -- that's been -- 8 Mr. Tanner may have brought it up the very first 9 time we met, and I've been conscious of that. 10 It's hard to have a state come and good faith 11 and negotiate if we don't have some equitable 12 issues here. 13 I think the commitment is to genuinely 14 have that in the right manner that speaks well 15 for our process. We will know more by May 1. 16 We will probably know more by this afternoon. 17 MS. COUCH: So we have a general plan. 18 MR. McSHANE: You've been gracious to host 19 us. We will offer to host the next one. 20 MS. COUCH: Thank you. That would be very 21 welcome. 22 We have no public speakers into. 23 MR. McSHANE: I think what I heard was a 24 suggestion of Aiken or in this area to put it 25 not too much farther than where you are today.</p>

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1 MS. COUCH: That will be good.
2 MR. McSHANE: We will come up with the
3 mechanics of that.
4 MS. COUCH: Excellent. Thank you. Is there
5 any other business to come before us here today?
6 MR. WALDREP: The public has been served
7 here?
8 MS. COUCH: We have no public speakers.
9 Let me just acknowledge the work of our fine
10 staff. As you can see from the presentations,
11 there's been a awful lot of work that's been
12 done between now and our last meeting. We will
13 keep the momentum going.
14 Thank you all.
15 (Meeting adjourned at 1:37 p.m.)
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1 C E R T I F I C A T E
2
3 S T A T E O F G E O R G I A :
4 C O U N T Y O F F U L T O N :
5
6 I hereby certify that the foregoing
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Annie O'Hara, CCR-B-2340