

IN RE: KENTUCKY RIVER AUTHORITY

MEETING NO. 145

June 30, 2009
1:00 P.M.
Bush Building
403 Wapping Street
Frankfort, Kentucky

APPEARANCES

Mr. Randall Christopher
CHAIRMAN

Mr. Bob Ware
Judge Executive Ted L. Collins
Mr. Warner J. Caines
Mr. Daryl E. Newby
Mayor Michael D. Miller
Dr. Donald C. Haney
Mr. Jerry Graves
Proxy for Secretary Jonathan Miller
Mr. Bill Caldwell
Proxy for Secretary Len Peters
Mr. R.C. Day
Mr. Tim Hazlette
MEMBERS OF THE KENTUCKY
RIVER AUTHORITY

Mr. Stephen Reeder
EXECUTIVE DIRECTOR

CAPITAL CITY COURT REPORTING
TERRI H. PELOSI, COURT REPORTER
900 CHESTNUT DRIVE
FRANKFORT, KENTUCKY 40601
(502) 223-1118

APPEARANCES

(Continued)

Mr. Don Morse
Mr. David Hamilton
Ms. Sue Ann Elliston
Ms. Kayla Dempsey
KENTUCKY RIVER AUTHORITY STAFF

GUESTS

Mr. Jeff Dingrando
Mr. Deron Rambo
Ms. Vicki Goins
Mr. Tom Marshall
Mr. David Brown Kinloch

AGENDA

Call to Order1

Approval of KRA Minutes #1441

Financial Report - Don Morse1 - 7

Consideration of additional projects to
utilize excess funds - Stephen Reeder and
David Hamilton.....7 - 23

Consideration of modifications to policy of navigating
over dams in high water - Stephen Reeder23 - 27

Presentation on drought response - Bob Ware
and Bill Caldwell27 - 71

Consideration of modifications to no-trespassing
policy of lock and dam property - Stephen Reeder
and Sue Elliston71 - 87

Consideration of Memorandum of Understanding between
City of Frankfort and KRA - Stephen Reeder87 - 90

Consideration of preliminary modifications on
hydro lease - Stephen Reeder90 - 104

Consideration of Emergency Response Plans for all
locks and dams - Stephen Reeder, Tim Hazlette
and Judge Ted Collins104 - 120

Engineer's Report120 - 122

Director's Report121 - 122

Chairman's Report122

Adjourn.....123

Court Reporter's Certificate124

INDEX OF MOTIONS

MOTION TO APPROVE MINUTES OF MEETING #144PAGE 1, LINE 13

CHAIRMAN CHRISTOPHER: I hope we've had a chance to review our minutes. I'll accept approval of the minutes from our last meeting.
MAYOR MILLER: So moved.
MR. WARE: Second.
CHAIRMAN CHRISTOPHER: All in favor, signify by saying aye. Opposed, likewise. The minutes are approved.

MOTION TO APPROVE FINANCIAL REPORTPAGE 6, LINE 24

CHAIRMAN CHRISTOPHER: Can someone make a motion to approve?
MR. WARE: Mr. Chairman, I'll make a motion that we approve the Financial Report.
MR. NEWBY: Second.
CHAIRMAN CHRISTOPHER: All in favor, signify by saying aye. Opposed, likewise. Motion carries.

MOTION TO UTILIZE EXCESS FUNDS FOR PRIORITIZED PROJECTS TO INCLUDE LOCKS AND DAMS 1, 2, 7 AND 8, AND MOTION TO APPROVE DAM 10 PROJECT TO COMPLETE NEAR-TERM SOLUTION BY INSTALLING CUTOFF WALL IN LOCK CHAMBER, STABLIZING LOCK AND INSTALLING A MINING VALVE IN ORDER TO SUPPLY POOL 10 IN TIMES OF DROUGHT, AND TO FUND THE PROJECT FROM MONIES PREVIOUSLY SET ASIDE FOR THIS PROJECTPAGE 15, LINE 6

MAYOR MILLER: I'll make a motion---
MR. HAZLETTE: Second.
MAYOR MILLER: ---that we do what needs to be done, ever how it needs to be worded.
CHAIRMAN CHRISTOPHER: Mike Miller makes a motion and seconded by Tim that we follow this prioritized list as outlined by Dave and Steve.
MR. WARE: Is this motion just for those four projects that we're looking at?
CHAIRMAN CHRISTOPHER: It's prioritizing those four projects. That's Lock and Dam 1, Lock and Dam 2, that partial of 7. Is that including 8, that we go ahead and start the process of 8?
MR. REEDER: Yes, sir.

CHAIRMAN CHRISTOPHER: And then it makes 10 come in there as also part of that prioritized list.

MR. WARE: So, we're including 10?

CHAIRMAN CHRISTOPHER: Yes. The money has already been appropriated for that. Are we okay with that? Any questions, thoughts?

MR. WARE: And that's to utilize any unexpended monies on the two dam projects plus any other available---

CHAIRMAN CHRISTOPHER: Available funding that we have out of the General Fund, as Don outlined.

MR. GRAVES: David, what is the total of those monies, the four?

MR. HAMILTON: The four projects?

MR. GRAVES: Yes, sir.

MR. HAMILTON: The first group, it was \$1.38 million; and for the second one, it was \$2.54 million.

MR. GRAVES: Plus Lock 10, or does the 2.5 include 8 and 10?

MR. HAMILTON: That does not include 10. So, it's \$3.92 million before we include 10.

CHAIRMAN CHRISTOPHER: It's \$3.92 million. We've already appropriated the \$700,000 needed for 10. Actually, we did that a couple of years ago. So, that money has been set aside for quite a while for that.

MR. GRAVES: Okay. I'm just trying to get my---

CHAIRMAN CHRISTOPHER: Good question, Jerry. I have that at \$3.92 million for those projects and then the \$700,000 additional which we already have encumbered in our budget for Dam 10.

MR. WARE: Mr. Chairman, I like the idea, and I don't want to prolong this process any longer, but are there any complexities, Steve, with respect to the work on 1 and 2, given the fact that we don't have ownership of those dams?

MR. REEDER: No. We have the right to work on them for maintenance purposes. This is pretty light maintenance compared to what Fuller initially spec'd out for them. David reduced the scope of these projects. We don't have any problem spending money on those to

basically try to protect the pool.

MR. WARE: And we couldn't hope to have any Corps' participation in this process?

MR. REEDER: No, absolutely not.

CHAIRMAN CHRISTOPHER: All right. We've got a motion. Any other discussion, comments? Yes, sir, Don?

DR. HANEY: Let's go over the cost of those again. We started out in excess of \$1.5 million excess funds, right?

CHAIRMAN CHRISTOPHER: Yes, on 1, yes.

MAYOR MILLER: You're going to have excess at

Dam 9.

DR. HANEY: The excess from Dam 9---

MAYOR MILLER: From Dam 9 is about a million, right, Don?

CHAIRMAN CHRISTOPHER: I think it's 1.2.

MAYOR MILLER: And then the excess at Dam 9 is about 1.2.

DR. HANEY: Excess at---

MAYOR MILLER: Is that right, Steve?

MR. REEDER: Unappropriated Tier II money about 1.2 and excess at Dam 9 would be about 1.7?

MR. MORSE: Nearly a million three.

MR. REEDER: A million three. A million two and a million three.

DR. HANEY: Okay. So, that adds up to 2.5. And what are we spending; 3.8 plus Boonesborough?

CHAIRMAN CHRISTOPHER: 3.92.

MR. HAMILTON: But Boonesborough is in a separate. It's got its money---

DR. HANEY: I understand that.

MR. HAMILTON: So, it would just be 3.92.

DR. HANEY: But if we have an excess of 2.5 on those other two projects--okay.

MR. MORSE: Do you want me to go over that?

CHAIRMAN CHRISTOPHER: Share it with us one more time.

MR. MORSE: We had to set up a contingency on both the engineering and the construction costs for the Dam 3 project. After having done that, we've got \$1.2 million left from the General Fund bonds set aside for that project.

We've got about \$1.3 million left excess contingency on Dam 9 after these change orders go through. We've got some excess Tier II

funds because we only paid interest this year on our bonds of about \$1.24 million. We have excess Tier I fees that we could access if necessary after paying for Dam 10 of another \$300,000. And we have a little bit coming back from that structural study of about \$60,000. All together, we should have around \$4 million of excess funding that we could utilize.

Now, to do that, we're going to have to get some approval from the Budget Office, I guess A&R Committee approval of substitution of funds. We're in kind of a quandary. We've got \$18.3 million of Agency funds still authorized but we can't use it, and maybe they will let us use our cash as a substitute for that.

We've got about \$4 million available. We've got \$3.9 million in projects. That won't give you a full 10% contingency funding, but I guess we'll just have to evaluate it when we get some bids in.

MR. REEDER: Shouldn't need it on those small projects.

CHAIRMAN CHRISTOPHER: All right. I agree. That's a whole lot clearer. We've got \$4 million to spend and we're looking at \$3.92 million worth of projects. Good questions. Anything else?

All in favor. Opposed. Motion carries.

**MOTION TO APPROVE MODIFICATION TO POLICY OF
NAVIGATING OVER DAMS IN HIGH WATERPAGE 27, LINE 15**

MR. REEDER: I'd like to have that approved, Mr. Chairman.

MR. HAZLETTE: Is that sufficient coverage?

MR. REEDER: Yes, I think any damage they would do to it because--I mean, yes and no. If they tore the dam down, I mean, it sure wouldn't be, but with 12 feet of water, they're not likely to. They might cause some damage there. I don't think it's realistic to cause any with 12 or 14 feet of water in there. And by adopting a policy, if they do it when there's not that much water or without asking us, then, they're going to be liable

for it, whatever it may be.
They've already come over the dam in the high water. They're working on the smaller pieces going through the lock, and there's been quite a bit of work on that, and David can tell you more about it, but they haven't done that yet. They're still waiting for the water to subside a little bit.

DR. HANEY: Did they approach anyone about this before they decided on the nature of that project, that bridge project?

MR. REEDER: No, sir. This was after the bids were already in, and the people that asked us were the supplier that was hired later. In fact, it's a division of Mahan that's doing our work at Dam No. 9. They're building the prestressed beams, and I don't know what they would have done. They already had some liaison and they knew us and they came to us with it. I don't know what they would have done.

DR. HANEY: It's like building a boat in a basement, isn't it?

MR. REEDER: I heard about it and talked to the Highway Department about it; and no one, the Highway Department or nobody else talked to me about transporting that stuff over the dam. And I said, what have you got against trucks? I mean, this thing is kind of problematic fooling with this stuff. They said, well, the beams that they're going to bring up here that they can't truck are too tall. They wouldn't go under these interstate bridges. I've never seen that. They must be pretty high because interstate bridges are built to accommodate a tank on the back of a truck. They are a National Defense Highway that President Eisenhower started and it was built to put a tank on a lowboy.

JUDGE COLLINS: I'll make a motion to approve the policy.

DR. HANEY: Second.

CHAIRMAN CHRISTOPHER: All in favor. Any opposition? Motion carries.

**MOTION TO APPROVE MODIFICATION TO
NO-TRESPASSING POLICY OF LOCK AND DAM
POLICY, WITH AMENDMENTSPAGE 87, LINE 9**

MAYOR MILLER: Do we need a motion to approve?
CHAIRMAN CHRISTOPHER: Yes, we do.
MAYOR MILLER: I'll make it.
MR. DAY: Second.
CHAIRMAN CHRISTOPHER: Any further discussion?
All in favor, signify by saying aye.
Opposed, likewise. Motion carries.

**MOTION TO APPROVE MEMORANDUM OF UNDERSTANDING
FOR USE OF MARINE EQUIPMENT FOR FIRE, POLICE
AND RESCUE OPERATIONS BETWEEN CITY OF FRANKFORT
AND THE KENTUCKY RIVER AUTHORITY.....PAGE 90, LINE 3**

DR. HANEY: Do you need a motion?
CHAIRMAN CHRISTOPHER: Yes, sir.
DR. HANEY: So moved.
MR. HAZLETTE: Second.
CHAIRMAN CHRISTOPHER: And a second from Tim.
Discussion? All in favor, signify by saying
aye. Opposed, likewise. Motion carries.

**MOTION TO APPROVE ADDENDUM TO LEASE AND
OPERATING AGREEMENT BETWEEN KRA AND
HYDRO PARTNERS, LLCPAGE 98, LINE 20**

CHAIRMAN CHRISTOPHER: Would anybody be
willing to make a motion that we approve this
and send this on to the next step?
MR. CAINES: I'll make that motion.
JUDGE COLLINS: Second.
CHAIRMAN CHRISTOPHER: Any other discussion?
Those in favor, signify by saying aye.
Opposed, likewise. Motion carries

**MOTION TO GIVE AUTHORIZATION TO EXECUTIVE
DIRECTOR TO EXPEND FUNDS FOR ESTABLISHMENT
OF EMERGENCY MANAGEMENT PLANS FOR ALL LOCKS
AND DAMS AND TO EMPLOY A PERSON TO
OVERSEE PLANSPAGE 118, LINE 6**

MR. HAZLETTE: Mr. Chairman, I move that the
Board give authorization to the Executive
Director to expend funds identified for the
establishment of emergency management plans
for all 14 locks and to have the authority to
employ those persons necessary to accomplish
that.

JUDGE COLLINS: Second.

CHAIRMAN CHRISTOPHER: Do we have a time line that we'd like to maybe try to get this done by? Just as soon as we can? This is something that's not going to take just a couple of weeks. It's going to take quite a while, I think.

MR. REEDER: It will take a while. We'll get started as soon as we can.

CHAIRMAN CHRISTOPHER: Hopefully, we'll have something as soon as we can.

MR. WARE: Is the upset level \$30,000 for this entire project? Are there funds other than the contractual dollars?

MR. REEDER: No. We're throwing that out based on what we analyzed as far as to get it started and get it going. We don't intend for it really to end because it will change, but that doesn't mean it's going to be \$30,000 every year. It doesn't mean it's going to recurring. We anticipate a continuation of this effort, but we don't anticipate plowing the same ground with it, and we can't really put a price tag of what would go beyond the initial phase of it. It probably would be less than that, to tell you the truth, Bob.

MR. WARE: So, you anticipate it being \$30,000 needed for the current fiscal year?

MR. REEDER: Yes, or starting tomorrow, that fiscal year.

CHAIRMAN CHRISTOPHER: Anything else? All in favor, signify by saying aye. Opposed, likewise. Motion carries

MOTION TO ADJOURNPAGE 123, LINE 7

MAYOR MILLER: I make a motion we adjourn.

MR. GRAVES: Second.

CHAIRMAN CHRISTOPHER: We're adjourned.

1 CHAIRMAN CHRISTOPHER: If everybody is
2 ready, we'll get started with our 145th meeting of the
3 Kentucky River Authority. Welcome everybody here today.
4 Thank you for being here on a beautiful, beautiful day
5 outside.

6 I guess, ladies, will you do us a roll
7 call, please.

8 (ROLL CALL)

9 MS. DEMPSEY: We have a quorum.

10 CHAIRMAN CHRISTOPHER: Welcome, Bill
11 and Jerry. Glad to have you all here today. Good to see
12 you.

13 I hope we've had a chance to review our
14 minutes. I'll accept approval of the minutes from our last
15 meeting.

16 MAYOR MILLER: So moved.

17 MR. WARE: Second.

18 CHAIRMAN CHRISTOPHER: All in favor,
19 signify by saying aye. Opposed, likewise. The minutes are
20 approved.

21 Next on our agenda is our Financial
22 Report. Don.

23 MR. MORSE: We're covering the months
24 of April and May of this year and we recognize that today is

1 the last day of our fiscal year. So, we don't have complete
2 results for our whole year but I can give you a pretty good
3 idea of where we're headed by the time we close out our
4 books.

5 We took a little step backwards this
6 time on our fee revenue. I guess the economic downturn had
7 some impact on the water use in our area, particularly in
8 Central Kentucky, because we went back on our basin-wide
9 water use to about 2006 levels and billed out only \$217,000
10 in Tier I fees for that period.

11 On the fees assessed on the river
12 usage, it went back even a little further. It was the lowest
13 water usage that we've had since 1998 for the January through
14 March period. Apparently, again, declines in business use
15 and industrial use in Central Kentucky area were a little
16 more dramatic than what we thought.

17 We collected during the period \$214,000
18 in Tier I fees and \$316,000 in Tier II fee revenue and ended
19 the period with only a small amount of receivables due of
20 \$14,000 roughly.

21 The good side is we are well below the
22 budget for Tier I operating income this year. We're only
23 about 70% of what we had budgeted through May with one month
24 left, and we expect to end the year with about a \$1.2 million

1 cash balance in that account.

2 And out of that, we have still reserved
3 monies for the repair project, interim construction work that
4 we want to do up at Dam 10, plus the funding we set aside for
5 match requirements with the Corps of Engineers. Those two
6 things together we utilized about \$875,000 of that \$1.2
7 million balance.

8 On the Tier II funds, we have one more
9 debt service payment that will appear on the June statement.

10 And after that, we should have again about a \$1.2 million
11 balance in Tier II fee revenues to carry forward into the new
12 year.

13 Our General Funds, we pretty much
14 expended everything we were allotted for lock operations.
15 You've read in the papers where the proposed cutbacks for
16 next year are going to be a little more than 2-1/2% of what
17 was budgeted for the current year.

18 That will probably be adjusted
19 somewhat, given the recent action by the Legislature in
20 giving some more incentive money out that will require the
21 General Fund to absorb a little bit bigger cut than was
22 originally anticipated, but we do have some Agency funds for
23 that program that should offset that. We have about \$29,000
24 or about 10% of our budget that will help offset some of that

1 crunch we'll have to absorb.

2 For capital projects, we finally closed
3 out the contract for the structural study that FMSM or now
4 Stantec was contracted for. So, we'll have about \$60,000 to
5 take back out of that account to our operations monies.

6 And for the Dam 3 project, our
7 engineers during April and May expended a little over
8 \$100,000 to help evaluate the construction bids and get that
9 process set up to award the construction contract on that
10 project.

11 We also during the period allotted
12 \$16.2 million of the General Fund bonds that we were
13 appropriated last budget to award the construction contract
14 at the end of May. That has not been awarded yet, but the
15 amount of funds that we have set aside for that project now
16 will allow full contracting plus about a 10% contingency and
17 still leave us about a \$1.2 million balance of those General
18 Fund bond proceeds to utilize elsewhere.

19 The account, while it's funded, per se,
20 does not have any cash balance. The Financial Management
21 group has structured this so that our funding is commingled
22 with other projects that are funded by the General Fund
23 bonds, and we won't get the cash until we have substantial
24 construction completion. So, the account is running in the

1 red, in effect. So, you see a negative cash balance on that
2 account.

3 The project at Dam 9 is beginning to
4 start up again. We had a small expenditure for that during
5 the period of about \$20,000 just for some reviews that the
6 engineer did on some change orders. The change order amount
7 now -- I don't know -- do we have a final number?

8 MR. HAMILTON: There are several that
9 are kind of in the middle of being processed. Roughly, the
10 change orders -- again, some of these are still in the
11 process and are subject to be changed a little bit -- we're
12 at about \$172,000 over. So, a little over 1% in change
13 orders.

14 (DR. HANEY ENTERS)

15 MR. MORSE: So, after the change orders
16 are processed, we should still have excess contingency on the
17 Dam 9 project of between \$1.2, \$1.3 million that we can
18 utilize on other repairs. I think we're going to get into
19 that later on talking about some of these additional projects
20 that Steve wants you to approve.

21 So, we're going to have fairly
22 significant cash carryforward in the new year. Of course, we
23 always have more abundant needs to utilize that and we
24 finished out in pretty good position overall.

1 Hopefully, this downfall in the water
2 usage throughout the basin will make a turnaround this
3 period. I'm hopeful of that. We don't have all the reports
4 in for the April through June quarter yet, but hopefully that
5 will make a turnaround for us and I'll give you a report on
6 that next month.

7 That's all I have, if anyone has any
8 questions.

9 CHAIRMAN CHRISTOPHER: Any questions
10 for Don?

11 MR. WARE: Don, are we getting any
12 revenue from the hydro plant operation at 7?

13 MR. MORSE: That's just an annual lease
14 payment that they make, somewhere around \$9,000.

15 MR. WARE: So, it's not tied to the
16 volume of water that flows through there?

17 MR. MORSE: No. We talked about that
18 at one time and changing our regulations to provide for a
19 water use aspect related to hydro plants or other uses
20 similar to that. We never adopted it.

21 MR. REEDER: That's a federal formula,
22 Bob. It's a Federal Power Commission formula that we use
23 down there that we adopted. I think the way we initially did
24 it, it would run them out of business.

1 CHAIRMAN CHRISTOPHER: If they expand,
2 as they have discussed yesterday in the paper, that's
3 something we might could consider for future reference.
4 That's not a bad thought.

5 Anything else for Don? Can someone
6 make a motion to approve?

7 MR. WARE: Mr. Chairman, I'll make a
8 motion that we approve the Financial Report.

9 MR. NEWBY: Second.

10 CHAIRMAN CHRISTOPHER: All in favor,
11 signify by saying aye. Opposed, likewise. Motion carries.

12 Consideration of additional projects to
13 utilize these funds that Don has talked about. Steve and
14 David, would you guide us through that?

15 MR. REEDER: As you recall, we approved
16 a master list of projects based on the Fuller Mossbarger
17 study about two meetings ago with no action with respect to
18 any one of them, with the understanding that when funding was
19 available, they would be brought back to the Board for
20 approval.

21 Bottom line is that the \$17.5 million
22 in General Fund bonds that we are going to use at Dam 3 only
23 has about or only would have with the contingency after the
24 bid \$1.5 million left in it. So, that wasn't enough money to

1 even approach doing one of those locks with any alternative
2 or anything else on it, no matter what level you tried to do
3 it at.

4 And, so, we need to spend the \$1.5
5 million plus probably some leftover money, which we don't
6 know what that will be from the Dam 9 project which is
7 ongoing. We've had real good luck with the Dam 9 project.
8 Like David said, we've got a \$15 million project down there
9 and our overruns are not but about 2% at this point.

10 And if the worst happens, they still
11 aren't going to get to five, and we recommend or the
12 engineers always recommend that we have 10% put aside and
13 that's what we did at Dam No. 3. So, we'll have some money
14 at the end of that.

15 And as Don pointed out in the last
16 meeting, we have some other funds from other sources such as
17 unbudgeted Tier II money which will have to be approved by
18 the Appropriations and Revenue people, or any of these
19 redirections of money will have to have that approval.

20 But the bottom line was that we picked
21 out some high-priority projects, and I'm going to let David
22 go through these with you, to go ahead and do and utilize
23 this money. And our intention is, as soon as this meeting
24 is over with, is to basically send a memo to Engineering over

1 here and have them proceed towards the preparation of bids or
2 whatever means that they think that they can do.

3 Now, there's one project that we came
4 over here and talked to Finance about. And our
5 recommendation which they've agreed with is to lump Dams 1
6 and 2 repairs there with Dam No. 7 into one abbreviated type
7 of project, abbreviated meaning that the full bid proposal
8 process can be shortened because it's a lower amount of
9 money.

10 Another crying need that we have is Dam
11 No. 8 which will have to be a separate project, and that's
12 the water supply to Nicholasville. It's a sheetpiling job.
13 It's about a \$2 or \$3 million job, about \$3 million, I guess.
14 David will tell you more about it.

15 And on that one, we don't have enough
16 money to do it, but we would have enough money to design it,
17 and it will take another year to get to the capital
18 expenditure of it.

19 Also, we have a project which we're
20 already funded for -- it doesn't have to come out of any of
21 these monies -- it's already set aside to finish and do a
22 near-term solution at Dam No. 10 and that's got to be done,
23 and it does not come out of this.

24 And I don't guess it would be a proper

1 motion for this, except I would like to have that project
2 adopted within it. That calls for a cutoff wall at 10.

3 The Corps spent a million dollars on that
4 project. That's the 80/20 federal project, the old
5 Congressional ADD. They ran out of money before they could
6 complete the near-term solution.

7 Near-term solution is sort of a term of
8 art, meaning that you fix it up well enough before you
9 rebuild the dam to keep it from falling in, and that's what
10 that means.

11 And they didn't finish that, and we
12 were going to modify it just a little and put a cutoff wall
13 in that lock chamber and put a valve in there because if we
14 ever have a drought that's worse than '99 or last year, then,
15 we've got no way to really pass water in a way that we can
16 calculate at least through that lock chamber and put it into
17 Pool 9 where Kentucky American draws out of.

18 So, David, I want you to elaborate on
19 this and break it down in a little more detail for these
20 folks.

21 MR. HAMILTON: As Steve mentioned,
22 we're looking at two groupings of projects. The first -- and
23 what I'm looking at is the sheet in your packet that's got
24 some highlighting on it -- that is the list of potential KRA

1 projects that were approved at a prior meeting. It's
2 basically a short list of priority items that we can choose
3 from when funds became available.

4 The first group of projects is
5 represented by the Lock and Dam 1, Lock and Dam 2 and Lock
6 and Dam 7, the first three highlighted rows. For the first
7 two at Locks 1 and Locks 2, very similar type projects where
8 we would be using rock armoring to keep the far abutments at
9 both those dams, to keep them from continuing to erode.

10 You recall the two last major failures
11 that we had on the Kentucky were due to flanking where the
12 river washed out around the dam, and that's basically what
13 we're preventing with the armoring.

14 MR. REEDER: Plus we did the same thing
15 about four years ago at Dam No. 3 to hold it to this point.

16 MR. HAMILTON: Right, and that's a
17 similar type of scope. That's what this scope was taken from
18 originally from the Stantec report. It was a much more
19 comprehensive fix with regards to repairing the training
20 wall, the wall at the far abutment.

21 This is a limited fix. It doesn't
22 really help stabilize your far abutment wall but it will help
23 the erosion from getting any worse. So, we put a price tag
24 of both of those it says on your chart there of \$440,000 and

1 we just rounded that to \$500,000 each.

2 And then the third project that gets
3 grouped together with those two is the Lock and Dam 7, and
4 not all that will be done. It's basically just limited to
5 repairing the wing wall which separates our dam and the hydro
6 plant facility. That was the number two ranking priority
7 from the Stantec needs assessment. That's primarily why that
8 was put in there.

9 And then secondly we will be addressing
10 the concrete cutoff wall in the lock where it basically rests
11 on a stone masonry sill and we've had a lot of freeze/thaw
12 and that's basically starting to pop off and eat back under
13 the concrete wall that we've constructed. So, we will be
14 essentially just building a new concrete splash pad at the
15 downstream side of that cutoff wall.

16 The amount listed there is \$3 million.
17 The bulk of that is actually for the upstream sheetpiling
18 which we're not doing. So, the total amount with the work at
19 Lock and Dam 7 we've got estimated at \$380,000.

20 So, for this group of three projects at
21 Locks 1, 2 and 3 brings a total including design to \$1.38
22 million. And as Steve mentioned, we've talked with Finance
23 and they've agreed to put that out for bids as a design
24 build. This is not the first time we've done that. We've

1 done that on our cutoff walls at Locks 8 and 9.

2 The second project would be the last
3 highlighted item there, Lock and Dam 8, and that is
4 essentially doing what the Corps did to a lot of the dam
5 structures back in the mid-nineties where they go and drive
6 new sheetpiling upstream of the existing dam and then
7 backfill that area between the new sheetpiling and the dam
8 and then cap that with concrete.

9 The reason why 8 was chosen, it's not
10 quite as a high priority. You will see the priority ranking
11 in the fourth column there of a priority ranking of 14 for
12 the dam. The reason why it was moved ahead of some of the
13 higher-ranking items was due to, like Steve mentioned, the
14 water supply in that pool -- Nicholasville and Lancaster --
15 and just the history of leakage that we've had at that dam.

16 MR. REEDER: Plus, we've spent about a
17 quarter of a million dollars on it trying to address the
18 leakage problem on it.

19 And also with respect to the valve
20 operating plan and the drought management plan we've got,
21 it's also where the first major shortage of water shows up.
22 Is that correct?

23 MR. HAMILTON: Yes. With Kentucky
24 American and Lexington being above that, that's typically

1 where you first fall off the crest during a drought.

2 MR. REEDER: And they have terrible
3 leakage there because it's karst areas underneath that dam.
4 The Corps has done some of this same kind of work at the same
5 location, but it's rusted out.

6 MR. HAMILTON: Their sheetpiling at 8
7 dates back to around '72.

8 MAYOR MILLER: We've already put a
9 cutoff wall at 8, haven't we? We did that four or five years
10 ago?

11 MR. REEDER: Yes, sir, that's right,
12 when we were trying to address that leakage problem down
13 there.

14 MR. HAMILTON: So, like I said, we've
15 talked to Finance about it. They've already sent us a draft
16 of the Request for Proposals that they put out on the street
17 for the armoring at 1 and 2 and the repair at Dam 7.

18 They haven't sent a draft yet for the
19 project at 8. That will be let like our typical projects
20 where we would hire a design firm to design the project and
21 then actual construction would be bid out just like 9 was or
22 Dam 3 was. That draft for that proposal hasn't been sent to
23 us yet, but we informed them that we would be discussing it
24 today and wanted to get Board approval for all four of these

1 projects before we proceeded with those Requests for
2 Proposals.

3 CHAIRMAN CHRISTOPHER: Did I understand
4 that we also want to go ahead and we would like to have Dam
5 No. 10 maybe not part of this project but part of the
6 priority listing?

7 MR. REEDER: Exactly, yes, sir, and the
8 funding for that is provided for. It's been in a separate
9 account for a long time.

10 CHAIRMAN CHRISTOPHER: Yes. We've had
11 that in that account for \$600,000, or is it more than that?

12 MR. HAMILTON: Six to seven hundred.

13 MR. REEDER: You've got a lot of local
14 concern at 10 with the City of Winchester and East Kentucky
15 Power up there because that thing has already been identified
16 by the Corps as a high risk area.

17 MAYOR MILLER: The City of Winchester
18 is building a new plant behind it, too, aren't they?

19 MR. REEDER: Exactly, a brand new one.

20 MAYOR MILLER: I'll make a motion---

21 MR. HAZLETTE: Second.

22 MAYOR MILLER: ---that we do what needs
23 to be done, ever how it needs to be worded.

24 CHAIRMAN CHRISTOPHER: Mike Miller

1 makes a motion and seconded by Tim that we follow this
2 prioritized list as outlined by Dave and Steve.

3 MR. WARE: Is this motion just for
4 those four projects that we're looking at?

5 CHAIRMAN CHRISTOPHER: It's
6 prioritizing those four projects. That's Lock and Dam 1,
7 Lock and Dam 2, that partial of 7. Is that including 8, that
8 we go ahead and start the process of 8?

9 MR. REEDER: Yes, sir.

10 CHAIRMAN CHRISTOPHER: And then it
11 makes 10 come in there as also part of that prioritized list.

12 MR. WARE: So, we're including 10?

13 CHAIRMAN CHRISTOPHER: Yes. The money
14 has already been appropriated for that. Are we okay with
15 that? Any questions, thoughts?

16 MR. WARE: And that's to utilize any
17 unexpended monies on the two dam projects plus any other
18 available---

19 CHAIRMAN CHRISTOPHER: Available
20 funding that we have out of the General Fund, as Don
21 outlined.

22 MR. GRAVES: David, what is the total
23 of those monies, the four?

24 MR. HAMILTON: The four projects?

1 MR. GRAVES: Yes, sir.

2 MR. HAMILTON: The first group, it was
3 \$1.38 million; and for the second one, it was \$2.54 million.

4 MR. GRAVES: Plus Lock 10, or does the
5 2.5 include 8 and 10?

6 MR. HAMILTON: That does not include
7 10. So, it's \$3.92 million before we include 10.

8 CHAIRMAN CHRISTOPHER: It's \$3.92
9 million. We've already appropriated the \$700,000 needed for
10 10. Actually, we did that a couple of years ago. So, that
11 money has been set aside for quite a while for that.

12 MR. GRAVES: Okay. I'm just trying to
13 get my---

14 CHAIRMAN CHRISTOPHER: Good question,
15 Jerry. I have that at \$3.92 million for those projects and
16 then the \$700,000 additional which we already have encumbered
17 in our budget for Dam 10.

18 MR. WARE: Mr. Chairman, I like the
19 idea, and I don't want to prolong this process any longer,
20 but are there any complexities, Steve, with respect to the
21 work on 1 and 2, given the fact that we don't have ownership
22 of those dams?

23 MR. REEDER: No. We have the right to
24 work on them for maintenance purposes. This is pretty light

1 maintenance compared to what Fuller initially spec'd out for
2 them. David reduced the scope of these projects. We don't
3 have any problem spending money on those to basically try to
4 protect the pool.

5 MR. WARE: And we couldn't hope to have
6 any Corps' participation in this process?

7 MR. REEDER: No, absolutely not.

8 CHAIRMAN CHRISTOPHER: All right.
9 We've got a motion. Any other discussion, comments? Yes,
10 sir, Don?

11 DR. HANEY: Let's go over the cost of
12 those again. We started out in excess of \$1.5 million excess
13 funds, right?

14 CHAIRMAN CHRISTOPHER: Yes, on 1, yes.

15 MAYOR MILLER: You're going to have
16 excess at Dam 9.

17 DR. HANEY: The excess from Dam 9---

18 MAYOR MILLER: From Dam 9 is about a
19 million, right, Don?

20 CHAIRMAN CHRISTOPHER: I think it's
21 1.2.

22 MAYOR MILLER: And then the excess at
23 Dam 9 is about 1.2.

24 DR. HANEY: Excess at---

1 MAYOR MILLER: Is that right, Steve?

2 MR. REEDER: Unappropriated Tier II
3 money about 1.2 and excess at Dam 9 would be about 1.7?

4 MR. MORSE: Nearly a million three.

5 MR. REEDER: A million three. A
6 million two and a million three.

7 DR. HANEY: Okay. So, that adds up to
8 2.5. And what are we spending; 3.8 plus Boonesborough?

9 CHAIRMAN CHRISTOPHER: 3.92.

10 MR. HAMILTON: But Boonesborough is in
11 a separate. It's got its money---

12 DR. HANEY: I understand that.

13 MR. HAMILTON: So, it would just be
14 3.92.

15 DR. HANEY: But if we have an excess of
16 2.5 on those other two projects--okay.

17 MR. MORSE: Do you want me to go over
18 that?

19 CHAIRMAN CHRISTOPHER: Share it with us
20 one more time.

21 MR. MORSE: We had to set up a
22 contingency on both the engineering and the construction
23 costs for the Dam 3 project. After having done that, we've
24 got \$1.2 million left from the General Fund bonds set aside

1 for that project.

2 We've got about \$1.3 million left
3 excess contingency on Dam 9 after these change orders go
4 through. We've got some excess Tier II funds because we only
5 paid interest this year on our bonds of about \$1.24 million.

6 We have excess Tier I fees that we could access if necessary
7 after paying for Dam 10 of another \$300,000. And we have a
8 little bit coming back from that structural study of about
9 \$60,000. All together, we should have around \$4 million of
10 excess funding that we could utilize.

11 Now, to do that, we're going to have to
12 get some approval from the Budget Office, I guess A&R
13 Committee approval of substitution of funds. We're in kind
14 of a quandary. We've got \$18.3 million of Agency funds still
15 authorized but we can't use it, and maybe they will let us
16 use our cash as a substitute for that.

17 We've got about \$4 million available.
18 We've got \$3.9 million in projects. That won't give you a
19 full 10% contingency funding, but I guess we'll just have to
20 evaluate it when we get some bids in.

21 MR. REEDER: Shouldn't need it on those
22 small projects.

23 CHAIRMAN CHRISTOPHER: All right. I
24 agree. That's a whole lot clearer. We've got \$4 million to

1 spend and we're looking at \$3.92 million worth of projects.

2 Good questions. Anything else?

3 All in favor. Opposed. Motion

4 carries. Good deal. Thank you, Steve and David.

5 MR. DAY: Randall, I have a question.

6 In reflecting on our discussion one or
7 two meetings ago on Dam 9, that seepage problem, now that
8 we're hearing that we've got \$1.2 or \$1.3 million surplus,
9 was that seepage problem resolved or has there been enough
10 water to make a decision on whether or not it has been
11 resolved because if we're going to have surplus funds there,
12 they were talking about painting the concrete cylinder, I
13 think, and I was wondering how that was resolved or what has
14 happened?

15 MR. HAMILTON: It's been addressed.

16 The main way it was addressed was by welding up the seams in
17 the sheetpiling and placing basically a wedge of sand to act
18 as a filter to keep any of the fine material from migrating
19 out the cell.

20 We decided not to pursue the painting.

21 Looking at the cost of the painting, they weren't for sure

22 how much benefit would come out of the painting part of it.

23 And, so, that part of it was left off.

24 There's a little bit of welding left

1 for the contractor to do up near the top, but for the most
2 part, it's been addressed.

3 MR. DINGRANDO: We may revisit the
4 painting issue. We went away from it back then because it
5 was getting towards winter; and the colder it gets, the less
6 likely it was going to be successful.

7 So, we may revisit it now that we're in
8 the summer; but I think the cost on that, if we pursued it, I
9 think it was less than \$10,000. So, it was pretty small
10 relative to the overall size of the project, and we still may
11 revisit the potential benefit of doing that.

12 MR. DAY: You mentioned there a short
13 time ago that you had flanking on some of those dams; and if
14 my dam-building in Cowan Creek about a hundred years ago
15 tells me anything, if we're going to get flanked where that
16 seepage is, on Dam 9 is where it probably would occur because
17 the other end is solid rock, isn't it? That bothers me a
18 little bit.

19 MR. HAMILTON: You probably wouldn't
20 have flanking there. It's actually the second cell in. So,
21 you've got an arccell and then another cell around at the end
22 of it. So, it's unlikely that you would have any type of
23 failure on that one.

24 CHAIRMAN CHRISTOPHER: I know the

1 season is just now getting here, but are we having any
2 seepage occur at this time?

3 MR. HAMILTON: It's hard to tell. The
4 auxiliary bay is filled up with water, and, so, it's all
5 under water right now. So, you will have to wait for the
6 water to come down to observe it.

7 DR. HANEY: Is there any kind of
8 warranty on the part of the contractor on any part of the
9 dam?

10 MR. REEDER: No. No.

11 DR. HANEY: Why? They don't do that?

12 MR. REEDER: They don't do that.

13 MAYOR MILLER: The painting was more or
14 less to keep the metal from oxidizing?

15 MR. HAMILTON: Correct, yes, corroding.

16 MR. REEDER: We tried some of that in
17 the Highway Department, Don, started talks about it. Found
18 out the bids were going to be so high, we couldn't afford it.

19 DR. HANEY: I was kind of thinking of
20 the high school in Estill County and the prison in Harlan
21 County.

22 MR. REEDER: It is strange, though.
23 When we were looking at that several years ago -- I had
24 forgot about it -- in the Highway Department, that we found

1 in Europe, in Germany and some of those countries, they
2 warranted those jobs. I don't know what it cost them, but
3 they did get warranties on them for so many years and the
4 contractor would go back and fix them if you developed a
5 pothole or a failure, base failure, but we didn't get that
6 far.

7 CHAIRMAN CHRISTOPHER: I think that is
8 something we just have to keep monitoring. If I understand,
9 we're talking a relatively small sum of money to coat that
10 cell. I would think we could come up with that kind of
11 money. If we look here, if we approached something of a
12 \$100,000 range, why, then, we might be squirming just a tad
13 if we look at these projects, if I understand our money
14 right.

15 MR. DAY: Especially if you were going
16 to rob Peter to pay Paul. That's what I was getting at. I
17 just would like for the record to show that we did inquire
18 about what I think is a failure of Stantec or whomever they
19 succeeded to address that problem from the beginning, and
20 I'll hush.

21 CHAIRMAN CHRISTOPHER: So heard.

22 Next on our agenda is our modification
23 of the policy to navigate over our dams in high water. We've
24 had that request here before. Steve.

1 MR. REEDER: This applies to commercial
2 navigation. We were contacted by the people--if you all
3 remember, you've already approved this once; but we were
4 contacted by the people that are transporting prestressed
5 concrete for Haydon Bridge Company which is building a new
6 Gratz bridge. That's in the upper reaches of Pool 2.

7 They can't transport it by highway
8 because they are too tall. And, so, they have to transport
9 this stuff, these big beams by river. And, so, the lock
10 being not operable there, and that's the Lock 2 that's always
11 backed up with a lot of water anyway, what their proposal was
12 to do was to -- and they came and talked to us about it.
13 They didn't just try to do it, but we thought we ought to
14 have a policy to address it.

15 Basically, we are following or
16 developed a policy based on what the Corps of Engineers uses
17 on the Green River and Western Kentucky, a minimum of 12 feet
18 of water verified by us prior to the shipment with show buoys
19 to keep them from running over the lock gate or tearing that
20 up and assist them in directing them through there.

21 The Board approved this policy about
22 two meetings ago, but the Board decided also upon a motion I
23 believe by Glenn Mitchell that we ought to require a
24 financial bond to be posted of \$1 million. And in this case,

1 these people, for Dam 1, they posted the million dollars.
2 They haven't come over it yet, I don't think, have they?

3 MR. HAMILTON: The ones over the dam
4 they have.

5 MR. REEDER: That's right. They're
6 working on going through the dam now or through the lock, and
7 that's another story. That's an experiment we're trying.
8 They've got to stand good for that, too.

9 We're trying to see exactly if you can
10 work on these locks in the wet without having to build a
11 cofferdam, which if that turns out to be true, then, that may
12 open an avenue towards working on some of these others to a
13 lesser scale than what we've been getting these high bids in
14 here on because that's where a lot of that money goes is for
15 dewatering, plus it's very dangerous and it's problematic.

16 So, if you turn in your packet, you
17 will find our modification which is exactly like the policy
18 that you've already passed except we are now requiring or
19 will require a \$1 million bond. I'd like to have that
20 approved, Mr. Chairman.

21 MR. HAZLETTE: Is that sufficient
22 coverage?

23 MR. REEDER: Yes, I think any damage
24 they would do to it because--I mean, yes and no. If they

1 tore the dam down, I mean, it sure wouldn't be, but with 12
2 feet of water, they're not likely to. They might cause some
3 damage there. I don't think it's realistic to cause any with
4 12 or 14 feet of water in there. And by adopting a policy,
5 if they do it when there's not that much water or without
6 asking us, then, they're going to be liable for it, whatever
7 it may be.

8 They've already come over the dam in
9 the high water. They're working on the smaller pieces going
10 through the lock, and there's been quite a bit of work on
11 that, and David can tell you more about it, but they haven't
12 done that yet. They're still waiting for the water to
13 subside a little bit.

14 DR. HANEY: Did they approach anyone
15 about this before they decided on the nature of that project,
16 that bridge project?

17 MR. REEDER: No, sir. This was after
18 the bids were already in, and the people that asked us were
19 the supplier that was hired later. In fact, it's a division
20 of Mahan that's doing our work at Dam No. 9. They're
21 building the prestressed beams, and I don't know what they
22 would have done. They already had some liaison and they knew
23 us and they came to us with it. I don't know what they would
24 have done.

1 DR. HANEY: It's like building a boat
2 in a basement, isn't it?

3 MR. REEDER: I heard about it and
4 talked to the Highway Department about it; and no one, the
5 Highway Department or nobody else talked to me about
6 transporting that stuff over the dam. And I said, what have
7 you got against trucks? I mean, this thing is kind of
8 problematic fooling with this stuff.

9 They said, well, the beams that they're
10 going to bring up here that they can't truck are too tall.
11 They wouldn't go under these interstate bridges. I've never
12 seen that. They must be pretty high because interstate
13 bridges are built to accommodate a tank on the back of a
14 truck. They are a National Defense Highway that President
15 Eisenhower started and it was built to put a tank on a
16 lowboy.

17 JUDGE COLLINS: I'll make a motion to
18 approve the policy.

19 DR. HANEY: Second.

20 CHAIRMAN CHRISTOPHER: All in favor.

21 Any opposition? Motion carries.

22 Bill, good to have you today, and Bob.
23 Talk about our drought response.

24 MR. WARE: All I've got to say to

1 introduce Bill, for those of you all who don't know him, he
2 has worked for the Division of Water for a number of years
3 now. And I'd say if there is a state hydrologist, Bill is
4 it. He is kind of the alpha and omega as far as knowing
5 about the characterization of hydrology in state waters.

6 I attended a meeting in March, the
7 State Water and Wastewater Operators Conference and Bill gave
8 a similar presentation, and I just thought it would be good
9 for the membership to hear a presentation. I told Bill if he
10 could tailor it to the Kentucky River Basin, the members
11 could benefit from his knowledge.

12 This is a subject that we all need to
13 be very familiar with since our mission is pretty contingent
14 upon how we respond to scarcity situations in the State of
15 Kentucky. This may not be as timely as it has been in past
16 years, and Bill understands that, but this issue is never all
17 that interesting until there is a shortage.

18 I looked at the data for the lock here
19 in Frankfort, the dam here in Frankfort this morning and it
20 was running about 5,000 cfs; and at this time in 1988, it was
21 running 124 cfs. So, it would have been very germane in
22 1988.

23 These cycles can happen at any point in
24 time, and Bill is going to tell us about the drought response

1 plan that has been developed late last year and hopefully our
2 role in that process. So, I will let Bill take it from
3 there.

4 MR. CALDWELL: Thanks, Bob. This will
5 apply to the Kentucky River Basin. I'm kicking myself for a
6 few of the slides I had cut out that really apply to the
7 Kentucky River Basin but I had to cut a lot of slides to get
8 it down to thirty minutes or so.

9 I appreciate the opportunity to come
10 talk to you. Being that we're having a pretty moist, cool
11 year, one of the first things that I think need to be
12 stressed is this is the time to be talking about it. The
13 new, if you like the word paradigm, should be, talking about
14 hazards pre-hazard, and that's kind of the whole point of
15 this drought mitigation plan that I've provided each of you a
16 copy.

17 I'll go over aspects of that plan very
18 quickly. I've provided you all a copy of it so that you can
19 read it in depth if you desire when you go home. And I've
20 chosen to just talk about a long-term perspective when it
21 comes to drought planning.

22 I think maybe the reason Bob invited me
23 is he saw some results of some of the groundbreaking research
24 that I did that I used to close, but I'm going to open with

1 it today to talk about societal collapse and how a drought
2 might impact that.

3 I did some research in the droughts of
4 the eighties, nineties and 2000's, and what I found was
5 there's some amazing correlation between losing seasons for
6 the Wildcats and losing seasons for the Cards.

7 And as it turns out, the decades with
8 more significant droughts, UK's average losses per season
9 increased, and it's the exact opposite for Louisville. So,
10 societal collapse in Kentucky could very well happen either
11 way. So, I think we're in trouble. Now, that's a
12 correlation. There's no causation there, but that's a
13 correlation.

14 If we go back further in time, one of
15 the interesting ones that I talked about when Bob saw it was
16 the Aztec culture, and the Aztec culture was the last great
17 Mesoamerican society. We know them for their bloody,
18 heart-ripping sacrifices that they did all the time, but they
19 were very sophisticated people with just as sophisticated
20 calendars and things.

21 The Aztecs had codices that they used
22 to record annual events and they had a very complex calendar
23 based on a 52-year cycle, and an animal and a number were
24 used to designate what year it was, and they used a lot of

1 that's been the accepted I guess theory or the accepted
2 explanation for a number of years.

3 And by the end of the 16th Century,
4 less than two million Aztecs remained largely due to being
5 killed but also wiped out by diseases, and it's more commonly
6 known as the Aztec Megadeath by the end of the 16th Century.

7 And until recently, smallpox, a
8 European disease, was blamed for this demise of the Aztec
9 culture; but it turns out that the Aztecs themselves in their
10 writings and their codices had a word for smallpox --
11 zahuatl -- and they documented outbreaks in 1520 and 1531,
12 after the Spaniards got there, that killed about eight
13 million people which was pretty bad.

14 But during the Aztec Megadeaths in 1545
15 and 1576, cocolitzli was the word that they used for that.
16 So, in recent years, a doctor, a pathologist, an historical I
17 guess paleopathologist has gone through the writings of the
18 chief doctor of Cortes at the time and he found that the
19 symptoms were not smallpox. The symptoms all describe to a
20 "T" hemorrhagic fever, such as ebola or the Hantavirus.

21 And what these things have in common is
22 they come from rats and rodents. Rats and rodents get
23 together during really extreme droughts, fighting for the
24 limited supplies of food and water. There's a lot of blood

1 swapping. The diseases get spread in this small community or
2 concentrated community of rats.

3 Then when the rains return, the rats
4 disperse and they hit the people in the fields and children
5 and you have outbreaks of these kinds of diseases.

6 And, sure enough, when they got back to
7 looking at tree-ring studies down in that area from Douglas
8 firs, they found during the period of the Megadeath there
9 were three severe years of drought followed by two very wet
10 years.

11 Interesting -- causation, correlation.

12 Here we're moving more towards a causation of a major
13 outbreak of several million dying related to the occurrence
14 of drought in the 16th Century.

15 And there's lots of proxy data that
16 are used -- tree rings and isotopes of various compounds, ice
17 cores. You all hear a lot about ice cores, on and on and on,
18 but also historical data and documents.

19 And if you go back, I went to the
20 library just down here in town and found some old books that
21 I could see any references to water at all. And in 1819,
22 there was a doctor, Lee Mason, traveling from Philadelphia to
23 Illinois. He would stop along the way and he kept a diary.
24 And he stopped in Frankfort October 30th of 1819 and noted

1 that the Kentucky River at Frankfort was only three feet
2 wide. Now, granted, in 1819, we didn't have the locks and
3 dams, but still just imagine three feet of water here at
4 Frankfort.

5 He went on to a shipping port and
6 noticed that boats along the Ohio River were just kind of
7 lying up on the bank unused because the water was so low in
8 the Ohio that the boats had been grounded.

9 Other droughts were noted in 1835 by a
10 doctor who traveled to Lewis, Greenup and Carter Counties,
11 1836, and even 1854, 1857 and in 1862, corresponding to the
12 time they had the Battle of Perryville. The first skirmishes
13 in that battle started out with both the Union and the
14 Confederates met over one of the few sources of water they
15 could find down there.

16 Going back even further to the Lost
17 Colonies of Roanoke and Jamestown, in 1587, the first English
18 settlers came here. Three years later, when supply ships
19 came back -- there's that typo I was telling you about,
20 Don -- I copied this from somewhere else -- that's not my
21 typo -- it was abandoned and they were gone, never heard from
22 them again. And it was attributed to poor planning, poor
23 supplies and the conflict with Native Americans.

24 Well, the English tried it again in

1 Jamestown in 1607. And it ended up after about six years,
2 there was about an 80% mortality rate attributed to
3 malnutrition.

4 Again, tree rings, tree-ring studies
5 done out in tidal waters of Virginia looked at the period of
6 time when the Lost Colony was trying to be established and a
7 period of time when Jamestown was trying to be established
8 and they found that over the course of the last 700 years
9 prior to that, these were two of the worst droughts that had
10 ever been recorded in these tree-ring studies.

11 So, now you have drought that was a
12 significant influence in the collapse and disappearance of
13 two groups of people, and they assume that the Lost Colony
14 just assimilated into the Native American culture. They had
15 to because they had nothing to eat, or the Native Americans
16 just wiped them out because they were competition.

17 Nonetheless, these tree-ring studies
18 provide a pretty good causation for the disappearance of two
19 groups of people related to droughts.

20 And this is just another look at those
21 tree-ring studies that were used to then extrapolate the
22 Palmer Hydrologic Drought Indices all the way back to the
23 year 1200. And if you look at that time frame, you can see
24 when the Lost Colony was trying to be established and then at

1 Jamestown that involved over six years. That's a drought,
2 something that we've never experienced.

3 Now, think about this. This period of
4 time right in here was also the period of time for the Aztec
5 Megadeath. So, now we have drought at Jamestown, Virginia
6 and a drought all the way down in Mesoamerica. It must have
7 been a big one. That hasn't happened since.

8 And I'd like to go through more but I
9 have to stay short. There's a whole lot more I could talk
10 about on just evidence for this stuff.

11 Let's take a look at some rainfall
12 reconstructions from Western New Mexico. And most of your
13 rainfall reconstructions are going to come from your more
14 arid areas because they have the trees that last a lot
15 longer. You have trees that may be two thousand years old.
16 And, so, they can really extract a lot of information out of
17 these trees.

18 But as we move along, we're going back
19 to about the last couple of thousand years. And just for
20 context, this is about the year 900, 800 to 900. And in that
21 year, the Maya Civilization Mesoamerica suddenly and
22 unexpectedly declined and pretty much disappeared. There's
23 evidence with isotope studies of the lakes, evidence from
24 culture. Their monument building declined rapidly after that

1 time.

2 And it pointed to a serious and severe
3 drought that then political conflicts, warfare over food and
4 diminishing supplies led to the eventual decline of the Maya
5 Civilization.

6 The Anassi in the 1300's, the Pueblo
7 people out in the Mesa Verde area, the cliff dwellers, they
8 left and never returned to that area. Droughts from
9 tree-ring studies show at least one cause of that was
10 probably simply more competition for arable land under
11 inadequate rainfall.

12 And if you look at the 1454 One Rabbit
13 drought that I talked about earlier that the Aztecs
14 themselves wrote about and called it One Rabbit drought, look
15 at the rainfall in that area there. That's about 50 years'
16 worth of really sub-low rainfall there in Western New Mexico.

17 There's that 16th Century mega drought.
18 This is now out in New Mexico. So, now we've got out in New
19 Mexico, down in Mesoamerica and over at Jamestown, we've got
20 Megadeath, we've got Roanoke and we've got it in New Mexico.
21 That is getting close to being about 50 to 75 years of
22 continual, well-below-normal rainfall.

23 So, again, cause, correlation with past
24 events is one way to see, well, what have we got ahead of us.

1 So, we go back a little further.
2 Everybody gets something interesting out of this. The plan
3 itself is boring. Global climate history.

4 Now, what I have here is a graph going
5 back 800,000 years of some isotopes of oxygen that are used
6 as a proxy for temperature, and these are taken out of ice
7 cores in either the Arctic or the Antarctic. I don't know
8 which one. One or both.

9 But as we come forward from 800,000
10 years ago, you will see that these periods of more ice --
11 these are glaciation periods, okay -- we've had about seven
12 glaciations in the last seven, eight hundred thousand years.

13 Now, you will notice that we developed
14 more ice over a long period; and then for some reason, we
15 warm up rather quickly. This one here, not really, but,
16 again, the cooling period, more ice, more ice, more ice and
17 then bam, the warming, the change in climate -- cooling,
18 cooling, cooling, bam. These are called interglacials.
19 We're still in the Ice Age. Everybody thinks we're out of
20 the Ice Age. We're still in it.

21 Where we're at right here, less ice,
22 right here, we're in what's called the Holocene, and it's
23 only been mild like this for about the last 12,000 years.
24 Coincidentally, that's when humans discovered and developed

1 agriculture and flourished as a species -- the last thirteen,
2 fourteen, fifteen thousand years.

3 Evidence from long term from the globe
4 suggests that the Earth can relate to a lot of factors -- the
5 tilt of the earth, the way that it orbits the sun, the
6 recession of the equinoxes and all this stuff, but like the
7 people in England worshipped back in Stone Hinge, they
8 understood this, too. It affects the amount of sunlight,
9 insulation, incoming radiation. All this heat can radically
10 change how this planet responds in temperatures.

11 Here is the last 120,000 year sea
12 levels. At the very beginning of our most recent Ice Age,
13 you can see sea levels dropped until about 18,000 years ago.
14 Then the Holocene period began, the period that we're in.
15 At that time, sea levels were about 400 feet lower mean sea
16 level than they are today. Here's the warming that we're in
17 right now.

18 Finally, just to look at CO-2
19 concentrations from Antarctic ice cores and temperatures from
20 those same Antarctic ice cores. This is again going back
21 about 400,000 years. It shows the four major glaciations and
22 it shows where we're at right now in terms of warming. The
23 bottom line is warming. So, you can see a long cooling, then
24 a relatively rapid warming, another long glacial, one hundred

1 to one hundred and twenty thousand years, then twenty
2 thousand years or so of warming, another glaciation and then
3 warming.

4 Here we are right here, and they found
5 that CO-2 has generally lagged with the temperatures about
6 800 years or so. We're right here today. And this is where
7 we're fluctuating right now for about the last couple of
8 thousand years -- right out here in our global temperatures.

9 So, you can kind of see that the globe
10 has a preferred cycle of glaciation and then brief periods of
11 interglaciation.

12 Now, this is temperatures, global
13 averages for the last 120 years or so, and this is what we
14 see today. This is the reason we all have to get active and
15 worry about droughts and worry about water supplies.

16 Well, I hope to this point, you can see
17 that the variation in climate has been much more in terms of
18 temperatures, in terms of carbon dioxide, variable from what
19 we see on this graph. The graph is rather alarming, to be
20 sure, but it's well within the two degrees. We're used to
21 seeing the glaciation and nonglaciation changes of ten to
22 twelve degrees, and we're talking tenths of one degree.

23 So, is it necessary to plan for a
24 drought because of this current global warming?

1 So, it leads me to think as a planner,
2 as a person who worries about droughts, I reflect back on The
3 Fugitive when Harrison Ford was being chased for killing his
4 wife by Tommy Lee Jones. He blamed it on a one-arm man but
5 nobody believed him.

6 So, Harrison Ford is at the outlet of
7 one of these pipes going down this big old dam. I think that
8 dam -- I can't remember where it's at -- but he's got a gun
9 and Tommy Lee Jones is on the other end, and Harrison Ford is
10 saying I didn't do it, and Tommy Lee Jones says I don't care.

11 That is to say, my job is not to worry
12 about whether you're innocent or guilty. My job is to do my
13 job, and our job is to plan and to respond and to mitigate
14 for drought.

15 Regardless of the current political
16 climate, regardless of the causation, our job is to adapt
17 because, as you've seen from past history, the globe is going
18 to do its own thing. We may change things along the way, but
19 we're going to have to adapt rather than try to control.

20 I just don't quite think we can
21 overcome a 12-degree shift in global temperatures, which
22 brings about the State Drought Plan. Now, I gave you all
23 copies. You can read this. I wrote this thing at the end of
24 2008.

1 I had a lot of help from the Drought
2 Mitigation Response Advisory Council. They were appointed by
3 the EEC, the Environmental and Energy Cabinet Secretary, and
4 Hank List was the Chair of this committee. And what we did
5 is develop a joint resolution, got it passed with the help of
6 Tom Jensen to develop once and for all a statewide
7 coordinated Drought Response and Mitigation Plan.

8 And I say in my introduction that
9 coordination and synergy between state agencies hasn't been
10 absent. DOW and KRA coordinate and talk all the time during
11 droughts. Generally, they're implemented on an ad hoc basis
12 in later stages of drought and under crisis management, and
13 anyone that's dealt with droughts knows that's kind of how we
14 do things around here. When it gets really bad, then it's
15 time to really start putting our groups together.

16 So, in the Table of Contents, you will
17 see kind of how we broke this down, but really it's just a
18 vanilla type drought response plan -- drought monitoring,
19 drought response and drought mitigation -- and I'll just
20 point out really quickly some of the things in this plan that
21 didn't exist prior to its writing.

22 First, we set up a drought management
23 network. We've got fifteen drought management regions in the
24 state so that we can refine and look at conditions on a finer

1 scale than the four large, monster climatic divisions. Those
2 are just too big to get.

3 DR. HANEY: What are those regions
4 based on?

5 MR. CALDWELL: Those are based upon the
6 15 Area Development Districts. They are drought management
7 regions, not drought monitoring regions. We had a big debate
8 on should we do this by hydrologic boundaries or should we do
9 this by political boundaries.

10 And I figured, well, we've got GIS.
11 You can lay one on top of the other. But in terms of hazard
12 mitigation planning, it's easier to go with the political
13 boundaries because that's how DEM works with counties and
14 works with regions. So, we felt like to align with the
15 hazard mitigation plan that our own Homeland Security folks
16 developed in the 120 counties, we would go that way.

17 And there's a basic organizational
18 structure now in place that develops the Kentucky Drought
19 Mitigation Team. And this is a team that will be meeting
20 every year once we finally get this going, and the Kentucky
21 River Authority is named as being a member of the team. They
22 were actually on the Council itself, too.

23 But there's also some subcommittees
24 that are going to be doing work in support of this Drought

1 Mitigation Team both during and in between droughts. Climate
2 and Water Resources Data. This is a group that will monitor
3 climate and water resources data and use it to help classify
4 drought extent and/or make notifications to the Drought
5 Mitigation Team that something may be afoot somewhere.

6 Drinking Water and Public Health.
7 That's self-explanatory. That's a group that is going to
8 look at drinking water issues developing in emergencies and
9 public health issues.

10 Ag and Natural Resources. For the
11 first time, we're going to have Ag and Natural Resources
12 actually at the table with the Division of Water guys and
13 everybody kind of working together to start evaluating
14 droughts as they develop in its early stages rather than
15 waiting until--well, by the time the Division of Water used
16 to say water shortage watch, everybody said dah, you know,
17 it's been dry for a month and a half. So, we want to get out
18 ahead of that.

19 And, finally, Drought and Water
20 Emergencies will be chaired by DEM and they will be there to
21 actually anticipate and respond to developing emergencies
22 before they are full blown, much as what happened in
23 Saylorsville last year. We finally had to declare a state of
24 emergency just to get things moving out there. The role of

1 that group will be to get there a little sooner so we don't
2 have to have declared states of emergency in communities that
3 won't respond as quickly as they should.

4 We will be monitoring precipitation,
5 soil moisture. We don't have a soil moisture network but
6 there's some pretty good soil moisture modeling out of the
7 University of Illinois at the Midwest Regional Climate Center
8 that we will use to look at soil moisture impacts for early
9 drought development.

10 Of course, we'll be looking at drought
11 indices. The chosen preferred one will be the Drought
12 Monitor because it gives you spacial--it's not confined to
13 the four climactic divisions. It crosses boundaries and
14 basins. And we'll be looking also at things like seasonal
15 drought outlooks.

16 One thing about the Drought Monitor, it
17 really gives you a good idea where drought is developing
18 right now because droughts tend to start in one place and
19 then they will expand outward. If you go back and look at
20 how droughts have developed over the last 100 years, you will
21 see where they start. And characteristic droughts may come
22 from the North, they may come from the South, the West or the
23 East, but you can see those developing in advance. That's
24 one more positive thumbs-up that we may have drought

1 developing in the future in Kentucky.

2 And then hydrologic conditions and
3 observed adverse impacts, water supply reservoirs, stream
4 flows. We'll be looking at stream flows. This is right off
5 the USGS website. They've got all the stream flow data.
6 They make flow direction diagrams. They put the current
7 stream flow on there and you can see whether it's in the
8 bottom 10%, 11 to 25, 25 to 50 at the click of a mouse. And
9 we'll be using the 28-day average flow as our index stream
10 flow to get away from wobbling with the 7-day or even a
11 one-day.

12 The second thing we did was actually
13 define drought action levels. In the past, water shortage
14 watches and warnings were very focused on water supplies.
15 That left out ag. That left out industries. That left out
16 golf courses and that left out coal mining. It was just
17 focused on water supplies.

18 So, what we have done is moved away
19 from calling water shortage watches and warnings based on
20 water supplies to focusing on those 15 drought management
21 regions and issuing first drought advisories, then Drought
22 Level I, II and III.

23 An advisory will be an internal
24 advisory to the Kentucky Drought Mitigation Team, generally

1 the directors or the cabinet level officials of those
2 organizations. And that team, by the way, when you read this
3 has a lot of folks in it -- KACO and the Kentucky League of
4 Cities, Rural Water Company.

5 Drought Level I will be the state's
6 official recommendations to the admission of drought. In the
7 past, it's always been, hey, are we in a drought yet and
8 people would be afraid to say, yes, we're in a drought
9 because they're afraid it's going to start raining and then
10 they will look foolish. Well, no. We've got some stream
11 flow drought monitor precipitation indicators.

12 When those are hit, we'll have a powwow
13 with the climate monitoring group; and if it looks like it's
14 a drought, we're going to call it a drought for all those
15 drought management regions affected.

16 MR. REEDER: Bill, how much weight is
17 given to the Palmer Drought Index in this scheme?

18 MR. CALDWELL: It's one of the indices
19 that we'll look at, but the Palmer is incorporated in with
20 the Drought Monitor. More than anything else, we'll probably
21 be using the Z Index or the Drought Moisture Index which feed
22 the Palmer for our short-term surface drought soil conditions
23 and then use the Drought Monitor, and it incorporates the
24 Palmer Hydrologic Drought Index.

1 MR. REEDER: Using those regions a
2 while ago you were talking about that Dr. Haney asked the
3 question about what those districts were based on or those
4 regions, that's probably a pretty good way to do it.

5 I don't know whether it was done
6 intentionally or not, but those Area Development Districts
7 did most of those drought response plans that were required
8 by law a few years ago.

9 MR. CALDWELL: That's exactly why we
10 did it. They've got familiarity with them and they're
11 plugged in with Emergency Management and they are the
12 facilitators for drafting county hazard management plans.
13 And my goal is to get drought alongside all the rest of the
14 hazards that are qualified for pre-disaster funding
15 mitigation and then we can start helping some of these small
16 systems that have no other way, like up in Jenkins and some
17 of these places in the Kentucky River Basin -- Jenkins,
18 Fleming-Neon.

19 The main stem of the Kentucky River is
20 one thing and you've got a big problem there that's got to be
21 managed, but we've also got a lot of issues up in the
22 headwaters of the Kentucky River Basin, particularly the
23 North Fork. And then Manchester in Clay County in the Middle
24 Fork, that lake is not in the greatest shape. So, there are

1 other issues in the basin that I think something like this
2 drought plan -- and I'll show you in a minute -- could help
3 us to address.

4 And then there's going to be a Drought
5 Level II and a Drought Level III. Drought Level III will be
6 the worst form of drought. We're not going to have a drought
7 emergency level because that should be reserved for the
8 Governor's call, and emergencies need to be pretty specific
9 to the location. You need to be specific so you don't lose
10 your credibility.

11 You don't want to call a drought
12 emergency for the entire Licking River Basin like they tried
13 to in '99. That wouldn't have been a good idea. It just
14 wouldn't have. There are too many other variables in calling
15 a drought a drought emergency than one gauge at the very
16 bottom of the basin.

17 So, I set it up this way so we wouldn't
18 be calling big aerial drought emergencies. The emergency is
19 to be specific. Like water shortage watch and warnings will
20 be very specific now. During a Level II drought, we could
21 have water shortage watches and warnings anywhere we choose.
22 They're no longer the highest level.

23 Emergency declarations state and local.
24 Both state and local have emergency declarations. And, of

1 course, the agricultural disaster declaration, too. That's
2 the Governor and the USDA by county. So, these are all going
3 to be part of the process.

4 And, then, of course, that leaves local
5 drought response. They have been done on a county level and
6 they need to be done at the local level.

7 But if you look at those drought
8 response plans they developed, those water shortage response
9 plans, they all have a local Water Shortage Task Force, and
10 that task force was supposed to develop their strategies,
11 evaluate their vulnerability, determine their ability to meet
12 demand, identify alternative sources of water, and then
13 implement the drought response plan.

14 A lot of these communities out there,
15 particularly as you get upstream of Beattyville are not very
16 good at doing that. So, we've got to do a better job as a
17 part of overall drought mitigation, mitigation being actions
18 to prepare for drought rather than responding for short-term
19 changes. We have to do a better job of helping those folks
20 understand what it means to be prepared.

21 Now, the second part of the plan, this
22 drought response was the trojan horse for what was the real
23 issue which is how you move from being a reactive state to a
24 proactive state. How do you go from just waiting for the

1 crisis to occur and then hoping it goes away to one where any
2 off years when it's raining outside, you're talking about
3 drought mitigation.

4 We identified seven main areas of
5 mitigation and then several sub-objectives under those.
6 Expanding our data collection networks and secure long-term
7 funding for them -- stream gauges, climate networks and
8 things like that -- critical -- the basic data that you need
9 to make projections and models. You've got to have that
10 before you can really draw the plan.

11 Inventory and projected state's
12 available water resources. You've got to know what's out
13 there first and we've got to know where we could and where we
14 couldn't and shouldn't be putting significant demands.

15 Identify and project drought
16 vulnerabilities system by system by system that need it.

17 Pursue opportunities to increase
18 available raw water supplies. Secretary List talked about
19 the use of the Ohio River maybe more inland in areas of the
20 state, things like that.

21 Improve state and local drought
22 response. The plan is to improve state drought response, and
23 part of the mitigation work for the state should be to help
24 locals get a handle on how to handle drought in their own

1 communities without having to worry about the politics and
2 things that might cause them to not do the things they
3 should, and then at the very least, use the State as the
4 reason they're having to take an action. We're more than
5 willing to say, yes, that's what we said.

6 DR. HANEY: Can I make a comment?

7 MR. CALDWELL: Sure.

8 DR. HANEY: On that first one up there,
9 expand data collection, that is the most difficult thing to
10 sell. USGS says that just raw data collection is a waste of
11 time because they want to apply their data to solving some
12 scientific issue.

13 MR. CALDWELL: That's KGS.

14 DR. HANEY: No. That's USGS, their
15 Water Resources Division. Of course, the State is the same
16 way. Does DNR get big funding for water data collection?
17 No.

18 MR. CALDWELL: It's a challenge.

19 DR. HANEY: Yes, it sure is, and it's
20 going to take an entire thought change to do that, but that's
21 probably the most important thing that we do.

22 MR. CALDWELL: The USGS has gotten 2 to
23 3% increases in their budget for the National Water
24 Information System or the NSFIP, the National Stream Flow

1 Information Program. So, they're getting a little bit more
2 money, but the really big need out there is co-operator money
3 because there's close to \$1 million of organizations, cities,
4 municipalities and agencies willing to partner with USGS, and
5 USGS doesn't have enough co-op money to match them.

6 DR. HANEY: If USGS would quit this
7 idea of first applying data to problem-solving for science
8 and start using that money they're blowing to collect data.
9 I worked with them for 25 years and they just don't want to
10 do it. If they would use the money they have and put it out
11 there so co-operators could get it to collect data, we would
12 have the data. They've got plenty of money.

13 MR. CALDWELL: I'll not comment on that
14 since this is being transcribed.

15 And, finally, more efficient use of the
16 state's water resources -- long-term efficiency, short-term
17 conservation and all that.

18 There's a study out of Blacksburg, West
19 Virginia that showed exactly how well conservation works
20 during a drought if you had several rounds of public
21 education and local enforcement.

22 And with none and none, if you put out
23 a water shortage watch or you say it's a drought watch,
24 demand goes up. With slight, you know, a low level of

1 enforcement and a low level of public education, water use
2 still went up. So, when you say local water shortage
3 advisory, typically, a lot of water systems will tell you, if
4 we declare a water shortage watch at the state level for your
5 county, water use goes up.

6 So, what they determined was with
7 maximum enforcement, I mean, aggressive enforcement and very
8 effective education, 15 to 18% conservation is about all that
9 they found that you could really achieve. There's not very
10 many places in Kentucky that I would say maximize education
11 and enforcement during a drought. So, we're probably looking
12 at 5 to 10% max.

13 And if your water source is diminished
14 by a factor of 70%, a 5 to 10% conservation is nice but it
15 sure didn't help you. So, long-term efficiencies and changes
16 in the way we use water would really be a big help.

17 Now I'd like to talk about you guys,
18 your contribution to the future water supply in the basin.
19 Data: Long-term and realtime applications. This is where
20 you guys really do shine.

21 I've got a quote here from myself.
22 "I'm still trying to get a handle on what is really meant by
23 the term available water," and I've said that every year
24 I've worked for the Cabinet.

1 You've got to have long-term data, and
2 there's nothing more frustrating than going to get stream
3 flow data from 1930 and you find, man, the record ended in
4 1948. You've got to have long-term, continuous data in order
5 to do long-term, continuous assessments of how things are
6 changing, how land use is impacting hydrology, how demands
7 are impacting hydrology. So, it's critical.

8 And in terms of basins, the Kentucky
9 River Basin, due in large part to you guys, is one of the
10 best gauge networks in Southeastern U.S. It's a gauge basin
11 that has a lot of information in it because of the gauges
12 that you fund. Without you guys, the Kentucky River Basin
13 wouldn't have nearly as many of those docks up there.

14 So, thinking back to long-term
15 droughts, mega droughts centuries ago, having this kind of
16 long-term data collection network with some degree of
17 confidence and it's going to remain, not for us, but for
18 fifty years down the road, if this network is still in place,
19 water managers fifty years from now are going to have an
20 invaluable resource with 100, 150 years of continuous stream
21 flow data.

22 So, to the extent that you guys are
23 doing that, I wish every basin had a Kentucky River
24 Authority.

1 Why is it important? I looked at the
2 breakdown of gauge record lengths for the 7Q10 analysis --
3 and for those of you who may not know, a 7Q10 is a
4 mathematical statistic that gives you about an average
5 seven-day low flow that occurs once about every ten years
6 commonly referred to as a drought flow and used to do
7 everything from setting wasteload allocations to protecting
8 water quality to protecting habitat and failing miserably at
9 all of them. But it's easy to calculate and EPA liked it in
10 the seventies and that's what we still use.

11 USGS, when you look at the gauges they
12 used in that 1991 publication, a great proportion of them
13 were thirty years or less of data. It ended in 1987. So, a
14 great proportion of those gauges had a record from '57 to '87
15 -- one of the wetter periods in the last hundred years.

16 Now, I went and calculated a 20- and a
17 30- and a 40- and a 50- and a 60-year moving average 7Q10.
18 So, I started with the first thirty years and then I dropped
19 the first one and added another one and calculated 7Q10's all
20 the way for Lock 6 from 1930 on.

21 And what I found was, depending upon
22 which 20- or 30- or 40- or 50-year period you select, your
23 7Q10 that you calculate once every twenty years or thirty
24 years if you get the money can vary quite markedly.

1 Here at Lock 6, it ranged from almost
2 230 all the way down to 98, depending upon the twenty-year
3 period you select, because, remember, as you go, you're
4 dropping off bad years maybe and adding good years or adding
5 bad years and dropping off good years.

6 Nineteen fifty-seven to 1987 was the
7 period for a lot of those gauges. That's the 7Q10 you got.
8 So, continuity in the gauge record is critically important.
9 If you stop dropping years and trying to gauge places, you
10 know, twenty years here, twenty years there, thinking you're
11 going to get a lot of good data all over the place, you're
12 better off to leave your money in one spot and just keep
13 collecting continuous data at that point.

14 There's three other things I think you
15 guys are commended for. Water supply stabilization. That's
16 what we were talking about today, stabilizing these dams and
17 things. Every one of those things are water supplies except
18 for a couple.

19 Water supply enhancement. I hear that
20 when I hear raising dams or crest gates or things like that.
21 Valves can enhance your water supply to a certain extent.
22 And also water shortage (drought), coordination of
23 facilitation. At least in the past two droughts I've been
24 involved in, we've had a lot of coordination with the KRA,

1 especially with users on the main stem of the Kentucky River
2 like on a weekly basis just to make sure that things are
3 okay, particularly downstream with Kentucky American.

4 And I'm hopeful with this Drought
5 Response and Mitigation Plan -- and I emphasize the word
6 mitigation -- with the River Authority as part of the
7 Kentucky Drought Mitigation Team, that maybe there might be
8 areas that we might work together to start looking at
9 improved water use efficiencies in the Kentucky River Basin.

10 That really needs to be done.

11 Some of the worst efficiencies in water
12 use are in the Kentucky River Basin, and that's going to be
13 in your headwater areas, and mostly that's related to leakage
14 and just losses of water.

15 Drought vulnerability assessments
16 really ties in with that, utilities and other users. Who is
17 the most vulnerable in the Kentucky River Basin? Is there
18 anything that can be done to help reduce some of that
19 vulnerability now while the weather is good instead of trying
20 to respond and conserve and cut back and fine and shut off
21 the car washes.

22 Shutting off car washes. Think about
23 that for a second. If you use a million gallons a day and
24 your car wash uses three thousand gallons a day, the first

1 thing you do is shut off the car wash. Why? Why make that
2 man not make any money?

3 We need to think really about how we
4 respond to drought and do it intelligently, and that's part
5 of this drought mitigation process is starting to think
6 intelligently about managing drought, not knee-jerking and
7 doing things because, well, that's the way we've always done
8 it.

9 Update and improve drought response
10 protocols and options, and by that, I mean we're going to
11 have a Pool 3 water treatment plant coming in. We may raise
12 some dams in the future at some point. We've still got
13 valves that we can use. There's hydro operations that
14 greatly affect flows downstream of the hydro plant and our
15 permits.

16 All of those could be looked at and
17 relooked at and rethought how they fit together to develop
18 maybe a more modern drought management strategy for the
19 Kentucky River Basin.

20 And, finally, mitigation of low-flow
21 impact at Pools 8 through 4. I think tightening up the dam
22 at 8 is a good start. They leak like a sieve there. But in
23 the drought of 2007 and 2008, we saw something we've never
24 really seen before and that's flows down at Lock 4 below 100

1 for extended periods of time.

2 Now, there's probably a lot of reasons
3 for that. Part of it is increased demand upstream. Part of
4 it is less water coming out of Dix and we're cooperating on a
5 gauge on the outflow of Dix River just to determine what is
6 coming out of there. But the old assumption that the lower
7 Kentucky River Basin will be fine because of Dix and all of
8 that, you can't make that assumption anymore. It's gone.

9 So, these are some areas I hope that
10 the Division of Water, the Cabinet maybe in the future when
11 we're talking about mitigation and drought and drought
12 planning, make darn sure we're taking care of these because
13 that really is where you're having your biggest impact right
14 now.

15 The Central Kentucky water solution,
16 i.e. main stem Kentucky River, is the big potato, but there's
17 also a lot of other things I think we can do higher up in the
18 basin to help improve drought efficiencies and drought
19 mitigation in the smaller communities.

20 I don't know if you can see that, but
21 this is my wrap-up. Climate changes, you know, if we think
22 back of what all I've talked about, climate changes are the
23 norm -- wet/dry, warm/cool, hot/cold. The Earth is going to
24 change.

1 2008. Last year we had a system that just pretty much ran out
2 of water in Magoffin County.

3 Instrument and proxy data placed before
4 the 2008 drought episodes in a long list of moderate dry
5 spells. Think of them as that when you're thinking about the
6 future, the long-term future.

7 Preparedness and mitigation are
8 essential for the future, given the nature of our changing
9 climate. And I say this because whether you're an advocate
10 of human-induced global warming being the worst thing to ever
11 come down the pike and a moral equivalence of the Civil
12 Rights' legislation of the sixties or something, or whether
13 you think it's all bunk, it doesn't matter because the
14 climate is changing.

15 So, we can't let that drive what we do
16 out of panic, but we can't let maybe an aversion to all that
17 keep us from acting just because we don't think anything is
18 happening. Folks, the climate is changing. It always has,
19 always will. Right now, it looks like it's ticking up.

20 So, our job as managers and regulators
21 is to adapt and prepare people to adapt to whatever comes
22 their way. Let the science and the politics, the sum equals
23 political science, let it work itself out. We just do our
24 jobs.

1 got into about a year or so ago. So, we've addressed it
2 with that.

3 We had the University of Kentucky Water
4 Resource Institute through our annual watershed management
5 contract one time evaluate all of those county plans, some of
6 which I dare to say are much better than others and some are
7 very much lacking, but we had them evaluated and so forth.

8 And I want to say this. I'd be
9 interested in this Council that's about to take place and be
10 interested in the timing of it because I think that really we
11 can't operate this thing in a vacuum as far as drought
12 response. We can do certain things, but we can't take on the
13 whole thing by ourselves.

14 And, so, I think the next natural
15 progression of us addressing this is in this process you're
16 explaining here.

17 And I want to say this on a more
18 personal note as far as Bill Caldwell is concerned. Whatever
19 his title is, he's head of that branch over there, but since
20 he has been here, I've been through two significant droughts
21 as Director of this organization; and the second drought, the
22 liaison with Water and the cooperation we had with Water is
23 night and day between the two droughts. And I think Bob Ware
24 will probably admit to that, maybe not publicly but---

1 MR. WARE: I've got nothing to lose at
2 this stage.

3 MR. REEDER: But, anyway, you were
4 talking about the assessment on the river basin, you don't
5 assess the whole river basin. You don't assess the upper
6 part of the Licking versus the lower. You don't assess
7 what's going on in Carrollton versus what's going in
8 Manchester or Whitesburg.

9 And we often get caught up in this
10 business, too, and we've got to be very cautious that we're
11 responsible for the main stem of the river which is 265
12 miles, but it doesn't just end in Beattyville. Some of the
13 worst problems you've got is Hazard, Whitesburg, Fleming-
14 Neon, Hindman, all down through there, and it's very tough to
15 deal with it.

16 But we've had a very good relationship
17 with Water, and I found the data and the thinking of the
18 younger people that took over over there with you and others
19 to be very refreshing and very useful, particularly during
20 that last drought and on an ongoing basis.

21 David is pretty well assigned from our
22 staff, and he's got a hydrological background himself, having
23 worked there at one time, but we've got the basis of a very
24 good relationship set up with Water.

1 Now, on this drought response business,
2 it's very important and I think really--I've often wondered
3 when I go to the Legislature when they say get that drought
4 response plan out for me you're supposed to be doing. Well,
5 it's in a bunch of different pieces.

6 And the truth of it is, with all the
7 other things going on and with our limited capabilities
8 outside of your shop, we're not able to do it. We're not
9 able to have one.

10 So, when somebody asks me about a
11 drought response plan, I think that the Division of Water and
12 the River Authority have to address that almost together.
13 That's all I've got to say.

14 MR. WARE: And it's going to go well
15 beyond those agencies and entities. I think Bill's overall
16 message is that we ain't seen nothing yet. Now, we may not
17 any of us live to see how bad it could get, but, then, you
18 know, who knows.

19 Bill, the drought mitigation team, have
20 they---

21 MR. CALDWELL: We haven't met as a
22 formal team yet.

23 MR. WARE: Is one of the charges to
24 maybe look at legislation to see if there's any way to

1 enhance coordination with economic development to address
2 some of the issues?

3 MR. CALDWELL: I don't know if that
4 particular objective was put in there in that way but it's in
5 there, looking at all possible---

6 MR. WARE: All competing needs?

7 MR. CALDWELL: Yes. And, of course,
8 this Kentucky Drought Mitigation Team, it's all voluntary
9 participation, but all the people that are involved in
10 helping me formulate the mitigation objectives here, they are
11 all really interested in this. It's a wide cross-section of
12 folks.

13 So, we'll be talking about Eastern
14 Kentucky water issues and we'll have people from PSC and KIA
15 and Rural Water and the ADDs and the University of Kentucky,
16 everybody in one group talking about what do we need to do to
17 prioritize where are the hot spots in Kentucky and what do we
18 need to do.

19 And it's more to help the Division of
20 Water prioritize what it needs to do in terms of drought
21 mitigation and not spend so much time worrying about when the
22 next drought is going to hit but spend the intervening times
23 worrying about reducing the impact once it does hit.

24 MR. REEDER: Any input that you might

1 have with respect to our annual watershed management
2 agreement with UK -- and, of course, we've already approved
3 it for this year -- but anything along that line when you see
4 that on the website in terms of being discussed, you might
5 want to attend the meeting because we welcome any input or
6 anything that we're not doing to assist us that we could do
7 through that.

8 MR. CALDWELL: I think with the
9 structure that I've laid out with Drought Level I, Level II
10 and Level III droughts and such that it will be fairly simple
11 to just kind of tie all of that in with the valve operating
12 plan and the existing plans that you already have.

13 Those plans still largely will be
14 driven by river conditions, but people just don't really get
15 it that the headwater flows and the headwater rainfall causes
16 them to have to cut back water use in Fayette County. They
17 still haven't made that connection.

18 DR. HANEY: There's something that
19 bothered me for years and years in response to droughts. You
20 mentioned it but we don't hear a lot about it, and quite
21 frankly I don't know enough about it to really understand the
22 impact.

23 But the Aztecs and such, it was a
24 agrarian society and they didn't depend a lot on coins and

1 money, they bartered, but what would be the catastrophic
2 response to industry if we had one of these types of
3 droughts? People have to have money to buy things. And if
4 they don't have money to buy things because of a drought, you
5 talking about a catastrophe. I don't understand it.

6 MR. CALDWELL: Well, I mean, if people
7 aren't affected, is it really a drought? I mean, that's the
8 question. Fortunately, for Kentucky, we've got this big
9 thing to our north called the Ohio River and its alluvial
10 aquifers.

11 DR. HANEY: Well, did your team discuss
12 the impact on the economy very much in your deliberation?

13 MR. CALDWELL: No. We haven't really
14 had any good--other than agricultural statistics. You know,
15 that's our main source of information on how droughts have
16 impacted Kentucky in the past.

17 One of the things we said we need to
18 work on, drought impact and drought assessment after the fact
19 with economic development and try to figure out if somebody
20 is tracking drought impacts, and I'll bet you they are not.

21 DR. HANEY: For example, if you cut off
22 Toyota.

23 MR. CALDWELL: There would be a lot of
24 collateral damage there.

1 CHAIRMAN CHRISTOPHER: We know what
2 Winchester is doing. They had the plant that was coming in.
3 I have forgotten the name of it, but they required a need of
4 another million gallons a day of water.

5 MR. REEDER: Two million.

6 CHAIRMAN CHRISTOPHER: Two million.
7 So, the impact of that was that plant wasn't coming unless
8 they could guarantee them that water.

9 MR. DAY: Randall, I want to ask Bill a
10 question. And, by the way, I enjoyed your presentation.

11 My good friend, T.G. Shuck over at
12 Channel 27, he talks about Eastern Kentucky, and I happen to
13 be from Whitesburg, that we're out of the drought and yet the
14 Bluegrass is still in a drought. And along about that time
15 he was telling that, I know you had had about 4.5, 4.9 inches
16 of rain in a two-day period. How did he make such an
17 evaluation so quickly?

18 MR. CALDWELL: Did he make that
19 evaluation before or after all the rain?

20 MR. DAY: Well, I can't be really sure.

21 MR. CALDWELL: So, you're saying he
22 said the Bluegrass was still in a drought?

23 MR. DAY: Yes, sir, at that time, and
24 that's been several days ago.

1 MR. REEDER: He had to be looking at
2 the Palmer Index.

3 MR. CALDWELL: Palmer is probably
4 showing slightly dry or something.

5 MR. DAY: So, the fact that we've got
6 all kinds of water running over Dams 8, 9, whatever, 4,
7 doesn't play a part in what he was saying because you've got
8 more water going over the dams now than we've had in a long,
9 long time.

10 MR. CALDWELL: Possibly. A lot of
11 people define drought as how much water is in the bottom of
12 your rain gauge since January 1st. That's elemental. That's
13 not a good way to define a drought. So, maybe he was doing
14 it based on just how much rain relative to some 30-year
15 normal, but he certainly didn't get it from the Drought
16 Monitor. He didn't get it from soil moisture. Soil moisture
17 is above normal in all parts of Kentucky all the way down to
18 72 inches.

19 MR. DAY: Well, that's what I thought.

20 MR. CALDWELL: I don't know where he
21 got that.

22 CHAIRMAN CHRISTOPHER: What's that
23 famous saying we have in Kentucky -- if you don't like the
24 weather, wait 24 hours; chances are it will be different.

1 We certainly know when you look back at
2 the historical data that Bill brought out, a drought wipes
3 away civilization. It has. So, it can certainly be a
4 tremendous impact on an area.

5 And you mentioned the folks at the Mesa
6 Verde area. I just had a chance to visit that a couple of
7 years back and was reading there about that, and I think
8 that's exactly what happened. Water supply there was already
9 limited to begin with and it wiped out that whole side of the
10 hill, side of the cliff-dwelling population. Interesting.
11 Good job. Thank you.

12 MR. WARE: Mr. Chairman, I just think
13 it's important that Board members, particularly some of the
14 new Board members, a lot of times they maybe feel overwhelmed
15 by seeing disjointed projects come in for funding. And when
16 we spend a hundred-plus thousand dollars a year for
17 cooperating with the U.S. Geological Survey to maintain
18 gauging networks and the University of Kentucky, there's some
19 method to the madness.

20 Steve and his staff do more day in and
21 day out than sit around worrying about getting houseboats off
22 the top of dams and all. There's more of a complexity to
23 their job responsibilities than may readily be apparent.

24 CHAIRMAN CHRISTOPHER: Point well

1 taken. That's a great I guess closing statement there about
2 this because that's right. Our purpose is all about just
3 some of the things that he mentioned that he was hoping that
4 our Authority would be looking at -- and not to belabor --
5 but long-term data, water supply stabilization, water supply
6 enhancement and water shortage coordination.

7 That's some of those goals that when we
8 met there a few years back that we talked about. That's why
9 we focus a lot on these small projects about making sure our
10 stabilization of the dams are high priority, and that's what
11 this list is all about.

12 MR. CALDWELL: I hope you understand
13 that I was pointing those out as things you've done an
14 excellent job at already.

15 CHAIRMAN CHRISTOPHER: Yes, and we
16 appreciate that.

17 MR. CALDWELL: I'm not saying you need
18 to do that.

19 CHAIRMAN CHRISTOPHER: Good job.

20 Steve and Sue Ann, consideration of our
21 no-trespassing policy at our lock and dam property.

22 MR. REEDER: Since Sue Ann has taken
23 her new job and it's headquartered at Dam 10, pretty much she
24 has seen this stuff first-hand and I'm going to let her

1 explain the history of it a little bit.

2 But strictly speaking, and, of course,
3 there's not any trespassing allowed on these properties. We
4 adopted the Corps of Engineers' policy years ago. The
5 reservation, as the Corps is prone to call it, is a
6 no-trespassing zone. That is somewhat unrealistic in that
7 you can't enforce it. Of course, we're not there. We don't
8 know whether there's been any violations or not.

9 A few years ago, I think probably in
10 the early part of 2000 somewhere -- you know when it was, Sue
11 Ann -- we sat down and adopted a series of policies regarding
12 the use of these properties and the public exposure to them.

13 About two years ago, three years ago --
14 you had just come on board up there, Randall -- at one of
15 the meetings you chaired as at that time Chairman of the
16 Parks Committee, we ratified many of those policies, modified
17 a few of them.

18 And a while back, we had a sit-down
19 with Fish and Wildlife officials, the Deputy Commissioner and
20 a lot of their people from Fisheries that dealt in the
21 enforcement area. Mr. Christopher was there. Sue Ann was
22 there. David was there. I was there.

23 Of course, they're interested in
24 promoting fishing. Well, we don't have a problem with that,

1 with people using our property to fish as long as they stay
2 off those concrete structures where they can fall off and get
3 themselves killed, and if they survive, sue us. That's where
4 we run them off.

5 And we usually tell law enforcement,
6 whatever law enforcement agency happens to be in contact with
7 us -- and Fish and Wildlife is the primary one -- we say,
8 look, on the concrete, that's a no no because somebody can
9 get really hurt on those things. There's slim on them and
10 everything else. A lot of these people are not in real good
11 condition to begin with when they walk out there.

12 And, so, we said no; but if they're
13 just walking around on the land fishing off the bank, that's
14 no big deal. I go over to Lock 4 every day of the week.
15 Someone who is obeying the law, behaving themselves, they're
16 not drinking, they're just there fishing, I don't have a big
17 problem with that.

18 We've called the Frankfort City Police
19 a lot of times where there have been people that were
20 otherwise and they run them off, but I don't think we need to
21 make an issue. You all can speak to this, any of you that
22 were at the meeting. Fish and Wildlife thought they were
23 wasting their time with a lot of these minor violations,
24 technical trespasses, if you will.

1 So, what we are proposing to do is
2 modify our no-trespassing policy to allow bank fishing unless
3 the people get and there's some extenuating circumstance.
4 They are misbehaving, they're drunk, they're partying and
5 creating a problem, and that's always an exception. We call
6 the law if that happens, but basically that's what we are
7 proposing to do.

8 And I'm going to let Sue Ann speak.
9 Now that she's at Dam 10, she sees it every day of the week.
10 Her office is right there at the dam. And Randall being the
11 sportsman he is, he is familiar with the issues also.

12 MS. ELLISTON: It's just an ongoing
13 problem at 10. Every day there's someone down there fishing
14 off the concrete banks and things of that nature.

15 I have met with the new Fish and
16 Wildlife law enforcement officer down there. We are on the
17 same page as far as what we've talked about with Fish and
18 Wildlife, and I'll get into that just here in a minute.

19 I have ran a few people off, especially
20 during the high water times. It scares me to death, for one
21 thing.

22 MR. REEDER: On the structures.

23 MS. ELLISTON: Yes, on the structures.
24 Not bank fishing. On the structures. Of course, I always

1 take the park ranger with me since I'm right next to the park
2 there, but it's every day. I don't see of any way to keep
3 these people from entering our property.

4 I know 10 is a little bit different
5 because it's right next to the park, but I have my lock guys
6 tell me it happens at 13, 14. As a matter of fact, we were
7 looking at the road at 5 a couple of weeks ago. A fisherman
8 was down there that was from Anderson County. He was
9 fishing, wanting to know about the new regulations he had
10 heard about. What can I actually do? Where can I fish?

11 We told him just as long as you don't
12 get on the structures or the bank, you will be fine. I did
13 give him a copy before you all. So, it has been put out a
14 little bit before you all have seen it, and that was kind of
15 my mistake, I guess, of giving him a copy of that.

16 But getting into the fishing area of
17 this, we have never let anyone fish below the dam past the
18 buoys up close to the dam area.

19 MR. REEDER: From the water.

20 MS. ELLISTON: Yes, from the water.

21 I'm talking about the water now. Fish and Wildlife has asked
22 that we change our buoys and let the fishermen come up to the
23 actual lock and dam and fish on the lower side, not the above
24 approach where the dam is.

1 So, that's something we have done this
2 year. We did change it, and I can show you a copy of it, but
3 our buoys are now going to be marked with Danger Dam. And at
4 the bottom -- I don't know if you've ever seen the buoys --
5 they have a triangle with a cross in them. I don't
6 know if you all have seen those. But the ones at the bottom
7 will no longer have that. They will just be an open diamond
8 without the cross, and that allows them access up around the
9 dam area. That's where they want to fish is around that
10 area.

11 Of course, it's only in your boat.
12 It's no fishing, there again, in low water times. You cannot
13 fish off the rocks. You cannot get on our structures or
14 anything of that nature.

15 Now, above our dams is going to be the
16 same way. It will be 300 feet above with the Danger Dams and
17 Keep Out with our signs with a diamond with a cross in the
18 middle. The cross in the middle gives Fish and Wildlife the
19 authority to give you a ticket if you are behind the buoy
20 markings.

21 So, that's kind of where we
22 went with Fish and Wildlife and what we're doing with them.
23 I'm hoping that no one really has a problem with that.

24 So, there's two issues. One is bank

1 fishing and one is fishing from your boat on the water up
2 closer to the dam.

3 MR. REEDER: What that does, it
4 discretionarily, by not having--I didn't know this, but that
5 cross inside that logo is what these officers go by, no
6 matter what it says on that buoy, but it is overly
7 restrictive. Fish and Wildlife feels like it is and I think
8 so, too. In low water, let them go up there. That's good
9 fishing up there.

10 And the other thing about it is is that
11 with the buoys still there, if it is a flooding or dangerous
12 situation and they do it, he's still got discretion to write
13 them a ticket if he's endangering himself. So, it's not all
14 the time. Probably 95% of the time these people are going to
15 fish, it would be all right.

16 It's awful hard to talk to law
17 enforcement sometime. I noticed over here at Lock 4, the
18 City Police, it's either black or white to them. They want
19 to run somebody off or arrest them if they're on the property
20 or they want to do nothing.

21 I don't have any desire as far as that
22 land business in there is concerned if peaceful people are
23 coming in there. Like that old fellow that walks his Jack
24 Russell every afternoon, I don't want the police running him

1 off. I mean, he's a nice guy. There's no sense in being
2 like that about it, but we do have our share of drunks that
3 come over there and undesirables that need to be run off and
4 they will be if anybody catches them. None of this will
5 affect any of that, and we're not putting a welcome sign up
6 that says everybody come on. We're just taking a passive
7 approach basically to this problem.

8 CHAIRMAN CHRISTOPHER: I think the
9 drought conditions that we've had the last few years have
10 attributed to this even more so because the low flow of water
11 coming over the dams actually makes it extremely feasible and
12 easy to ease up to the dam wall and fish. And, obviously, in
13 the drought conditions, the best fishing of the summer is
14 right there because that's where you've got your best
15 oxygenated water and your food system is there and that's
16 attributed to some of this.

17 I think from a fishing standpoint, I
18 think there's really three things here. Fishing from the
19 bank is fine. It cannot be on our concrete structures.
20 That's still a no. And all we're doing now is changing our
21 buoy system to allow us to get up past where we used to be
22 able to go with that line going across and staying away from
23 the falls to where, if it's safe, you now can get closer to
24 the falls to fish around.

1 MR. REEDER: And, of course, on the
2 upper side of it where there is a true danger, it is still
3 prohibited.

4 MR. WARE: Let me play the devil's
5 advocate. I don't have any problems with the leniency. But
6 with today's litigious society, do we have to say you may
7 fish from land or boat? I mean, regardless, over a range of
8 conditions, you're still talking about the most dangerous
9 hydrologic area in a free-flowing river system around these
10 structures.

11 Can we state our prohibitions without
12 stating that you may do this? Can law enforcement agencies
13 respond to that, noting that there's been a change in the
14 buoys and then allow people to fish and boat where they may
15 want to without us saying you may do that?

16 Does it affect our liability from a
17 legal standpoint?

18 CHAIRMAN CHRISTOPHER: Well, from the
19 enforcement issue, I'm going to go back to that direction,
20 the Game Wardens have just had a really hard time with the
21 enforcement because, as it was, it was, no, you cannot go
22 past those buoys. If you did, then, they had to write a
23 ticket.

24 And it was hard for them to want to

1 write that ticket, particularly with the low flow. And you
2 take in the months that's going to come up here with August
3 and September and October, that is a very low flow period.

4 And I think Steve mentioned it a little
5 bit. There has to be a common-sense approach. They still
6 can write a ticket if somebody is up there during a high
7 flow, dangerous scenario. They still have that opportunity.
8 That is still a decision that that person has to make and
9 it's a knowledgeable, understandable decision.

10 So, liability-wise there, I think
11 that's when we would have to be on top of it and verify that,
12 hey, this was a dangerous time for them to be up there and
13 they had to use their knowledge of safe boating practices
14 which are common sense and by law type of things. And
15 there's even safe boating classes and certifications that you
16 can get that would not allow them to be up there.

17 Can you ever take away your liability?

18 No, I don't think we can.

19 MR. HAZLETTE: To put it in context, it
20 almost would be like a yellow diamond advisory sign that you
21 see on the highway that says a curve can only be negotiated
22 at 25 miles an hour, but a lot of people drive through it at
23 40, 50.

24 If you drive through it at 60 and

1 wreck, is somebody liable for it? I guess they could be, but
2 generally speaking, you've provided a warning that says this
3 is a safe speed, and I think that's kind of what you're
4 trying to achieve with the way these buoys are marked.

5 MS. ELLISTON: And we're still saying
6 it's a Danger Dam area.

7 MR. REEDER: Exactly. The officer
8 still has discretion. He's got control of the situation.
9 And before, what I was worrying about there, was that they
10 really didn't--these tickets were problematic to pursue and
11 some days they just wouldn't write them. Then people got the
12 idea that it wasn't against the law and that kind of thing.

13 Fish and Wildlife felt pretty strong
14 about this. We had a meeting out there. We didn't know what
15 it was going to entail, and I think the bottom line to it was
16 they wanted to put the officer in charge of the situation on
17 the lower end.

18 The bank fishing, that was ours.

19 CHAIRMAN CHRISTOPHER: It's kind of
20 like this. You take like right now. The flow is, what did
21 we say, 5,000 I think you said, Bob. To say that you can go
22 up close right now, no.

23 We're having a little tournament outing
24 in our pool there Saturday. If somebody goes up I think

1 within the wall chambers of the dam Saturday and Fish and
2 Wildlife are there, they're going to make you move out
3 because probably that flow over is too strong right now. If
4 you get too close, there certainly could be a hazard at this
5 time because there's still a pretty good flow in the river.

6 Instead of writing a ticket, they're
7 just going to go up there and they're going to make you move
8 out. That's kind of where they were wanting to be at. That
9 was from the Department of Fish and Wildlife.

10 MAYOR MILLER: So, if they're inside
11 the buoys, they want to use their judgment, not ours?

12 CHAIRMAN CHRISTOPHER: Yes.

13 MR. HAZLETTE: On the upper side,
14 though---

15 CHAIRMAN CHRISTOPHER: The upper side
16 is still the same, but the lower side, yes.

17 MR. WARE: With this statement, you may
18 fish from the land or boat but not on any structure, should
19 it be qualified under appropriate conditions or under safe
20 conditions?

21 MS. ELLISTON: You could change that.

22 MR. REEDER: We started to tie that
23 lower boat fishing to some river level. It was almost
24 impossible to do it because it's going to be different at

1 different locations and then the officer is not going to know
2 what it really is and it would just be a nightmare.

3 CHAIRMAN CHRISTOPHER: How about you
4 may fish from the land or boat in these areas under safe
5 boating practices.

6 MR. REEDER: Within safe boating
7 practices.

8 CHAIRMAN CHRISTOPHER: Within safe
9 boating practices but not on any structure.

10 MR. HAMILTON: If I could add a couple
11 of more things on the buoys, a couple of things that we
12 looked at. We found some old documentation of the Corps,
13 what their policy was, and it's basically a similar setup of
14 having the Keep Out buoys upstream, the open diamond, Danger
15 Dam buoys below. That was the one thing that we were kind of
16 going off of.

17 The second thing was, I called one of
18 the people on the Muskegon River, which as you know gets
19 compared to Kentucky, a very similar system, and asked them
20 what is your all's policy and it's very similar. They have
21 the Keep Out buoys upstream, don't have any buoys on the
22 downstream side.

23 Their lock and dam properties are a
24 little bit different than ours because they're set up in more

1 parks and camping. So, there's a lot more public involvement
2 on their properties, but they still have that basic policy of
3 nobody is to be allowed on the locks. So, very similar.

4 MR. REEDER: We've thought it out. We
5 were really being a little more restrictive than the Corps on
6 that lower side and nobody enforced it. That's what it
7 amounted to.

8 CHAIRMAN CHRISTOPHER: They wanted to
9 enforce it, but it was really hard to write somebody a ticket
10 when you're at 13 and there's really no flow except for
11 what's coming out of the valve. That was really the
12 situation there, and you could just about name any of the
13 upper pools that would be in that scenario.

14 MR. REEDER: It gets that way here.

15 MR. GRAVES: In low water on the Ohio
16 River, and I've traveled from here to Sarasota, Florida by
17 water, and during the summertime, they hug the lower pool and
18 I haven't seen law enforcement hauling those people off and
19 they're marked.

20 DR. HANEY: It looks like common sense
21 ought to play a major role, but you can't have a regulation
22 or a rule with all kinds of exceptions in it either because
23 that's tougher on law enforcement. They've got to get the
24 rule book out.

1 CHAIRMAN CHRISTOPHER: That's an area
2 we looked at, talked about, but that became even a greater
3 issue and too complex. What month is it and how much flow do
4 we have? That's where we had to just say, hey, you have to
5 use common boating practices to determine whether or not it's
6 safe to go up in there. And that's where the Fish and
7 Wildlife said, hey, if we feel like they ought not be up
8 there, then, we're going to go up and say, hey, move out, not
9 today, and then that gives them that discretion.

10 MR. REEDER: I probably had more
11 problem myself with the land part of it because I didn't want
12 to set up an open invitation to people; but if there's no
13 disorderly conduct involved, then, that's the only place
14 some people have got to go.

15 MR. HAZLETTE: Do you want to say
16 anything in here about the prohibition of any kind of
17 alcoholic beverages or anything like that in this policy?
18 You mentioned that two or three times about that kind of an
19 issue.

20 MR. REEDER: Tim, that's a good point.
21 I don't know. You may fish from the land or boat but not on
22 any structure.

23 The Board can do what they want to, but
24 that's sort of a common sense thing, too. If we've got some

1 disorderly people on there harassing somebody, then, it's
2 kind of a no-brainer. The police are going to come get them
3 if we turn them in. I guess I'm hesitant about saying too
4 many things specifics. You start naming a bunch of specific
5 things and then you've missed one somewhere along the line,
6 but it's a good point.

7 DR. HANEY: You can't have alcoholic
8 beverages on public property anyhow, can you?

9 MR. REEDER: No, you're not supposed
10 to.

11 CHAIRMAN CHRISTOPHER: I think that's
12 one of those things that law enforcement, they're going to
13 nail anyway, just like the water patrol do on the water.
14 They check because I know ours were out. They were checking.
15 They checked everything -- open coolers. They wanted to see
16 our fish and they went through the boats.

17 MS. ELLISTON: And most of these
18 properties, there is no law enforcement. They're so far out.
19 I wouldn't know what was going on there unless someone told
20 me.

21 MR. DAY: Randall, in that final
22 paragraph, I looked at that and it says we're trying to
23 accommodate the citizens of the Commonwealth. How much
24 out-of-state traffic do we get? I know Dams 1, 2 and 3 are

1 certainly pretty close to Indiana and Ohio people. I was
2 wondering if we shouldn't say maybe the KRA is attempting to
3 accommodate the citizens of and out-of-state visitors to the
4 Commonwealth.

5 MR. REEDER: That's fine.

6 CHAIRMAN CHRISTOPHER: I think that
7 statement was simply there to say there was a change but that
8 change could go back. I think we were just trying to say,
9 hey, this is now a privilege but we can revoke that privilege
10 and we want you to clearly understand that. We were just
11 trying to accommodate people who have asked to be able to
12 fish out of a boat closer to the flow of the dam.

13 MR. REEDER: But your point, Mr. Day,
14 is that it's just not Kentucky people.

15 DR. HANEY: If you just substituted the
16 word public.

17 MR. REEDER: Okay. We've got a typo
18 there anyway. We've got a "d" we don't need. Let's just say
19 the public.

20 CHAIRMAN CHRISTOPHER: Anything else?

21 MS. ELLISTON: One other thing. This
22 will be posted on our website along with Fish and Wildlife's
23 website, too.

24 MAYOR MILLER: Do we need a motion to

1 approve?

2 CHAIRMAN CHRISTOPHER: Yes, we do.

3 MAYOR MILLER: I'll make it.

4 MR. DAY: Second.

5 CHAIRMAN CHRISTOPHER: Any further
6 discussion? All in favor, signify by saying aye. Opposed,
7 likewise. Motion carries. Thank you, gentlemen. Thank you,
8 Sue Ann.

9 Next on our agenda is the Memorandum of
10 Understanding between the City of Frankfort and KRA. Steve.

11 MR. REEDER: This is a proposed
12 Memorandum of Understanding with the City of Frankfort. This
13 is a renewal of one that we had basically the same thing
14 involving a boat that we own and one that we're trying to
15 trade to the City of Frankfort, and the Memorandum of
16 Agreement currently has run out.

17 Most of you are familiar with that
18 agreement. It's an agreement involving the use of a boat
19 that's owned by the River Authority that the Frankfort City
20 Fire Department and Police Department use on occasion. They
21 don't use it for law enforcement purposes but they do--well,
22 they do, too. They don't use it for patrols. They use it and
23 have used it on narcotics raids and things of this nature but
24 they don't go out and patrol on it.

1 Right now, patrols are pretty well--
2 even by the Fire Department, safety patrol is pretty well
3 suspended because my understanding is down there they've
4 suspended all overtime on everybody, and the squad that ran
5 this thing was an overtime-based squad, unless it was an
6 emergency, a fire or an EMS thing.

7 It's a very nice boat. We've had this
8 thing appraised. We made a proposal to the City to trade it
9 for some land immediately behind Lock 4 because we need that
10 building for storage because that's our headquarters now.

11 So, this particular agreement is just a
12 stopgap until we can hopefully get that transaction made. We
13 no longer need this boat. At first, we had plans for it. We
14 had some limited use for it, and it has grown over the years
15 to a point that we don't need that thing. It's grown to a
16 point, also, where the City depends on the thing. They pay
17 the expenses for the most part on it. They moor it.

18 Except for a major overhaul that we did
19 on it about five or six years ago, the boat, which we shared
20 the cost of repairing the boat, except for that, we really
21 haven't spent any major money. They usually just take care
22 of it. We never see it unless we need it for something or
23 need them to come and do something for us, which right now we
24 need them to come and do something for us. We need them to

1 come down there and bring that sonar and look at that lock
2 approach down there that's being blocked. We went and tried
3 to get the depth of it right so they can do that.

4 But the only difference between this
5 and the original Memorandum of Agreement is that basically
6 before, anticipating the trade, anticipating the trade for
7 this land, they turned down what we thought was a pretty fair
8 offer because we don't think that building based on an
9 appraisal is worth much. Most of you have been over there
10 and looked at it and would agree it's probably not worth
11 \$45,000, which is what this boat is worth on paper.

12 This agreement will deduct \$500 a month
13 for the boating season from their credit on the trade. And
14 \$500 is a reasonable number, I think, because of the fact
15 that they're really not using it right now except if there's
16 a dire emergency that comes up.

17 And, so, what we want to do is do this
18 Memorandum of Understanding and keep the use of it legal, and
19 then hopefully at the conclusion of this year, it will be
20 credited in on a trade on that property.

21 DR. HANEY: Do you need a motion?

22 CHAIRMAN CHRISTOPHER: Yes, sir.

23 DR. HANEY: So moved.

24 MR. HAZLETTE: Second.

1 CHAIRMAN CHRISTOPHER: And a second
2 from Tim. Discussion? All in favor, signify by saying aye.
3 Opposed, likewise. Motion carries.

4 I see our celebrity is here today.
5 David, the Lexington Herald Leader did you well. It was a
6 nice article. Next on our list is modifications on our hydro
7 lease, Steve.

8 MR. REEDER: The hydro lease was
9 approved in July, 2008 with Mr. Brown Kinloch's company for
10 the hydro unit on Lock 7, and that followed about two or
11 three years' worth of give and take and work. And the
12 Federal Power Commission has a lot of preemptory rights in
13 this thing and you have to work around them.

14 The lease that we approved and which
15 the lessees have been working off of basically is--well, it
16 was approved by the Finance Department and it was approved by
17 the Governor. The Governor signed it.

18 Then we get notification from the
19 Federal Power Commissioner through Mr. Brown Kinloch that
20 there's two or three things they don't like about it.

21 And, so, I'll go over two or three
22 things that really don't give me a problem. And the way I've
23 addressed them, Finance's Legal Department has got this thing
24 right now and I have not heard from them, but I made an

1 addendum to the lease so that it would be clear what we were
2 changing. I'm just really adding some things.

3 It doesn't appear to give me a problem.
4 For example -- you can read them -- Terms and Conditions are
5 all embodied there and the lease term. The lease term, it's
6 concurrent with the life of the license. That's the way it's
7 set up and it runs for several years.

8 FERC, or the Federal Energy Regulatory
9 Commission, they want it to say the lease and operating
10 agreement is automatically renewable upon the relicensing of
11 the project by FERC.

12 I don't have a problem with that
13 because the nature of this stuff anyway is that these
14 licenses don't die. You can't kill them. As long as
15 somebody wants to operate it -- David, you know more about
16 this law than I do -- but as long as there is a willing
17 lessee, if somebody steps forward willing to assume
18 responsibility for that site, then, that thing lives on
19 anyhow. So, it might as well be renewable.

20 Another thing that probably gave us a
21 little more problem than the rest of it, but I'll tell you
22 how I solved it, was in Section 9: Maintenance of Leased
23 Premises. The Federal Power Commission basically wanted to
24 reserve the right to come in and tell the lessee of any

1 repairs that they think that he should make, and the project
2 is designed not just as the power plant itself but it could
3 be the dam it sits on. It could be the pool. It could be
4 anything.

5 So, that gave us a problem. My thought
6 was I couldn't recommend that at all. I said I don't want
7 somebody coming in here and telling me they think we ought to
8 do thus and such to it or tell him if we don't have at least
9 some prior input into it. You know, they could say build a
10 canal around the dam or something.

11 So, we went to the lease. In fact,
12 it's the same lease that Mr. Kinloch's company has with the
13 State of Ohio on the Muskegon River David was talking about a
14 while ago. He has a power plant that he operates up there
15 under a lease with the State of Ohio.

16 The State of Ohio had this same kind of
17 problem. They said, look, we don't want somebody coming in
18 here. He doesn't want to come in here and start fooling with
19 our stuff. But if they do come in and do it, you have to
20 have a way to address it if the Federal Power Commission says
21 do something.

22 So, what he did or what we did or what
23 I did, I went and just lifted that language out that was a
24 compromise language that the Federal Power Commission

1 ultimately accepted in that final lease, except I added one
2 thing. David and I talked about it but I don't think your
3 lawyers found any problem with it, David.

4 MR. BROWN KINLOCH: I can tell you our
5 attorneys looked over this and had a little of the same
6 heartburn that the Commonwealth has with it but realizes that
7 this is what FERC is going to demand. So, we're okay with
8 your language.

9 MR. REEDER: Right. I appreciate that.
10 And, so, I sat down and rewrote it myself, but I did put one
11 thing in. All these conditions and procedures that the State
12 of Ohio insisted on as far as a FERC demand that something be
13 fixed, I put at the end of it, I added a clause:
14 Notwithstanding any provision of this section, the lessor --
15 that's us -- reserves the right to reject any requested or
16 ordered work that, in its opinion, is inconsistent with its
17 legally mandated water supply mission.

18 In other words, don't tell us to do
19 something if our engineers tell us it's going to really
20 create a water supply problem for us. And if it creates a
21 water supply problem for us, it's going to create one for
22 him. He can't run that thing.

23 So, it's just one of those federal
24 things I guess you run into, but I don't have a problem with

1 that.

2 Now, the third thing is Section 11:
3 Assignment of the (Sublease) Lease. We generally have a
4 prohibition against that. Most state leases do.

5 The operable language that they wanted
6 was: Notwithstanding the provisions of this section, the
7 license issued by FERC incident to this project, if the
8 license is ever transferred to another entity other than the
9 lessee, then the parties agree that the lease shall be
10 transferred to the new licensee.

11 I don't mind that because it's so hard
12 to get that license to begin with. I mean, you know, if you
13 sell out and somebody else gets it, the typical state lease
14 says it's got to have our concurrence. I think that does not
15 apply to something where it's so thoroughly checked out.

16 MR. BROWN KINLOCH: Also, you and the
17 public, anyone has a number of opportunities to comment on
18 any transfer of a license. So, it's not going to just happen
19 without your input.

20 MR. REEDER: Right. So, if the Board
21 agrees with the inclusion of this addendum to the lease that
22 we've been operating under for a year and there's not any
23 problems with the Finance Department's Legal Department over
24 there who has got it right now, if they don't come back and

1 say something is wrong with it, then, I'm just asking for
2 your concurrence for us to drive on and get it signed and
3 file it with FERC.

4 Of course, now, if you look at the
5 signature page there, it's got to go back to the Governor.
6 It's got to go to everybody else, the Finance Secretary and
7 its lawyer, Randall, myself. So, it's got a ways to proceed,
8 but we want to get it on its first leg if nobody has a
9 problem with it.

10 MR. BROWN KINLOCH: Just one thing.
11 Mr. Reeder had a suggestion that the proper thing to do might
12 be to get all the different people who would comment on this
13 on board with it, then send it to FERC, make sure they don't
14 have any problem with it before getting all the signatures.

15 And I talked to Mr. Sachs up in
16 Washington with that suggestion and he said, yes, FERC would
17 be fine with that to go ahead with that procedure of getting
18 them to take a look at it after our agencies have taken a
19 look at it, make sure everybody is on board before we go
20 through all the labor of getting all those signatures.

21 So, they're on board with that, too.

22 MR. REEDER: Exactly. So, once we
23 clear the State hurdles informally with this thing and your
24 folks are okay with it as the lessee, then, we'll ship it up

1 there and let them look at it. The Governor has already
2 signed this once. This is the second time. We certainly
3 don't want him to sign it three times.

4 We've got a twofold mandate here.
5 We've got not only FERC being in charge of these hydro
6 things. Even a state-owned dam like 7 is, there's still
7 certain preemptory rights that the federal government retains
8 on this stuff.

9 And then we have a state law that was
10 passed in the last session, Representative Adkins' bill, that
11 green energy bill. We have that which is a specific mandate
12 to view these things with an open mind. That would be my way
13 of saying it. It doesn't say you have to do it in every
14 instance if it's contrary to some other policy, but you sure
15 can't go out and try to block it for no good reason. So, we
16 have that mandate as well.

17 MR. WARE: So, there's been really no
18 preliminary indication from FERC as to the acceptability of
19 this?

20 MR. BROWN KINLOCH: We got a letter
21 from them saying the changes that they wanted and that was
22 the basis of what Mr. Reeder has put together. So, we
23 haven't taken it back to them to say is this good. He wanted
24 to get some approvals on this end.

1 And the one thing that we needed was
2 the lessee's approval and our attorney has signed off on it.

3 MR. WARE: But no opinion on this
4 particular (f) here, though?

5 MR. BROWN KINLOCH: We haven't talked
6 about that. All we used is the basis of what we did up in
7 Ohio on the Muskegon which was accepted by FERC.

8 MR. WARE: Did they have a provision
9 like that in there?

10 MR. REEDER: No.

11 MR. BROWN KINLOCH: No. Mr. Reeder
12 added that.

13 MR. REEDER: That's my provision.
14 Based on the indoctrination that your company has given these
15 people about our mission down here, I can't see that this
16 would be a great surprise to them.

17 MR. BROWN KINLOCH: What Mr. Reeder is
18 referring to is when this first came out, our response was
19 was that the Commonwealth was looking at this; and keeping in
20 mind that the Kentucky River Authority's primary mission is
21 water supply and they do not and will not let anything get in
22 the way of that primary mission. And when I talked to the
23 FERC people informally, I reinforced that, and they said they
24 were well aware of that, of the importance of that to the

1 Commonwealth of Kentucky.

2 MR. WARE: Maybe not sympathetic but
3 they were aware of that.

4 MR. BROWN KINLOCH: I think they are
5 sympathetic to it. A while back--you know, they've got
6 certain rules and things have to be a certain way; but one of
7 the things they told me, their primary goal was to make sure
8 that there's a lease that was a workable, operating agreement
9 between a lessor being whoever owned the dam -- and there's a
10 lot of dams owned by states around the country -- and the
11 lessee.

12 So, they wanted to make sure that there
13 was a good working agreement and working relationship there.
14 That's one of their other primary things, but there are
15 still certain hurdles, certain things that they've got to
16 see in the lease, and that was their response.

17 MR. REEDER: It seems like a frivolous
18 thing to some extent. We've got two satisfied parties
19 working on this thing. You'd think that's what they want,
20 and hopefully it is. This is just clean-up stuff for them.

21 CHAIRMAN CHRISTOPHER: Any other Board
22 members' thoughts on this addendum. Would anybody be willing
23 to make a motion that we approve this and send this on to the
24 next step?

1 MR. CAINES: I'll make that motion.

2 JUDGE COLLINS: Second.

3 CHAIRMAN CHRISTOPHER: Any other
4 discussion? Those in favor, signify by saying aye. Opposed,
5 likewise. Motion carries. Thank you.

6 I noticed in the paper, David, that you
7 talked a little bit about maybe Dams 12 and 14. Explain to
8 us a little bit. You have a permit that you potentially
9 could do something there. What does that mean?

10 MR. BROWN KINLOCH: That's sort of the
11 first step, and most of these lock and dams have preliminary
12 permits. They don't cost you anything. It's a very easy
13 thing to file and get, and it's basically first through the
14 door.

15 CHAIRMAN CHRISTOPHER: So, in other
16 words, that's just you've got so many years?

17 MR. BROWN KINLOCH: What that does is
18 that gives you three years to do all of the work you need to
19 do to file for a license, and that sort of reserves you as
20 first through the door as far as a license.

21 Now, when you filed it, someone could
22 file a competing license, but you've sort of got a window of
23 time that you can work inside that nobody else can file in
24 front of you when you have a preliminary permit.

1 Getting a preliminary permit is simple.
2 Getting a license is a two- to five-year process where you
3 have a whole lot of consultation with about fifteen federal,
4 state and local agencies. It's a lot more detailed.

5 MR. REEDER: And there's one addendum
6 to that, Randall, and that is this, is that the first four
7 dams are federally-owned. The rest of them are state-owned.

8 Now, with regard to those federally-
9 owned dams, practically all of our dams--not all of them but
10 a good many of them have been the subjects of these
11 preliminary filings in other places. Dam 4 is for one thing,
12 4 and 3 and 2, I believe, David, right? One is not. Nobody
13 can put one in that. It's submerged half the time.

14 But the problem there is we were told
15 when we undertook the lease from the Corps in 2001 that they
16 would transfer or they needed five years to declare them
17 surplus -- it was a five-year limit -- and in five years,
18 they would be declared surplus officially and they would give
19 us a quitclaim deed to these four.

20 Time past. I wrote a letter last year
21 or two -- and I think I told you this -- and said, you know,
22 you started the process, you know. We want our deed. They
23 came back and said, no, said we're going to have to have
24 special legislation passed by Congress in order to do this.

1 Well, they didn't pass any special
2 legislation before. They were done administratively and
3 in-house. So, I wrote them back and told them that and they
4 have not responded at this time.

5 So, where it interacts with this hydro
6 thing is that based on the work that the law firm you use,
7 Warner, in Washington, they did some work for us when we were
8 negotiating---

9 MR. CAINES: Spiegel McDermott.

10 MR. REEDER: Spiegel McDermott. Based
11 on their research, these federally-owned dams gives them a
12 little bit more leg up than it does on maybe a purely
13 state-owned dam as far as the establishment of this stuff.

14 So, that means that we have to proceed
15 with I guess caution as to what we would do as far as major
16 construction on one of these dams because somebody may take
17 Dams 2, 3 and 4 and say, hey, we want to put a power plant on
18 them, and being in Corps' ownership, they're liable to say go
19 right ahead and we're sitting on the sideline with them.
20 And maybe the sideline wouldn't be a bad place to be sometime
21 on this stuff.

22 However, one of the technologies they
23 would use or could use is drop the thing down in a lock pit.
24 We've got a policy to try to keep the first four locks open

1 and that's a new technology now. I just point that out with
2 these things not being in our ownership and with this federal
3 law.

4 MR. BROWN KINLOCH: But even when you
5 don't have ownership, you still have the ability to consult,
6 especially as the operator of these. So, you would have a
7 major seat at the table during any type of any licensing
8 process. It just wouldn't be dumped on you.

9 The other thing to keep in mind is that
10 the majority of these preliminary permits around the country
11 are made up of two or three companies that have hundreds of
12 these preliminary permits. And the chances of them
13 developing more than a handful of them at any given time is
14 very slim.

15 They mainly do this to go and impress
16 investors to put a lot of money into their companies saying,
17 oh, we've got two hundred sites we're working on. Well, you
18 can talk to Mr. Hamilton here and know that they haven't been
19 doing much consulting with him with respect to these sites.

20 When we did the project with the
21 Muskegon, Lock 6 on Muskegon as the basis of this, that had a
22 preliminary permit filed by a company that had done that that
23 just had broadcasted and the whole thing is out there, and
24 finally the FERC told them they had to give up some of them

1 because they weren't doing anything. They were just holding
2 the rights for three years and then not doing anything, and
3 then again in three years, they'll come back and ask for
4 another permit even though they had done nothing.

5 MR. REEDER: David has talked to this
6 company in Utah or Idaho or wherever it is that has got these
7 on these dams up here, holds these permits, and they didn't
8 express any active interest in them. They didn't say they
9 were disinterested but they weren't doing very much work on
10 them, but I think it's still a problem with that thing being
11 in federal ownership.

12 MR. BROWN KINLOCH: One of the
13 interesting things about federal ownership is that if you do
14 a hydro project and it's federally-owned, they want the
15 project boundary to be absolutely as small as possible, just
16 around the power plant, not the dam, not anything else.

17 If it's not federally-owned, it's got
18 to include the dam, it's got to include the reservoir, any
19 tributaries up to the point--I mean, it's got everything in
20 there. And, so, when they're dealing with their own
21 properties, it's just the opposite of how they deal with
22 everybody else.

23 CHAIRMAN CHRISTOPHER: Thank you, Dave.
24 Thank you, Steve. Hopefully, we'll get that little project

1 laid to rest and we won't have to deal with it too much more
2 and we're up and running. Right now, we're running about as
3 well as we can run it down there.

4 MR. BROWN KINLOCH: I checked right
5 before I came over. We had all three units running and we've
6 got at least enough water to run three of them for another
7 week or so. If we don't get any rain, we may have to shut
8 one of them down.

9 MR. CAINES: David, do you have tours?

10 MR. BROWN KINLOCH: For you or anybody
11 else on the KRA Board, and I've offered this to Mr. Reeder,
12 I'll set up a tour if the KRA Board wants to come out there.
13 We can set up a tour. It's still not real pretty inside,
14 even though we're going to work on that this summer, but we'd
15 love to have you out there to see it. Just about anytime you
16 say, we'll set it up, bring you in by boat. We have a
17 pontoon boat to bring you in.

18 MR. REEDER: Mr. Chairman, maybe we
19 ought to consider meeting down there at Shakertown.

20 CHAIRMAN CHRISTOPHER: There you go.
21 Let's talk about that before we dismiss today.

22 Let's move on. Item No. 10. I think
23 Steve and Tim and Judge Ted Collins, I think you all have
24 been working on a response plan. And I think we have with us

1 Deron Rambo with the Franklin County Emergency Response Team.
2 Welcome. We're glad you're here.

3 MR. REEDER: I need Tim's help on this
4 and Judge Collins, and then I think Deron probably can chime
5 in where he needs to. We have noticed or I have noticed and
6 Sue Ann says since she's been on her new assignment with some
7 of the things that she's been involved with have noticed
8 several things that are very disturbing to us.

9 We've already talked about the lock and
10 dam properties, that anything on the land itself or anything
11 that is within those buoy lines is really our responsibility.

12 Where we have legal liability, we have a lot of exposure for
13 a lot of reasons. We've got a lot of reasons to protect
14 those properties.

15 We've had some incidents in Frankfort
16 like the classic thing of a boat getting stuck on the dam
17 last year. What are you going to do? Are you going to leave
18 it sitting on there? You've got a hazardous materials
19 situation and all that kind of thing. In Frankfort, it's
20 pretty easy to remediate that because you've got a well-
21 organized city/county effort set up and you make one phone
22 call and you're pretty well home free on it.

23 Our problem is a lot of times we find
24 out about a drowning, about any kind of an incident, we find

1 out on Channel 27 or somewhere about it. We don't have
2 anybody to tell us about it. Some police organizations and
3 some organizations of authority on this river I'm convinced
4 don't know who owns those dams and locks, and sometimes
5 there's confusion of who is in charge of what whenever
6 something happens at one of them.

7 What we need to have is that we need
8 for our own reasons and our own purposes, we need to have an
9 emergency response plan for our property and our dams and
10 locks within the perimeters of what we own and control.

11 We need an emergency response plan
12 coordinated with local officials, and part of that is their
13 capabilities of response, who is in charge normally. We need
14 a line of communication back to us to tell us what's going
15 on. We're not going out there and rescue anybody, but we're
16 not going to sit there and let something happen on our
17 property or we shouldn't without us knowing about it.

18 I went to Judge Collins and Tim
19 Hazlette primarily because of their personal backgrounds.
20 Ted Collins -- I'll borrow Jerry Abramson's phrase on you --
21 he was sheriff for life here, as long as I can remember, I
22 think since I was a child. He's got a law enforcement
23 background, plus now he is County Judge and he's got the
24 local emergency management function under him or a person so

1 shared with the city.

2 Tim Hazlette, I think most of you know,
3 but maybe not all of you know the extent of his career. He
4 was a career State Police officer. He has been a Post
5 Commander. He's been assigned to various and sundry kinds of
6 things and knows law enforcement backwards from a state
7 level. Ted knows it better from a local level. Tim was also
8 Deputy Commissioner of the State Police a few years ago under
9 Governor Patton.

10 So, these two gentlemen were filling in
11 the blanks for me. I got tired of finding out about this
12 stuff on TV or somebody calling me and saying somebody
13 drowned over at Dam 6 the other day or 7. Our people would
14 be thrown off the property in a lot of instances. So, we
15 need some way to coordinate that and clean that up.

16 So, what we're proposing to do is have
17 a plan done for every location. And the way we want to
18 specifically do that and what I'm asking for here is twofold.

19 I'm asking for approval to establish a plan for all 14
20 locks, identifying who is in charge, their capabilities of
21 responding, and a host of things that you will find that this
22 model for Dam No. 4 contains.

23 The Frankfort Fire Department did this.
24 And the next part of that we're going to talk about is the

1 specific people we would use to do this and we would use
2 contract people or part-time employees, whichever way it
3 works out, but we're funded for it. We're not going to
4 over-spend anything.

5 I'm going to ask, Mr. Chairman, that
6 whatever we do here today, that Mr. Hazlette and Judge
7 Collins be unofficial overseers of it to review what goes on
8 and offer suggestions with respect to how it plays out.

9 So, we're asking secondly to utilize
10 Mr. Rambo's deputy, a gentleman that we got to know very well
11 by the name of Tommy Russell. He's local. He's the Deputy
12 City/County Emergency Management Officer under Mr. Rambo.

13 He was appointed by Judge Collins and
14 the Mayor of Frankfort dually just like Mr. Rambo was, and he
15 is paid by the City only when there is an actual emergency is
16 my understanding. Mr. Rambo is a full-time employee.

17 Because of Mr. Russell's vast
18 experience, the Mayor brought him in during the ice storm and
19 he never let him go, and Judge Collins feels the same way.

20 And, so, we would like to use him.
21 I've explored using Mr. Russell on a contract basis or an
22 employment service contract -- that's the way they like to it
23 on a lot of this stuff -- or as a permanent part-time
24 employee within certain limits.

1 And when he's not here, when Mr.
2 Russell is not available, Mr. Rambo has agreed I think to
3 back him up. We would not be able to give him orders to go
4 out and do things; but if we had a problem, he would be the
5 contact in Mr. Russell's absence.

6 JUDGE COLLINS: Steve, let me interrupt
7 you right there and say that Mr. Rambo would not be a paid
8 employee. He would be a volunteer employee.

9 MR. REEDER: Exactly. I missed that.
10 We would get him free. We would use Mr. Russell at the
11 salary he left the Fire Department at, which was I think \$26
12 an hour. That would be what we would do. That's only fair
13 because he does bring a lot to the table on this stuff and he
14 can begin working on these plans immediately.

15 Tim, I'd like to hear your comments.

16 MS. ELLISTON: Can I interrupt?

17 MR. REEDER: Yes. Let Sue Ann talk.

18 MS. ELLISTON: This is something, too,
19 that we've talked about with the Watershed Management and
20 Watch Programs, to just try coordinate all these agencies and
21 all these people together, and that's one thing that we don't
22 know. We don't know who to call, who is in charge of this,
23 who is in charge of that. Who do you call when somebody
24 happens, and then we'd always get left out.

1 KRA is always the last person to know
2 what's going on, and we need to be a point of contact for all
3 these different things -- if it's a spill, if it's a
4 drowning, if it's a boat going over the dam, whatever.

5 MR. REEDER: Even environmental stuff
6 to some extent. But Tim, I think, raised the point in our
7 discussions that we're basically unknown to the law
8 enforcement world. We really are. The local police, they
9 don't know who we are. Fish and Wildlife, most of them know,
10 but we needed to tighten that up a whole lot.

11 And there's some law enforcement
12 agencies for things other than what would be classified as an
13 emergency management issue that have to be run through a
14 police agency. Tim says the primary one ought to be Fish and
15 Wildlife. I agree because of the water.

16 Secondarily, we probably ought to have
17 some secondary people designated as well and get specific
18 contacts, and Mr. Russell is well capable of doing that.
19 I'll tell you about him. While he was with the Fire
20 Department, he organized and ran an elite unit within the
21 Fire Department called the Technical Rescue---

22 MR. RAMBO: He was in charge of the
23 Technical Rescue Team and Dive Team.

24 MR. REEDER: This was high-angle

1 rescues, water patrol. It was trench rescues, all kind of
2 stuff, anything that required--sort of like the Marine Corps
3 being called in when the Army can't do it. That's sort of
4 what he ran.

5 They were a unit that operated separate
6 within but separate from the Fire Department basically and
7 they would appear at a fire maybe with the rest of them; but
8 when there was something that came up in one of these areas,
9 they were the ones that were called, and that's where we got
10 acquainted with them because of the boat down there. And I
11 saw some of the stuff that they did which was not what normal
12 people can do.

13 So, he's pretty well qualified in that
14 regard, and he's got this unique setup working with Mr. Rambo
15 and attached to the higher echelons of the city and county
16 here.

17 Mr. Rambo, in turn, is connected with
18 and his office is connected with all the emergency management
19 people up and down the river. They have an association just
20 like county judges do. They know them all from one end of
21 the state to the other, and I talk to them and they lose me.

22 It's a world that I don't know a lot about, but I do know
23 that they're pretty well organized.

24 So, what we're proposing to do in a

1 nutshell here is to approve the formation, I guess, of an
2 emergency management plan for each of the locks and dams and
3 then also approve the employment of, or employment one way or
4 the other, by contract or by part-time employment, however it
5 would be phrased or however the Department of Finance would
6 want to do it, of Mr. Russell who specifically would be
7 compensated by us and run this.

8 And I'm thinking about an upset
9 limit -- and this could change -- I'm thinking of an upset
10 limit of \$30,000. The things that he's presented me with
11 won't take that much money, but I don't know when I might
12 need him for something that's not part of this stuff.

13 With the way our crews are situated --
14 we've got great crews. We've got great people working for us
15 and they're the best, but the closest one is in Nicholasville
16 or High Bridge and the next closest one is in Irvine or in
17 Estill County and then I've got them in Lee County.

18 So, they're in the other end of the basin and I don't have
19 anybody to call on real quick. Mr. Russell can lock a boat
20 in an emergency down here. His crew is trained to do that.
21 Earl Gulley taught him how to do that.

22 So, that's sort of what we're aiming
23 at. I know we're talking in sort of a scattered way here,
24 but I think you get the idea.

1 Tim, do you have some comment to make
2 on it?

3 MR. HAZLETTE: Other than the activity
4 that exists on the Kentucky River, particularly I'm more
5 familiar with the headwaters of it than I am the lower
6 portion, but it's a valuable infrastructure to the state.
7 And to move stuff, even though I didn't realize anything
8 navigated on it that much, but now that they're moving those
9 bridge trusses over there to Gratz, so, there's a need to
10 keep it intact and protected, I guess is the best way to put
11 it.

12 This plan, basically I think the
13 outline of it would be that each of the 14 locks and dams
14 would be identified. The property lines would be established
15 on the map and then a manual will be produced showing perhaps
16 aerial photos and access roads and all those kind of things
17 so that if you do have a crime scene or somebody wanders off
18 or gets lost or drowns, then, responders will know how to get
19 there.

20 And it sets up an incident command
21 structure so that there's not an issue about who does what
22 because, depending on the activity and the location, you can
23 imagine that there could be a lot of folks involved or not
24 hardly anybody, taking into account the fact that the

1 Authority itself doesn't get notified on these things.

2 Mr. Rambo has suggested and there's a
3 mechanism in place with the Emergency Operations Center at
4 the Boone National Guard headquarters that they receive those
5 notifications from the Division of Emergency Management
6 folks, and all of this would be done within the purview of
7 Chapter 39 that governs emergency management and planning in
8 the state.

9 So, I think we just need to identify
10 the things and who would be responsible or who the Authority
11 prefers to be responsible. A lot of folks will show up, but
12 we have the authority to designate who we think should be the
13 primary agency so that if they're not the first responders
14 but they get there at some point after the incident, then,
15 there's not---

16 CHAIRMAN CHRISTOPHER: Managers of that
17 scene.

18 MR. HAZLETTE: Exactly, and you don't
19 get into a jurisdictional issue. And I just suggested Fish
20 and Wildlife because they're not bound by jurisdictional
21 issues and they're represented in all counties. We've
22 probably got the best Fish and Wildlife agency than anybody
23 in the country has got, and our Fish and Wildlife officers
24 are highly regarded by the citizens in the counties that they

1 work. So, that's my take on it.

2 MR. REEDER: Judge Collins.

3 JUDGE COLLINS: Well, when Tim Hazlette
4 was Captain of Post 12 and I was Sheriff many, many moons
5 ago, as Steve pointed out, we realized that with our jobs,
6 there's a lot of liability. We had people's lives at risk
7 and things that we said and did would make a difference in
8 people's lives.

9 This Board has a liability issue, too.
10 Now, I think you all realized when you got on the Board
11 there's some liability being on the Kentucky River Authority
12 just like anything else you do.

13 I believe by putting this employee in
14 place, it will reduce our liability. There's no way that you
15 can get away from liability completely, but putting this in
16 place and having Mr. Russell do a plan and be available and
17 help coordinate problems that comes up on the locks and dams
18 from Carrollton to Beattyville I think would be really
19 beneficial to the Kentucky River Authority.

20 CHAIRMAN CHRISTOPHER: So, what we're
21 looking at here is we're asking for just approval that we
22 hire Mr. Russell to help us develop these emergency response
23 plans for all 14 locks and dams and that he will be hired
24 part-time, and we're going to cap that probably off at

1 somewhere around the \$30,000 mark. And then we'll bring
2 these plans back to the Board as soon as we can get them
3 completed for our approval.

4 MR. HAZLETTE: I think from a Board's
5 perspective, I think we say that we give the authority to the
6 Executive Director to hire whomever. Mr. Russell would be
7 the person that seems to be the best qualified and situated,
8 but it doesn't matter to us as a Board, but the Director can
9 hire who he wants to.

10 JUDGE COLLINS: And he may want to
11 interview a number of people with similar backgrounds as Tom
12 Russell.

13 MR. WARE: I think that's appropriate,
14 but at \$46 an hour---

15 MR. REEDER: Twenty-six.

16 MR. WARE: Oh. I thought you said \$46.

17 MR. REEDER: These emergency plans,
18 whatever we come up with, I think this would be filed with
19 the State emergency management people.

20 MR. RAMBO: A couple of places. In the
21 State Emergency Operations Plan at Boone National Guard
22 Center but also obviously every 120 counties is required by
23 KRS to have a local emergency operations plan. Maybe have
24 that plan filed in the county. If the dam property touches

1 that county on either side of the river, that portion of the
2 plan probably ought to be included in the local plan.

3 MS. ELLISTON: This is something I'd
4 like to take with me as I start visiting the counties, too.
5 I think it would be a great tool.

6 MR. REEDER: This is a companion plan
7 to what we did a few years ago. It was prior to a lot of you
8 folks coming on board, but we did a structural--we called it
9 a structural failure plan but it sounded too fatalistic. So,
10 we changed the name of it to a structural contingency plan,
11 which means that if the dam falls in, what do you do.

12 David was in charge of that internally
13 with Bill Grier as a contractor before Bill Grier was ever on
14 the Board. Of course, he's not on the Board anymore, but
15 Bill was our engineering general consultant, and Bill and
16 David did that and they visited every site.

17 And what that plan is, it's on file and
18 distributed through the basin also, and it was done in
19 conjunction with the cities and counties along the river that
20 if a dam fails, here's what happens.

21 We also had that cleared through the
22 Finance Department, and I guess we'll have to come over again
23 since we've got new managers in Finance, because every time
24 they change horses, we usually bring it back and say the

1 whole thing hinges on the Secretary of Finance doing an
2 executive order to waive all these purchasing rules for us to
3 buy rock and hire truckers and all that sort of thing. They
4 all agreed to that obviously, but it's just a matter of
5 familiarizing, Jerry, your boss and some of these people.

6 I'll call you and try to set that up
7 sometime. And we're reaching a time, too, on that plan where
8 we're going to have to review it to see if some of those same
9 vendors are in business. It provided for the utilities,
10 particularly such as Beattyville or some of the smaller
11 users, water districts and so forth, vendors and they were
12 supplied with prices for pumps to access the river stream to
13 keep their plants running and that kind of thing.

14 So, this is kind of a plan that's sort
15 of similar to that, and that plan received some real
16 notoriety in the Herald Leader at the time it was done -- a
17 good article -- but it always kind of worried me that we
18 didn't at least something on paper that we could access. So,
19 this plan is a little bit like that.

20 MR. WARE: Are we confident that we can
21 assimilate up to \$30,000 contractual obligations given our
22 discussions early in the meeting about the projects that we
23 discussed and the looming budget cuts that are still
24 confronting the Executive Branch agencies?

1 MR. REEDER: Yes, sir. It's Tier I
2 money, not General Fund. It's not Tier II. So, we can
3 handle that.

4 MR. HAZLETTE: Mr. Chairman, I move
5 that the Board give authorization to the Executive Director
6 to expend funds identified for the establishment of emergency
7 management plans for all 14 locks and to have the authority
8 to employ those persons necessary to accomplish that.

9 JUDGE COLLINS: Second.

10 CHAIRMAN CHRISTOPHER: Do we have a
11 time line that we'd like to maybe try to get this done by?
12 Just as soon as we can? This is something that's not going
13 to take just a couple of weeks. It's going to take quite a
14 while, I think.

15 MR. REEDER: It will take a while.
16 We'll get started as soon as we can.

17 CHAIRMAN CHRISTOPHER: Hopefully, we'll
18 have something as soon as we can.

19 MR. WARE: Is the upset level \$30,000
20 for this entire project? Are there funds other than the
21 contractual dollars?

22 MR. REEDER: No. We're throwing that
23 out based on what we analyzed as far as to get it started and
24 get it going. We don't intend for it really to end because

1 it will change, but that doesn't mean it's going to be
2 \$30,000 every year. It doesn't mean it's going to recurring.
3 We anticipate a continuation of this effort, but we don't
4 anticipate plowing the same ground with it, and we can't
5 really put a price tag of what would go beyond the initial
6 phase of it. It probably would be less than that, to tell
7 you the truth, Bob.

8 MR. WARE: So, you anticipate it being
9 \$30,000 needed for the current fiscal year?

10 MR. REEDER: Yes, or starting tomorrow,
11 that fiscal year.

12 CHAIRMAN CHRISTOPHER: Anything else?
13 All in favor, signify by saying aye. Opposed, likewise.
14 Motion carries.

15 MR. DAY: Randall, I have another
16 question. Steve said there that no one knew who we are and I
17 kind of agree with him. About the time I came on this Board,
18 all I had ever seen was in the paper, but you can't always
19 believe that.

20 Would it not be pretty good to have
21 some sort of signage at each of these dams and locks owned
22 by Kentucky River Authority with maybe the River Authority's
23 number on there, and on the weekend, it would have a pass
24 thru to someplace else where you could get in touch with

1 emergency management people because I've been to several of
2 them and I haven't seen any signs, including the one at Dam
3 4.

4 MS. ELLISTON: That's one of the things
5 that I definitely want in this plan is we just have our
6 office number on there. We need a point of contact, whether
7 it be me, Steve, Tommy or whoever it's going to be, but their
8 name and a 24-hour emergency number.

9 CHAIRMAN CHRISTOPHER: Why don't you
10 come up with a little design, and then the next time we meet,
11 we might look at that. There's no reason why we couldn't buy
12 signage and get that set up. I think that would be great to
13 get those up.

14 Engineer's Report, David.

15 MR. HAMILTON: I need to touch on a few
16 quick things. The Dam 3 project is underway. They mobilized
17 as of yesterday at the site. That's the first thing.

18 The second thing, at Dam 9, we've got
19 an issue that came up here in the last few weeks. Remember
20 last summer, we had a lot of dust or a few dust complaints
21 down there at the project site at Dam 9. I don't know if you
22 all have been down there. It's a real tight community, a
23 real tight road coming out of the project site.

24 Last summer, we had a nuisance

1 complaint -- dust in the air, air-conditioners being clogged.

2 In the last few weeks, we kind of heard second-hand
3 complaints about some homeowners' dogs and rabbits going
4 blind.

5 And then we also got a call about some
6 reports about some health concerns by a particular family
7 that lives down close to the site regarding a two-year-old
8 girl and an older grandmother in the same family.

9 It got to the point where we felt we at
10 least needed to take a pretty close look at it and see if any
11 of their health concerns were being caused by the dust and
12 the silt that was coming out of the project site.

13 So, we hired Arc Environmental
14 Consultants to basically review the sediment. Some of it had
15 washed down into their property just by the nature of the
16 construction. And, so, they took five sample areas and
17 sampled. We basically gave them direction to sample for
18 anything that they felt would cause these type of health
19 concerns -- heavy metals. They tested for PCBs, organic
20 compounds pesticides, herbicides.

21 The first few pages are the executive
22 report and the rest of it is all the data that they actually
23 tested for.

24 Long story short, the sediment analysis

1 came back everything within the EPA guidelines. There was
2 one for arsenic which was above the EPA guidelines, but they
3 conferred with the Superfund Branch and they said just
4 background in Kentucky, the levels that they found in the
5 sediment, if you were to go out here and sample in your own
6 back yard, that's typical for Central Kentucky, and they
7 didn't see anything out of the ordinary for that arsenic
8 reading, even though it was above what the EPA had on their
9 guidelines, the reason being the EPA guidelines are for their
10 Region 9. That's just what they use. They didn't have
11 specific arsenic guidelines for our region, but that's why
12 there was discrepancy.

13 The other thing that we found out, and
14 we've been open with the family's doctor, they shared their
15 urine sample testing and blood testing that they did on the
16 girl and they didn't find anything in either of those that
17 would point to anything related to the project.

18 So, we've relayed this to their family
19 doctor, the findings of our sediment analysis. And, so, we
20 told the contractor that--while we were doing this, we told
21 them not to take any more silt off the site until we finished
22 this analysis. And, so, now that we have this, we've
23 instructed them that they can continue to haul the silt back
24 off of the project.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

That's all I've got.

CHAIRMAN CHRISTOPHER: Thank you, sir.
Steve, anything else?

MR. REEDER: No, sir.

CHAIRMAN CHRISTOPHER: Nothing from me
either. Anything from the Board members?

MAYOR MILLER: You wanted to talk about
having a meeting at Shakertown.

CHAIRMAN CHRISTOPHER: Our next
meeting, could we set up something closer down in that
direction?

MR. BROWN KINLOCH: Just as far as
getting boats in, it's probably best to do it in the fall
when the water level is down so I can bring you all the way
down and you won't have to walk so far.

CHAIRMAN CHRISTOPHER: We'll try to
schedule our next meeting or within the next two meetings as
we get later into the low-flow season, we'll try to do that.

Anything else from the Board?

MAYOR MILLER: I make a motion we
adjourn.

MR. GRAVES: Second.

CHAIRMAN CHRISTOPHER: We're adjourned.

MEETING ADJOURNED

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

STATE OF KENTUCKY
COUNTY OF FRANKLIN

I, Terri H. Pelosi, a notary public in and for the state and county aforesaid, do hereby certify that the foregoing pages are a true, correct and complete transcript of the proceeding taken down by me in the above-styled matter taken at the time and place set out in the caption hereof; that said proceedings were taken down by me in shorthand and afterwards transcribed by me; and that the appearances were as set out in the caption hereof.

Given under my hand as notary public aforesaid, this the 16th day of July, 2009.

Notary Public
State of Kentucky at Large

My commission expires February 10, 2013.