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UNITED STATES OF AMERICA

FEDERAL ENERGY REGULATORY COMMISSION

Office of Energy Projects

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TransCanada Hydro Northeast, Inc. :

Wilder : Project No. 1892-026 -

Bellows Falls : Project No. 1855-045

Vernon : Project No. 1904-073

New Hampshire/Vermont :

FirstLight Hydro Generating : Project Nos. P-1889-081

and

Company : P-2485-063

Massachusetts :

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CONNECTICUT RIVER PROJECTS

CUMULATIVE EFFECTS - Daytime Meeting

Great Falls Discovery Center

2 Avenue A

Turners Falls, MA 01376

Thursday, January 31, 2013

The daytime meeting, pursuant to notice, convened at  
9:15 a.m., before a Staff Panel:

1 KENNETH HOGAN, Project Coordinator, FERC

2 MARY GREEN, Geology and soils, FERC

3 RALPH NELSON, Geology and soils, FERC

4 MARY McCANN, Endangered species and

5 macroinvertebrates, FERC

6 MICHAEL SEARS, Fisheries and aquatic resources,

7 FERC

8 BRETT BATTAGLIA, Terrestrial resources, FERC

9 ADAM BEECO, Recreation, land use and aesthetics,

10 FERC

11 ANGIE SCANGAS, Water resources, FERC

12 ROBERT QUIGGLE, Archaeological and cultural

13 resources, FERC.

14 With:

15 JOHN RAGONESE, FERC License Manager,

16 US Northeast Hydro Region,

17 TransCanada Accompanied by EDWIN NASON and EARL BRISSETTE,

18 TransCanada

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## 1 P R O C E E D I N G S

2 MR. HOGAN: I'm seeing a lot of familiar faces;  
3 so good morning, everybody. Thanks for sticking us through  
4 the week. I know it's been a pretty tedious schedule for  
5 all of the independents, and particularly my team; and  
6 really appreciate your participation. We really feel that  
7 it's valuable, and important for the development of our NEPA  
8 analysis.

9 My name is Ken Hogan, I'm with the Federal Energy  
10 Regulatory Commission. We're going to go around the room.  
11 I'm just going to have you guys shout out. I'll introduce  
12 my team, starting with Adam.

13 MR. BEECO: My name is Adam Beeco, I am working  
14 with recreation, land use, and aesthetics.

15 MS. GREEN: Mary Green, working with geology and  
16 soils.

17 MR. NELSON: Ralph Nelson with geology and soils.

18 MS. SCANGAS: Angie Scangas, water resources.

19 MR. SEARS: Mike Sears, fisheries and aquatic  
20 resources.

21 MR. QUIGGLE: Rob Quiggle, archaeological and  
22 culture resources.

23 MR. BATTAGLIA: Brett Battaglia, terrestrial  
24 resources.

25 MS. McCANN: Mary McCann, endangered species.

1                   MR. HOGAN: So today's meeting is a unique  
2 meeting for FERC. We haven't done this too many times. I  
3 knew of one and learned of another one yesterday that I'm  
4 aware of; it's a cumulative effects discussion; I'm hoping  
5 to have more of a brainstorming type discussion that we can  
6 have a give-and-take on particular issues that folks feel  
7 are cumulatively affected by all of the five or any one of  
8 the five Connecticut River projects.

9                   I'm going to be asking for, if an issue is raised  
10 that's cumulative effective, we're going to ask for why you  
11 think it's a cumulative affected resources, and basically  
12 some justification. Also, geographic scope. So what area,  
13 how far downstream or upstream is appropriate for that  
14 resource area to be analyzed in FERC's environmental  
15 document.

16                   So what I want to go is go through, resource by  
17 resource basis. I'm not going to give the background that  
18 all of you or many of you have heard throughout the week on  
19 FERC and the licensing process, and that information. If  
20 you haven't heard that yet and you want to hear it, we will  
21 provide that tonight at our meeting on Turners Falls and  
22 Northfield Mountain. But I want to just jump right into  
23 what we feel are cumulatively affected resources in the  
24 Connecticut River as it relates to the hydroelectric  
25 projects.

1                   So with that, I'm going to start with geology and  
2 soils. Ralph?

3                   Geology and Soils or Erosion Concerns

4                   MR. NELSON: Just to go over again the initial  
5 listings. We identified for geology and soil resources an  
6 issue; the effect of projects' operation and maintenance on  
7 riverbank erosion.including potential effects on protected  
8 species, cultural resources, or the structural integrity of  
9 adjacent facilities.

10                  MS. McCANN: An example of the cumulative effect  
11 of soils and geology is the effect of erosion of fine grain  
12 soils containing silt and clays which increase turbidity,  
13 which will persist through and downstream of the project.

14                  MR. HOGAN: One thing I'd like to add, if you  
15 think we got it wrong, I'd also like to hear that. If it's  
16 not a cumulative effected resource, and we haven't  
17 identified it as such, let us know.

18                  So thoughts on geology and soils and cumulative  
19 effects?

20                  MR. SIMS: Norman Sims from the Appalachian  
21 Mountain Club. I think the erosion issue is a cumulative  
22 effect. I'm not sure what the effect is as you come  
23 downriver from soil, silt washing down; but from the meeting  
24 in West Lebanon on the Wilder Dam, I was surprised at the  
25 number of comments you received from the public concerning



1 erosion. I just wasn't expecting that because I think I am  
2 not familiar with that reach of the river.

3 But in all of these meetings that you've had so  
4 far, there's always been somebody talking about stream bank  
5 erosion; yesterday we heard that a lot.

6 My limited understanding of this is that there  
7 are roughly three suggested reasons for that: One is  
8 hydropower fluctuations, the second is weather events, and  
9 the third is wakes from power boats on the river.

10 The discussion seems to be about what is the real  
11 cause; is it all of these, is it one more than another, and  
12 is there anything that can be done in the relicensing  
13 process to affect that?

14 I think there should be a study done, river-wide,  
15 of those erosional impacts. And just to be fair about this,  
16 I would suggest that in that study you also include the  
17 effects of canoe wakes on the erosion.

18 AUDIENCE: Just to be fair.

19 (Laughter)

20 MR. HOGAN: Katie.

21 MS. KENNEDY: I'm Katie Kennedy, Nature  
22 Conservancy's Connecticut River program. Just to add  
23 (inaudible) include looking at land use patterns and its  
24 impact on waterways.

25 MR. HOGAN: Katie, do you have any specific --

1 well, I think we're going to get to land use.

2 MS. KENNEDY: Okay. I just wanted to make sure I  
3 was on that list.

4 MR. HOGAN: You're referring to land use causing  
5 erosion? Land use practices causing erosion?

6 MS. KENNEDY: Yes.

7 MR. HOGAN: Would you like to elaborate on that?

8 MS. KENNEDY: I'm not an erosion expert, so --  
9 land use can have some impacts (inaudible).

10 MR. HOGAN: So agricultural practices. Roads?

11 MS. KENNEDY: Any kind of land use. So,  
12 forestry, agricultural, development.

13 MR. HOGAN: Okay, thank you.

14 MS. McCANN: Katie, this is Mary McCann, are you  
15 talking about just the loss of riparian area in general?

16 MS. KENNEDY: Like I said, I am not an expert in  
17 this arena, but I think -- and I'm not sure about this --  
18 but I think it's (inaudible) has an impact.

19 MR. HOGAN: Thank you.

20 MR. RAGONESE: Ken, I'm not sure I quite  
21 understand what, the scope of what you're trying to capture  
22 here is, but in a cumulative effects view of erosion on the  
23 river, it would seem to me that you would want to make sure  
24 you also encompassed hydrology. Future hydrology may be  
25 adding to essential erosion in the river itself, and even

1 include un-dammed and tributary components of the watershed.  
2 I mean, look at the last major forms and the deposition load  
3 into the main stem, which does get either deposited or moved  
4 downstream; but its primary from tributaries, whether they  
5 be naturally flowing tributaries or Army Corps flood control  
6 structures that modify the sediment movement into the main  
7 stem.

8 I think it's a very, very big picture. It's the  
9 geographic scope, but it's sort of like what you need to  
10 contemplate in getting that, an analysis of the role  
11 operational modifications of the reservoir discharge plays  
12 within this very large sphere. I would add that, sort to  
13 add on to Katie's comment, it's the land use policies,  
14 agricultural practices, and essentially soils.

15 MR. HOGAN: Yesterday we heard a comment that was  
16 in reference to the bypass reach of Turners Falls about  
17 sediment and gravel recruitment in that reach. That's  
18 potentially a cumulatively effected issue for all the  
19 projects where the dams kind of block that gravel  
20 recruitment from downstream reaches.

21 Do folks feel that that is an issue or not an  
22 issue? I mean, we know we have lots of gravel recruitment  
23 from the banks and sloughing of the erosion that's currently  
24 occurring; and clearly the bypass reach is unique, is  
25 different than the rest of the riverine reaches. So I'm

1 just kind of wondering, is that an issue that's specific to  
2 the bypass reaches here at Turners Falls, or is that  
3 something that we should be looking at throughout the  
4 system?

5 Katie?

6 MS. KENNEDY: Katie Kennedy again.

7 I would suggest to look at it through the system.

8 MR. HOGAN: And give me some support for it.

9 MS. KENNEDY: Okay --

10 MR. HOGAN: Because I can argue both sides. I'm  
11 raising it, and I want to hear the --

12 MS. KENNEDY: We would be interested in  
13 understanding how did the dam impact the distribution of  
14 sediment throughout the system -- below each of the  
15 facilities.

16 MR. PUGH: Don Pugh. Another component of that  
17 cumulative analysis would be looking at reservoir capacity.

18 MR. HOGAN: Can you --

19 MR. PUGH: In terms of how filled they are with  
20 sediment, what the life span is of that particular reservoir  
21 based upon sediment accumulation. And then if those  
22 situations would be coming such that it's problematic, that  
23 the reservoir is filling too much, how would that be  
24 alleviated?

25 MR. HOGAN: Okay, and that's a cumulative effect

1           why? As opposed to a project-specific effect.

2                       MR. PUGH: Because at some point it's going to  
3 have to be released.

4                       MR. HOGAN: Necessarily?

5                       MR. PUGH: Well, I don't know necessarily, but I  
6 know there's other rivers and other dams that have  
7 significant sediment buildup problems, and they have a  
8 life-span of that reservoir before it fills up such that  
9 can't be used for, or its capacity to hold water for hydro  
10 generation is so greatly reduced.

11                      And you have the other issue that's a cumulative  
12 issue, is high floods, high flow events that wash the fines  
13 and none of other sediments out of each reservoir and move  
14 it downriver.

15                      MR. HOGAN: Yes, we've identified that particular  
16 issue; but as far as -- and I'm playing devil's advocate  
17 here, so bear with me -- as far as a cumulative effect, as  
18 far as reservoir loading with sediment, or deposition, if  
19 say there was a need to either sluice the sediment or dredge  
20 it, that would be another public process here; unless we  
21 found that it was necessary in the licensing proceeding.

22                      Are any of the reservoirs at that point where  
23 they've lost capacity and efficiency for generation because  
24 of sediment loading?

25                      AUDIENCE: The pump station.

1                   MR. HOGAN: Well, the pump station, but that's  
2                   been taken care of.

3                   MR. SIMS: I don't know the answer to your  
4                   question, but in terms of what Don was talking about -- Norm  
5                   Sims from the AMC again -- in terms of what Don was talking  
6                   about, it seems that that's a classic problem with dams,  
7                   that reservoirs tend to fill up. And any study of this  
8                   should probably look at what can be done in this particular  
9                   situation, river wide, to deal with that project.

10                  I know on the Colorado River in the Grand Canyon  
11                  a number of years ago, they were trying to restore the  
12                  beaches in the Pelican Grand Canyon that had been eroded,  
13                  that there had never been a depositional flow to replace  
14                  that sand and silt.

15                  So one year they released a huge flow; 100,000  
16                  cfs or 150,000, to try to see what would happen. And  
17                  they're no longer doing that. I don't know what the impact  
18                  with that flow was, but this is exactly what they were  
19                  trying to influence.

20                  So a study would probably see what could be done  
21                  and what won't work in places.

22                  MR. HOGAN: Andrea, right?

23                  MS. DONLON: Yes. Andrea Donlon, Connecticut  
24                  River Watershed Council. I would like to voice support for  
25                  the recommendations that Katie and Don and Norman have

1       stated, and since erosion is an issue at every facility, I  
2       think it would make sense to have one comprehensive study  
3       done that both companies would fund or whatever, that would  
4       be done by the same person or company, and would be done in  
5       a comprehensive way that really set all the factors in the  
6       same way. So rather than one company looking at one set of  
7       things, another company looking at another set of things,  
8       the study could be done in a uniform fashion.

9               MR. CAMPANY: Chris Campany with the Regional  
10       Commission and Connecticut River Joint Commissions.

11               Along with the hydrologic study, it does seem  
12       like it would be worth pulling together what's already been  
13       done on straight geomorphic assessments, fluvial erosion  
14       hazard assessments, and watershed plans that have been  
15       developed throughout the watershed to try to develop not  
16       only a good picture about what the current state of things  
17       are, but project out what might be. Because increasingly it  
18       seems that we're losing access to the flood plains in the  
19       tribs, and you would think that you're going to get greater  
20       pulses of sediment and water going forward. I don't think  
21       that post-Irene, that the situations have been improved;  
22       they may have been exacerbated.

23               MR. HOGAN: Can you elaborate what you mean by  
24       losing access to the --

25               MR. CAMPANY: Yes. Our channel is getting

1 narrower and deeper, and so we're losing the storage  
2 capacity in our flood plains. Also related to land use.  
3 And so it just seems like, if we could look at some of the  
4 work that's already been done, if we could get some idea  
5 about what the future hydrologic profile is going to be;  
6 also the sediment profiles, based on what's been going on in  
7 the tribs.

8 MR. HOGAN: Other cumulative effect -- Yes, sir.

9 MR. CASTRO-SANTOS: Ted Castro-Santos with the  
10 USGS. I don't think USGS sent a fluvial geomorphologist  
11 here. Is there one in the room? No? Okay. I'm not, I'm a  
12 biologist.

13 But a couple of things that I think are of  
14 concern are, forecast has been mentioned at least  
15 peripherally. There are questions of the habitat  
16 influences, and this will be a cumulative effect as well; in  
17 part because of the interruption of bed low transport, and  
18 if the fate of the sediments is to imbed in among the  
19 substrate, that's going to cause interstition; that's going  
20 to alter the habitat, prevent certain species from breeding,  
21 reproducing and so forth. I think that has relevance for  
22 both native and endangered and migratory species, so there's  
23 importance there.

24 But the overall habitat effects are not  
25 restricted to the question of restoring a graded gravel



1 stream to be the original condition of the river; but also  
2 there are the questions of, with the impoundments and  
3 sediment accumulation in those impoundments; and what is  
4 that -- how is that altering the habitat and species  
5 composition in the impoundments at each of these dams.

6 MR. HOGAN: Do you have a suggestion for the  
7 appropriate geographic scope of that cumulative effects  
8 analysis on substrate and habitat?

9 MR. CASTRO-SANTOS: I think it's the river bed,  
10 and I think it goes -- well, I don't mean it stops at  
11 Holyoke, actually. So it's a longitudinal process, right,  
12 so it is. It's moving down the river, so where are you  
13 going to put a stop and start? Restrict it to the main  
14 stem?

15 MR. HOGAN: Main stem to Long Island Sound?

16 MR. CASTRO-SANTOS: Again, I'm not a fluvial  
17 geomorphologist. That's a question that maybe needs to be  
18 addressed, is what is the geographic extent? I actually  
19 don't know the answer.

20 MR. HOGAN: That's why I'm here.

21 So yes, if we have thoughts on the appropriate  
22 geographic scope, and a justification for that, I'd like to  
23 hear that.

24 MR. CASTRO-SANTOS: I'd go to the head of tide, I  
25 guess that seems like a logical --

1 MR. HOGAN: Head of what?

2 MR. CASTRO-SANTOS: Head of tide, which is about  
3 Hartford.

4 MR. HOGAN: Okay. Thank you.

5 Other comments associated with erosion or geology  
6 and soils as far as cumulative effect?

7 MS. FRANCIS: Sharon Francis from Charlestown.  
8 Prior association with Connecticut River Joint Commissions.

9 In 1990, '91 as the Joint Commissions were  
10 forming under a direction of the legislatures of Vermont and  
11 New Hampshire, they did a survey of all riverfront  
12 landowners in both states adjacent to the river, seeking  
13 identification of issues of concern to those landowners.  
14 Riverbank erosion came out significantly the greatest  
15 concern, and that finding of the public's interest led the  
16 Joint Commissions to put a lot of effort into working to  
17 better understand erosion in those places where it might be  
18 mitigated and by which methods. Of course the causes, as  
19 has been said here in the room, are many; fluctuating water  
20 levels, wakes of speed boats, high water events, adjacent  
21 land use, clearing, loadable soils right down to the water's  
22 edge to get that extra yard for corn.

23 And it seemed much too difficult and contractual  
24 to tease out which erosion site might have been -- which  
25 practice -- there was one farmer who was sure a certain

1 power boater had caused the erosion of his riverbank --  
2 anecdotal at best. Nevertheless, there are many places, and  
3 this is a mitigation level, not necessarily a study level,  
4 but there are many places where addressing erosion from the  
5 riverbank by buffers and/or through specially engineered and  
6 designed and scientifically informed tree planting can  
7 stabilize those banks in a regime where there's fluctuating  
8 water level issues.

9           Maybe some evaluation would be in order of those  
10 erosion mitigation measures as they have been applied,  
11 because they're now -- several decades of experience.

12           MR. HOGAN: Yes, I think FirstLight has  
13 significant data on evaluation of their efforts to control  
14 erosion.

15           Correct, John?

16           MR. RAGONESE: Yes.

17           MR. HOGAN: So yes, they're -- for decades now,  
18 as I understand it. That evaluation has been done and is  
19 ongoing.

20           Jim?

21           MR. McCLAMMER: Jim McClammer, Joint River  
22 Commission, also put out that message.

23           It seems in my mind clearly the flow of the  
24 water, the water regime basically effects erosion from the  
25 banks. And cumulatively, this erosion that's occurring at

1 various places along the banks, and bulls-eye.

2 It is reducing our historic archaeological  
3 resources, because the prehistoric occupation has always  
4 been along the river banks. And particularly every time you  
5 get involved in some kind of a bank stabilization project,  
6 wow, you know, Phase 1A. You know, there's a potential --  
7 of resources that are there. So cumulatively, basically,  
8 it's impacting our historical resources there.

9 And in another sense and also, I know a number of  
10 situations where indeed the banks are eroding and it's  
11 cutting into agricultural land; we're actually losing lands  
12 that have been farmed for a long time by erosion. So again,  
13 cumulatively we're losing the area of agricultural land  
14 because of this erosion. So I believe if we don't get it  
15 under control, we're losing not only our current use, but  
16 those storage uses.

17 MR. HOGAN: Thank you.

18 Other comments? Next, water resources.

19 Water Resources - Water Quantity and Quality

20 MS. SCANGAS: We have also identified water  
21 quantity and quality that may be cumulatively affected.  
22 John alluded to this a little bit, there's both unregulated  
23 flow and very regulated flow going on; this was -- looking  
24 at reservoir operations and storage, and dissolved oxygen  
25 specifically, and as far as the geographic scope of that,

1 we've heard a couple of things this week, so we're  
2 definitely hoping for your input on this.

3 MR. HOGAN: One of the comments, I think it might  
4 have been yesterday, was that project effects on dissolved  
5 oxygen, I believe Vermont Yankee was also mentioned, on  
6 dissolved oxygen down to Long Island Sound; and for me it's  
7 a little unclear why Long island Sound would be the  
8 appropriate geographic scope for DO. A couple of questions  
9 that I came up with were, "Well, do we know that we have, as  
10 we move downstream, a continuing depletion of dissolved  
11 oxygen all the way to Long Island Sound, or is there a spike  
12 back up to near-saturation at some point in the river that  
13 that would be the appropriate end point for the geographic  
14 scope?"

15 So we're trying to get some feedback on that, and  
16 of course any other water quality or water quantity-type  
17 concerns folks may have.

18 Melissa.

19 MS. GRABER: Melissa Graber from Fish & Wildlife  
20 Service. The cumulative impacts of each project's  
21 impoundment, cumulatively they impound over 100 miles of  
22 river. The atmosphere of boating and thermal loading that  
23 occurs in each of those impoundments, along with the other  
24 thermal inputs that occur into the main stem, including  
25 Vermont Yankee, there's a pool downstream, there's Mount

1 Tom, there's --

2 MR. HOGAN: Hold up, slow down.

3 (Laughter)

4 MS. GRABER: Well, there's a lot of thermal  
5 inputs to the system, right? Including the project  
6 impoundments. And each of those not only is warming the  
7 respective waters of the impoundment, but they also transfer  
8 some portion of that heated water downstream to the riverine  
9 portions of the river, also.

10 So to the extent that cumulatively there's an  
11 overall warming of the river, and in the context of  
12 predicted climate change, I think that should be evaluated.

13 MR. HOGAN: To the Sound?

14 MS. GRABER: I - (pause) - yes.

15 (Laughter)

16 MR. HOGAN: You mentioned there's lots or  
17 multiple thermal loading points along the system. Are you  
18 aware of any existing data that, whether it be from speedy  
19 spur -- Speedy spur?

20 AUDIENCE: (inaudible)

21 MR. HOGAN: Thank you. -- that may indicate what  
22 that temperature monitoring throughout the system may make -  
23 - temperature monitoring throughout the system that could be  
24 used in that type of analysis?

25 MS. GRABER: Not throughout the system, but

1 Vermont Yankee has collected temperature data as part of  
2 their most recent 315A variance request back in 2003 or -5;  
3 they did a hydraulic modeling of their thermal load to the  
4 river. And Mount Tom probably had to do something, and  
5 their lapse -- FirstLight would know because I believe it's  
6 their project, so --

7 AUDIENCE: (Inaudible)

8 MS. GRABER: -- but they have been doing ongoing  
9 studies, so I don't know how -- John, do you know anything  
10 about the last --

11 JOHN: No, I don't know -- impoundments on that  
12 river.

13 MS. GRABER: There may or may not be for Mt. Tom.  
14 I know there's recent entrainment information for that  
15 project, but I don't know about thermal loading.

16 MR. HOGAN: Curiosity, what is Mt. Tom?

17 AUDIENCE: It's a coal plant.

18 MR. HOGAN: Coal-fired plant?

19 MS. GRABER: It's relatively small; relative to -  
20 -

21 MR. HOGAN: And where is it?

22 MS. GRABER: It's in Holyoke.

23 MR. HOGAN: Holyoke?

24 MS. GRABER: Yes, on the Holyoke pool. There's  
25 probably another -- I think there's one down in Springfield,

1 too. West Springfield Station is another generator.

2 MR. HOGAN: Carl.

3 MR. MEYER: Just to add to what Melissa is saying  
4 -- Carl Meyer -- and Ted from USGS. but I believe there's  
5 been a continuous temperature gauge at Conti Lab since 1992.  
6 So that covers what's going through the Turners Falls canal;  
7 it's not going through the bypass reach. Is that making a  
8 little thermal sense of what's happening down there.

9 MR. HOGAN: Thank you, Carl.

10 MS. KENNEDY: Katie Kennedy, Nature Conservancy.

11 I would like to add to Melissa's comments; not  
12 only temperature, but we could consider the cumulative  
13 impacts of (inaudible) balances and how this might change  
14 and alter the river.

15 I'm not exactly sure what the sum of that would  
16 be, but I think either is the Hartford or the (inaudible).

17 And then we are also interested in how the  
18 impacts of climate-altered hydrology on water quantity and  
19 perhaps any other excess resources that are tied to the  
20 flow. So the Nature Conservancy is working on a project,  
21 MAPS USGS, and the (inaudible) U-Mass, with (inaudible)  
22 hydraulic model. So that potentially could be used as input  
23 to some of the operational models that the applicants will  
24 be using.

25 MR. CAMPANY: Chris Campany. This may not be the



1 best place for this, but the idea of studying best  
2 management practices in terms of operation and management to  
3 address cumulative effects; in other words, like what kind  
4 of operations or communications, coordination is there  
5 currently between TransCanada and FirstLight. There are  
6 other examples out there where, of best practices where  
7 these cumulative effects that are eventually identified can  
8 be better mitigated through better communications.

9 MR. HOGAN: Now you're talking mitigation.

10 MR. CAMPANY: Is that a bad thing?

11 MR. HOGAN: No, no. But once we identify the  
12 effects, like you said, and that's what we're trying to do;  
13 what are the solutions and opportunities?

14 MR. CAMPANY: Right.

15 MR. HOGAN: You're right.

16 MR. CAMPANY: So I'm not an expert on this, and I  
17 didn't stay at a Holiday Inn Express last night --

18 (Laughter)

19 But it seems like ultimately it's going to be good to look  
20 at maybe what's been done not only in the U.S. but also  
21 elsewhere in the world -- so again, maybe it's premature,  
22 but it seems like that, the cumulative effects of  
23 operational decisions and processes, would it be worthwhile  
24 to take a look at.

25 MR. HOGAN: Okay.

1                   MR. CAMPANY: It seems like it would be of  
2 interest to the companies.

3                   MR. HOGAN: I haven't heard anybody mention water  
4 quantity.

5                   MR. RAGONESE: I'll mention water quantity.

6                   MR. HOGAN: Okay, John.

7                   MR. RAGONESE: I mean, it's illustrated in a  
8 number of different comments in a way, and to some extent  
9 probably throughout many of the resources, but it's --  
10 rather than the geographic scope, which oftentimes is what  
11 to me cumulative impacts really kind of tries to target,  
12 confine itself to; add in and some consideration of area, I  
13 do think there's a real need to reconstitute or evaluate the  
14 context of project operations, quantity or flow within the  
15 context of natural flows.

16                   I mean, we heard examples of releases below the  
17 canyon dams in Arizona. Well, those are large impoundments;  
18 these are riverine projects. They do impound water, but on  
19 the other hand the control capability of these dams is, in  
20 some cases less than 10 percent of what are naturally  
21 occurring flows that are on a fairly frequent basis. I  
22 mean, it's nothing to see 70,000, 80,000 cfs flows every  
23 year through some of these projects, and yet our capacities  
24 are in the 8,000 or 9,000 cfs.

25                   So it's this idea in my mind, we want to remind

1       ourselves of the context of the hydrology that occurs in  
2       this basin, whether it's in the tribs or even how it effects  
3       into the main stem that we would want to continually try to  
4       understand. Are there larger cumulative effects associated  
5       with the natural hydrograph versus what the operations do?

6               MR. HOGAN: I appreciate that and recognize that.  
7       We also know that the projects basically operate in a  
8       peaking mode. I believe that that's initiated at Fifteen  
9       Mile Falls?

10              MR. RAGONESE: There's peaking and there's  
11       storage in the headwaters, for that matter.

12              MR. HOGAN: But as far as the flows that are  
13       within the Connecticut River that may be cumulatively --

14              MR. RAGONESE: Sorry?

15              MR. HOGAN: That may be cumulatively affected by  
16       the projects, they initiate at Fifteen Mile Falls?

17              MR. RAGONESE: There are peaking operations at  
18       Fifteen Mile Falls, yes.

19              MR. HOGAN: Okay. At what point downstream if at  
20       any do we know that those peaking flows are attenuated?

21              MR. RAGONESE: Well, I think that that's a fair  
22       statement to make. On the other hand, we heard last night,  
23       for example, folks that are affected by the Bellows Falls  
24       reach that were completely isolated from any upstream  
25       operations; and they were affected by natural flows from

1 tributaries because of the spatial nature of storms; this is  
2 not a longitudinally-spread system, this is a latitude-  
3 spread system; and snow melts over the course of two months  
4 in the Connecticut River Basin. So you have impacts that  
5 might be associated or issues that might be associated with  
6 flooding downstream that could be exacerbated by operations  
7 upstream or could be prevented.

8 But mostly, what I'm trying to get at is that  
9 there's a very, very dynamic natural hydrology that the  
10 projects reside in, and that needs to be constantly in the  
11 equation of cumulative effects because of this long river  
12 system that is affected by very dynamic storms and precip  
13 events on the water quantity. The drainage area is very  
14 large, incrementally, at each one of these projects.

15 MR. HOGAN: Yes, I think we would be looking at,  
16 in our analysis, the natural hydrograph and evaluate project  
17 effects on that natural hydrograph.

18 MR. SCUDDER: Hervey Scudder. You just mentioned  
19 communication, and I'm curious about the relationship  
20 between the dam operators and the Corps of Engineers in  
21 flood control.

22 MR. HOGAN: Would John or John like to address  
23 that?

24 The question was, what kind of relationship do  
25 you have with the Army Corps of Engineers in the operation

1 of your facilities and theirs regarding flood control?

2 MR. WARNER: At our project we get very little  
3 information from the Corps when they release water. If  
4 ever.

5 MR. RAGONESE: Actually, I'm going to let Edwin  
6 follow up, but we have our procedures to try to coordinate;  
7 these are primarily under high flow events; they're not  
8 under typical normal operations. The only area that might  
9 be, fall more in that line is we try to -- as we try to  
10 maybe have operations that are reducing downstream flooding  
11 where we're trying to attenuate the lower end of the high  
12 water cycle, we're not -- we don't want to necessarily see  
13 them dump on top of us. One might say 'Well, that's self-  
14 serving because you don't want to spill water that you could  
15 be generating with.' It's less about that, honestly, than  
16 exacerbating flooding downstream.

17 Now they're in contact with the river control  
18 center, so they're aware of what's going on in the river  
19 just as much as we are. So there's a coordination that goes  
20 on. But you do control centers and then coordinators do  
21 communicate, but these are generally in high flow events.

22 MR. NASON: Yes, but I also want to add, it goes  
23 both ways: We call them and also they call us; it's not one  
24 way. We don't necessarily initiate it every time; sometimes  
25 they do, first. Once the event gets going, though, it's

1 usually every three - six hours that we're in contact with  
2 them.

3 MR. HOGAN: Hervie, does that answer your  
4 question?

5 MR. SCUDDER: Thank you, yes.  
6 Jim?

7 MR. McCLAMMER: Jim McClammer again. I remember  
8 the meeting up in the Wilder Dam, the planning and zoning  
9 administrator from the Town of Lebanon talked about even the  
10 operation of their dams on the Mascoma River. And though  
11 they're privately owned he thought that they should be  
12 coordinated with the operation of the Corps dams as well as  
13 the dams on the main stem for flood control. This is of  
14 concern to them. So to get that system that is impacted to  
15 not only maintain minimum flows in the river, but also given  
16 that with flooding limits; and how the coordination of all  
17 these dams that are on the tribs and also the main stem  
18 should be undertaken.

19 MR. HOGAN: Other water resource related issues?

20 SPEAKER: One more, Michael concerning stream  
21 bank erosion.

22 No one has mentioned the effect of sediment on  
23 water quality, cumulative effect.

24 MS. McCANN: This is Mary McCann. I just want to  
25 clarify, do you mean like sediment load?

1 SPEAKER: Yes. (inaudible)

2 Sediment suspended in the water.

3 MR. HOGAN: So turbidity and -- Okay.

4 Jim?

5 MR. McCLAMMER: One of the other things we heard  
6 about were the discharges from the, you know the Public  
7 Works Director at Hanover, of discharges from the wastewater  
8 treatment facilities of nitrogen and other toxics. The  
9 impact that they had on the river during low flow or high  
10 flow, and what happens when there's a number of wastewater  
11 treatment plants that are, you know, discharges that are  
12 allowable under NPDES, but presuming a certain flow level  
13 and in the future, about 50 years of fluctuating water  
14 levels and precipitation events, what do we do during  
15 periods of low flow? How do we let those wastewater  
16 treatment facilities know when they can discharge or not so  
17 they can stay in compliance with the NPDES requirement.  
18 Point source discharges.

19 MR. HOGAN: John?

20 MR. WARNER: John Warner, Fish & Wildlife  
21 Service.

22 I just wanted to make suer it was clear from  
23 discussions that the issue of flow regulation and water  
24 quantity really goes all the way through, obviously from the  
25 inflows upstream all the way down through at least below

1 Holyoke.

2 Without the models run it's really unclear what  
3 effects are from Falls to Wilder and how much Wilder affects  
4 Bellows; we don't know those questions. But the model has  
5 to be run to sort of explain and show what those  
6 implications are, from one party to the next, and that what  
7 we do know is that FirstLight's operation at Turners affects  
8 Holyoke's operation; so that in turn conveys down past the  
9 Holyoke discharge, plant. And so, from a geographic scope I  
10 think, the model needs to be run through that whole area,  
11 where there's impacts. If you want to know, you won't know  
12 until you see the models run.

13 MR. HOGAN: That's a good point. So you'd be  
14 looking for some type of analysis as far as the geographic  
15 scope, at least through Holyoke?

16 MR. WARNER: Right.

17 MR. HOGAN: On full fluctuations.

18 AUDIENCE: And the safety would be upstream's  
19 burden as well? The storage reservoirs?

20 MR. WARNER: If they could, the upstream  
21 operation peaking and storage and airflow models.

22 MR. HOGAN: So just for clarification, John, the  
23 discharges from the storage reservoir or including the  
24 storage as well. Meaning, they're impounding and holding  
25 seasonally a lot of water within the reservoirs.



1                   MR. WARNER: I'm not sure the effects of each of  
2 these projects are seasonal, really, from the standpoint of  
3 fish & wildlife resources, but then those are control  
4 issues. I'm not too sure about that. But certainly from a  
5 fish standpoint, we're downstream looking at daily  
6 operations, feeding operations. So to the effect that  
7 peaking is really a factor and the system is initiated with  
8 the way these (inaudible) run.

9                   The storage part is in spring when there is very  
10 high capacity; I'm not sure there's any effect on downstream  
11 operations.

12                  MR. HOGAN: Thank you.

13                  Wow. Melissa?

14                  MS. GRABER: I'm not sure it was clear in what I  
15 said earlier, but the Fish & Wildlife Service is being  
16 directed to view everything through the last climate change.  
17 And so in the cumulative effect analysis for temperature, it  
18 really needs to include the projected and predicted  
19 increases in water temperature in addition to the flow that  
20 occurs from all these different sources to really get an  
21 idea what in the next 30, 50 years, any anticipated license  
22 term, is going to be involved in that river warming, and  
23 what that means to the biota, to the Connecticut River.

24                  MR. HOGAN: It's clear now.

25                  MR. HOGAN: Andrea?

1 MS. DONLON: Andrea Donlon, Connecticut River  
2 Watershed Council.

3 In 2000, EPA did a comprehensive study of  
4 contaminants in fish tissue in different river segments on  
5 the Connecticut River. They found that there is mercury in  
6 the fish, PBT, PCBs; and they did an analysis about if  
7 somebody was going-- a risk assessment, essentially, that he  
8 was going to eat fish as part of their diet, would they have  
9 health effects. And in some segments it would be a problem.

10 I'm wondering if a river system, even if it  
11 wasn't dammed, would still have these contaminants sticking  
12 around for 30 years, or are the dams exacerbating the  
13 problem and therefore just prolonging the period of time  
14 that contaminants could be an issue in people who do sport  
15 fishing, and then consume these fish?

16 MR. HOGAN: Last night at our public meeting for  
17 Vernon, methyl mercury came up as a question. The answer we  
18 got that sediment testing had been done at Vernon and no  
19 elevated levels of mercury had been identified.

20 SPEAKER: It was clean.

21 MR. HOGAN: Any other facilities had any similar  
22 type of sediment testing?

23 AUDIENCE: We did sediment testing after the 2010

24 --

25 we had and we came up non-detectable on everything with the

1       exception of chromium in the Connecticut and the sediment  
2       samples from (inaudible), and nickel. Nickel ran around 20,  
3       18, 17. I think the average was 18 parts per million. The  
4       state's threshold for, below which is 20 for background. So  
5       nickel is right around background in the Connecticut.

6               MR. HOGAN: So no elevated levels, I guess.

7               AUDIENCE: No.

8               MS. DONLON: I'm not concerned about contaminated  
9       sediment; it's the fish tissues.

10              MR. HOGAN: Yes, if it's not in the sediment,  
11       you're not going to be --

12              MS. DONLON: It's in the sediment, but a teeny  
13       amount. It would be self-considered, but it might include  
14       bioconcentrates up through (inaudible) And at least in  
15       reservoirs, fluctuating reservoirs have been shown to have  
16       higher fish tissue concentrations, having to do with  
17       methylation of mercury and --

18              MR. HOGAN: I think what I was getting at though,  
19       is I'm trying to tie this to a project effect, and if we  
20       have sample data that demonstrates that there is not  
21       elevated levels within the reservoir being caused by the  
22       projects, then -- I understand your issue as far as  
23       bioaccumulation, but we still have to tie it to a project  
24       effect. So if we can identify that there were elevated  
25       levels above background within the reservoir sediments, then

1 I can see going to a next step; but I don't know that --  
2 with the deal I have now, that that next step is  
3 appropriate.

4 MS. DONLON: Will somebody can take the data and  
5 look at the different reaches to see if there is a  
6 contaminant project effect? And if there's also a similar  
7 river that isn't as --

8 MR. HOGAN: What was the title of the study, do  
9 you know?

10 You said there was a study that had been done on  
11 the Connecticut. Do you know the title of that study?

12 MS. DONLON: Yes. If you Google EPA Connecticut  
13 River, Fish Contaminant study. I was dated 2000 because  
14 that's when they did the sampling, but the study came out in  
15 2006, I think.

16 MR. HOGAN: Okay, thank you.

17 MS. BOOK: Eva Book from U-Mass. So I haven't  
18 done the studies, but a colleague of mine has been studying  
19 contaminants in the sediments in the river, and he's mainly  
20 focused on the estuary, but I think has looked up as far as  
21 the Oxbow Lakes.

22 So I don't --

23 MR. HOGAN: Can I just get you to clarify where  
24 the Oxbow Lakes are?

25 MS. BOOK: Near North Hampton.

1           So, and again, I'm not the expert; he is. So I  
2           only have just sort of a gist from what he's done. But he's  
3           found higher levels of mercury contamination in parts of --  
4           it's mainly these side channels and side reaches where  
5           things settle in high flow events, and then are not  
6           remobilized until future high flow events; and he's found  
7           higher contamination than exists elsewhere in the  
8           literature.

9           He hasn't gone on now to look at the impacts of  
10          flow coming down the river; he has found that in estuary  
11          there's a big impact of the tidal fluctuations, the ability  
12          to remobilize, to push that into those side channels; but I  
13          think they're talking about beginning to look at what are  
14          the impacts of the reduction of high flow events and  
15          possibly maintaining those high contaminants in those side  
16          areas.

17          So I guess maybe from the study two things; one -  
18          - maybe I should ask him to sort of look at your scoping  
19          document and just write some suggestions of things that  
20          might be looked at potentially, or talk to Andrea about  
21          that.

22          But then the other thing might be that rather  
23          than just looking at the main channel, it might be really  
24          important to look into these study areas that also might be  
25          impacted by a change in flow.

1 MR. HOGAN: Thank you.

2 MR. CASTRO-SANTOS: Question. Ted Castro-Santos,  
3 USGS.

4 The question is basically, you're talking about  
5 the water quality here. There's this nexus with the  
6 fisheries resources, and I just wanted to say, but I'll wait  
7 if there's a more appropriate time.

8 MR. HOGAN: Well, we're kind of working into  
9 fishery resources, so I think it's fine.

10 MR. CASTRO-SANTOS: It's hard to know where these  
11 things separate out. Carl mentioned earlier that there's  
12 long term dataset temperature at Conti; that's true.  
13 There's actually a few of them that have been separately  
14 maintained. Also there was a model, an energetics model  
15 published by myself and Ben Letcher in 2010 on the effects  
16 of -- well, migratory energetics of shad. It was about  
17 migratory energetics of shad, and was looking at basically  
18 the entire migration, the behavior, and the delays that they  
19 incur as they try to pass the various dams, as well as the  
20 effects of temperature and seasonality on that.

21 So there's a nexus there with the temperature in  
22 particular question, and those cumulative effects. That  
23 would fit very easily into this model. So there's an  
24 existing structure in place that can be used to look at the  
25 effects of temperature on energetics.

1                   There are other things that are missing, though,  
2                   that we haven't looked at which are things like disease,  
3                   susceptibility, maturation rates, and behavior. And that  
4                   relates -- I'm talking about American shad here, but it  
5                   probably applies to other migratory species as well. That  
6                   relates to the temperature question and it also gets to some  
7                   of the hydro peaking issues as well; is how do these things  
8                   influence behavior maturation rates; spawning success,  
9                   migratory range, migratory success of these anadromus  
10                  species.

11                  So there's this whole big thing -- this connects  
12                  to, on the fishery side. Now you've got it.

13                  MR. HOGAN: It's certainly going to be a  
14                  complicated issue.

15                  MR. CASTRO-SANTOS: And connecting it to  
16                  individual projects or cumulative effects -- there's clearly  
17                  a cumulative relationship here, and I think that it just  
18                  makes sense -- my pitch is that if these studies are being  
19                  done, they should include and consider the fisheries  
20                  resources and what we've got already; and maybe what needs  
21                  to be done next to improve some of that information.  
22                  Because there are some obvious gaps in what we have in terms  
23                  of our understanding of these impacts on our migratory  
24                  species.

25                  MR. HOGAN: So is USGS preparing a study request

1 to fill those information gaps?

2 MR. CASTRO-SANTOS: Some of this is touched on in  
3 some of the study -- the agencies; we've been working with  
4 the agencies on developing study requests.

5 MR. HOGAN: Great. Thank you.

6 Yes, sir.

7 SPEAKER: In the nexus here between the two,  
8 aquatic and water resources, one thing that Ted didn't  
9 mention was -- well, he did mention reproductive success,  
10 but juveniles are impacted by sediment, their inability to  
11 seek --

12 MR. HOGAN: Juvenile shad?

13 SPEAKER: Juvenile shad.

14 AUDIENCE: And other species.

15 SPEAKER: Thank you. And other species.

16 And that certainly seems to fit into this  
17 cumulative effect of turbidity, water quality, erosion,  
18 should certainly be included in the analysis. It's  
19 definitely going to have a population effect on shad.

20 AUDIENCE: Does that include sturgeon?

21 SPEAKER: No, I don't think we know so much, but  
22 potentially, yes; except for slightly different type of  
23 feeding mechanism.

24 AUDIENCE: But there was work done with shad back  
25 in the Sixties about this question very specifically.



1                   SPEAKER: Yes.

2                   AUDIENCE: And they did find very powerful  
3 influences of turbidity during the early larval stages of  
4 juvenile shad, in particular, where it could actually drive  
5 the entire population during those first few days of life.

6                   MR. HOGAN: Juvenile shad, or sturgeon?

7                   SPEAKER: Shad, not sturgeon. For example, there  
8 was an intensive effort on shad. I don't think we've seen  
9 that matched with any other species in the river, to my  
10 knowledge.

11                  AUDIENCE: What was that study?

12                  SPEAKER: Marcy and also Krankel and Savoy (ph).

13                  MR. HOGAN: Since we're into aquatic resources,  
14 I'm going to go through -- we kind of identified  
15 preliminarily and we'll jump right into the aquatic  
16 resources.

17                               Fishery or Aquatic Resources

18                  MR. SEARS: So there's a section in error in  
19 here; it's going to be corrected in the SD2, but all of the  
20 project effects we identified are also going to be  
21 considered as for cumulative effect as well.

22                               These include the effects of project operation  
23 and maintenance, including fluctuations in water levels and  
24 downstream releases on aquatic habitat and resources in the  
25 project's vicinity. For example, resident and migratory

1 fish populations, fish spawning and feeding, and  
2 overwintering habitats as well as mussels and  
3 macroinvertebrate populations and habitat.

4 The other ones are the effects of project  
5 facilities and operations, including reservoir fluctuations  
6 and generation releases on upstream and downstream fish  
7 migration through and within project fishways, reservoirs  
8 and the downstream riverine corridor.

9 The last one is the effects of entrainment on  
10 fish populations at each project. So in reference to shad,  
11 I think the geographic scope would from the head of tide to  
12 Bellows Falls, the natural extent. And then for salmon, I'm  
13 not sure what Fish & Wildlife is going to do with their  
14 legacy population; that would include the extent of their  
15 upstream stocking, so the downstream migrants would be  
16 covered. So each project, that would include the cumulative  
17 effects downstream to past Holyoke; as an example of fish  
18 passage migration.

19 MR. HOGAN: Thoughts?

20 John.

21 MR. WARNER: Obviously, you're using those as  
22 examples, right?

23 MR. SEARS: Yes.

24 MR. WARNER: So it wouldn't put (inaudible)  
25 habitat and entrainment issues.

1 MR. RAGONESE: John, it's hard to hear you; I'm  
2 sorry.

3 MR. WARNER: What I said is, he was using shad as  
4 an example, geographically. You know, the operations on  
5 habitat and entrainment and passage would -- in all stations  
6 and would apply to geographic range of those species, so  
7 (inaudible) reservoirs, migratory shad, the shad goes up to  
8 Bellows Falls, but the lamprey and American eel, you know,  
9 it would encompass (inaudible)

10 MR. HOGAN: Okay, so head of tide to Fifteen Mile  
11 Falls, basically? For other than shad, the other migratory  
12 species.

13 Other thoughts about fishery or aquatic resources  
14 that could be cumulatively effected?

15 No? I thought this was going to be the big one.

16 MR. RAGONESE: I'm just curious; has there ever  
17 been like, in the broader context of examination like in an  
18 EIS of this scale -- considering either mandricals (ph) for  
19 various species, particularly anadromous fish, including the  
20 effects of -- you know, their ocean or salt water  
21 environments and issues and population concerns and disease,  
22 and fishing, or whatever it might be. Has there ever been a  
23 broader analysis of the goals and the impact of the  
24 operations within a larger picture of management challenges?

25 MR. HOGAN: We've been asked to, in the past,

1 complete life-cycle analysis and cumulative effects of  
2 projects within a complete life-cycle analysis for Pacific  
3 Salmon. We declined.

4 But we did carry that, or planned to carry that  
5 analysis to the tide, to the estuarian environment.

6 Does that answer your question, John?

7 MR. RAGONESE: It clarifies it, yes.

8 SPEAKER: I had a question, too, about specific  
9 study requests. I mentioned this yesterday about the  
10 telemetry study; I know that that will be cumulative, it  
11 will pass through multiple projects; and more specifically  
12 to you is: How should this type of telemetry study request  
13 be addressed? Project by project, company by company, or a  
14 cumulative, single request?

15 MR. HOGAN: If it's the same -- that's your  
16 question; how do I craft my study request if it's going to  
17 apply for all of the projects and each of the licensees?

18 SPEAKER: Yes.

19 MR. HOGAN: That's basically it.

20 I don't care if you do five individual study  
21 requests or one, as long as you put the subdockets and send  
22 it to each of the -- as long as you put the dockets on -- if  
23 you do one, I want you to identify each of the projects that  
24 it applies to, and you can send it to each of the licensees.  
25 If you do five you can send it to, send the appropriate ones

1 to the licensees, and it will be one docket. So whatever is  
2 easier for you; the point is we want to understand what  
3 you're asking for and get the information into the record,  
4 the format -- as long as you address study criteria; but as  
5 far as the -- I'm okay with lumping.

6 On that note, though, if there's a component that  
7 doesn't apply to an individual project, I'd appreciate  
8 teasing that out, too. I'm just going to use this as an  
9 example; if you don't think you need to put telemetry  
10 monitors up in Northfield Mountain, you know, that's -- I'm  
11 talking about the upper reservoir, you know; make sure that  
12 that's clear. You know, if it's just the four projects, not  
13 Northfield, or if it is all five of them, that's fine. Tie  
14 it to the projects that you're interested in, the study to  
15 go to.

16 SPEAKER: So if the lumping part, I guess in the  
17 methodology section, we describe as just the basic locations  
18 where you would anticipate telemetry detection, and one of  
19 those would be in the upper reservoir at Northfield.

20 MR. HOGAN: If that's what you want.

21 SPEAKER: Yes. Well, it's logical.

22 MR. HOGAN: Yes. If you choose to get into that  
23 level of detail, yes. What I was getting more at is if  
24 there's a component of the study or the study doesn't apply  
25 to an individual project, whatever -- I know the telemetry

1       you are looking at, then just identify the projects it does  
2       apply to.

3               SPEAKER:  And that same sort of thing would  
4       potentially be applicable to silver heel studies?

5               MR. HOGAN:  Whatever studies you want, yes.

6               If you feel that the study you're requesting is  
7       appropriate for every project, I'm fine with lumping.

8               Other aquatic resources that may be cumulatively  
9       affected?  We've heard quite a bit about migratory fish  
10       species; we've identified native fish -- or populations  
11       affected by entrainment through the system.  Katie?

12              MS. KENNEDY:  I think that John said this, but --  
13       this is Katie Kennedy, Nature Conservancy -- but we'd be  
14       interested in looking at all resident populations  
15       cumulatively, because they don't exist.  Populations that  
16       exist independently of each other, so there's (inaudible) at  
17       the very least.  So at the very least looking at all  
18       resident species.  And then also macroinvertebrates,  
19       mussels.

20              MS. McCANN:  So Katie, I'd like to ask for  
21       clarification.  Mary McCann.

22              So are you talking about, are you looking for a  
23       comparison of resident populations between projects or  
24       reaches?  Or I'm not sure I understand what you're asking.

25              MS. KENNEDY:  So I think the point is that I'm

1 looking at cumulative impacts of all the facilities on a  
2 whole population, an isolated population of whatever species  
3 to look at (inaudible)

4 Doesn't that make sense?

5 MR. HOGAN: No.

6 MS. McCANN: I was thinking of hiding.  
7 They get complicated with the -- you would have natural  
8 upstream-downstream changes in communities, not an open  
9 rivers. So I'm trying to go through in my head what you  
10 were looking at.

11 MS. KENNEDY: So look at the whole population; so  
12 in other words, get an estimate of the whole population.

13 MR. HOGAN: I think what Mary is saying is that  
14 in an uncontrolled system, completely, you're going to have  
15 population dynamics as you move through that system. And  
16 her question is, you know, given that even in a natural  
17 system, how do you want us to be looking at -- you know, as  
18 we move from upstream to downstream, that dynamic is going  
19 to change naturally. So how do we -- how are we looking at,  
20 how are we doing a comparison when there's nothing to  
21 compare?

22 Is that -- Mary?

23 MS. McCANN: Yes. So I would --

24 MS. KENNEDY: Just for example, let's say we're  
25 looking at a bass population. So we want to get an estimate

1 of the whole population and then look at specific potential  
2 impacts; see if we can look at, for example -- there may be  
3 -- and I'm just (inaudible).

4 So you can look at extinction rates, how they  
5 vary from one project to the other. This is the whole  
6 population, an estimate of whole population, and this is how  
7 it differs from project to project.

8 MR. HOGAN: Well, I think we would do that  
9 analysis, anyway.

10 MS. KENNEDY: Yes.

11 MR. HOGAN: Okay.

12 MS. KENNEDY: It's looking at the whole  
13 population rather than individual populations to get an  
14 idea.

15 MR. HOGAN: Yes, but I guess I'm -- we're going  
16 to try and wrap our heads around that.

17 MS. KENNEDY: Okay.

18 MR. HOGAN: Andrea.

19 MS. DONLON: Andrea Donlon, Connecticut River  
20 Watershed Council.

21 I once heard somebody say at a conference that  
22 the migratory fish, and they were talking about the shad or  
23 another species, I don't remember; they just really don't  
24 get beyond the second dam, like there isn't a river in the  
25 world or something that has a successful migratory fish run



1 that's more than two dams.

2 I don't know if that's true or not, or whether it  
3 is specific to a species, but somebody cited a study  
4 yesterday that looked at three river systems, and that fish  
5 passage just doesn't work, and I know that a lot of the  
6 study requests will be related to what's -- how can we make  
7 an individual site pass fish better? And I'm just kind of  
8 curious if there's -- I don't know if the agency will do  
9 this analysis or whether FERC does, or the companies do it,  
10 but like what's the best we can really shoot for, given how  
11 many dams there are in the river system that we've got?

12 MR. HOGAN: I think Fish & Wildlife Service has  
13 some target goals for passage at each dam, and Ken Sprankle  
14 has his hand up.

15 MS. DONLON: Is that based on other systems with  
16 dams?

17 MR. SPRANKLE: So Ken Sprankle, U.S. Fish &  
18 Wildlife Service. So currently the Connecticut River has an  
19 improved shad management plan; it was approved in 1992. It  
20 has targets in there, some of the figures I can quote is a  
21 range of between 40 to 60 percent passage of the previous  
22 dam's numbers; the subsequent dam. And then you take our  
23 target management numbers of 1.5 to 2 million fish back at  
24 the river mouth, you can do some extrapolations. What's a  
25 little bit of a wild card is there's allowable in-river

1 harvest to occur. That number has been dramatically reduced  
2 in recent years, to the point where it's almost negligible.  
3 So you can do some mathematical calculations on that. So  
4 you see Holyoke and you put that number a time or two, and  
5 then as everyone is well aware, we have some serious issues  
6 to deal with the Turners Falls project.

7 MR. HOGAN: Curiosity, Ken, how was the 40 to 60  
8 percent at each subsequent --

9 MR. SPRANKLE: That's a good question. It's  
10 based upon past historical population estimates to the lower  
11 river that have been done throughout the 1900s; it's really  
12 kind of a function on surface A bridge; it's really habitat.

13 It's not really broken out effectively by  
14 habitat. That's where we're really lacking information.  
15 That's one of the things that we'd like to address in some  
16 of those study requests.

17 Many of the plans up and down the East Coast just  
18 simply looked at a surface measure; it could be an 100 meter  
19 squared area, acres, and then production on the --  
20 corresponding production.

21 MR. HOGAN: Thank you, Ken.

22 MS. DONLON: Follow-up question. So it all sort  
23 of depends a little bit on the success rate of Holyoke; like  
24 how many -- I don't think we know -- we know how many fish  
25 pass at Holyoke but we don't know -- well, what the

1 percentage of fish that are making it up, and everything  
2 follows from there. the goals follow from there.

3 MR. CASTRO-SANTOS: Correct. That's something  
4 we're working on, that I have been involved in studies;  
5 we're hoping to improve it.

6 Again, a 50 percent value has been -- that's a  
7 reasonable approximation. I mean, the preliminary data this  
8 year is quite a lot worse; but we're working on -- there are  
9 reasons to question it; we have to be careful. So we're  
10 trying to be cautious here before we start releasing the  
11 data from Holyoke. But don't assume Holyoke is working  
12 perfectly. People thought Turners worked great until we  
13 started studying it. And maybe it did.

14 Actually, since I'm talking, I had a follow up  
15 point to Katie's comment, if I could. Ted Castro-Santos.

16 Katie, I think what she was saying was some sort  
17 of study of the cumulative effects of the facilities in  
18 species assemblages as you move down the stream. I think  
19 that was -- so a community assemblage analysis of what's  
20 going on, as you move down the stream.

21 Is that more or less what you're saying?

22 MS. KENNEDY: Essentially, yes.

23 MR. CASTRO-SANTOS: And then you chose as an  
24 example a nonnative species.

25 (Laughter)

1                   And so I just wanted to point that out; and I  
2                   think it's actually -- this is a species-poor system in its  
3                   native state. And I think it is possible that, in fact  
4                   likely that these projects are having a significant effect  
5                   on community structure and assemblage; and that may be to  
6                   the detriment, in some cases, of the native species. And I  
7                   suspect that that is something that should not get missed.  
8                   If this were to go forward, that would be an important  
9                   element of that.

10                   MR. HOGAN: Norman.

11                   MR. SIMS: Norman Sims from the AMC again.

12                   I was trying to do the math as he was talking  
13                   about each facility having a target of 50 percent; and the  
14                   math is that by the time you get to Wilder, maybe you're  
15                   passing 3 percent of the fish that came in the system.

16                   And that reminded me of a study that I just read  
17                   about on a U-Mass newsletter -- maybe my colleagues at U-  
18                   Mass would be familiar with this, about some U-Mass  
19                   researcher working with other people on the success of fish  
20                   passage in rivers. I don't think they were using it in  
21                   Connecticut. His estimate was that fish passage is  
22                   relatively unsuccessful and ends up passing only about 2  
23                   percent of the fish.

24                   Are you aware of who did that work?

25                   AUDIENCE: (inaudible)

1                   SPEAKER: I saw and read the study. It's all  
2 very secondary; it's not primary research that they're  
3 talking about, and there was an awful lot of hand-waving  
4 through that paper.

5                   But there are --

6                   AUDIENCE: (inaudible)

7                   (Laughter)

8                   SPEAKER: Yes, it's in Conservation Letters is  
9 the journal that that came from, and it just came out and I  
10 can't remember the first, the primary article.

11                   (Simultaneous discussion)

12                   AUDIENCE: Jed Brown and Don Waldman.

13                   SPEAKER: It's going to -- that's going to be  
14 subject to some critique, I think. I'm not saying I even  
15 disagree with their conclusions, but they got to those  
16 conclusions pretty quickly.

17                   MR. HOGAN: Carl.

18                   MR. MEYER: Yes, I just wanted to comment,  
19 Andrea.

20                   About the study, I was actually asked to comment  
21 on that study before they published it. It's basically an  
22 argument for dam removal, which I don't think is a  
23 consideration on this river, to look at it realistically.  
24 And also the rivers you look at, I don't think everybody  
25 would agree, we've never had a successful fish passage

1 facility built at the second impasse on this river. So I  
2 think it, as Ted would say, it's sort of -- it's a broad-  
3 based study and it may not apply to this system.

4 We don't have working fish passage for fish here.  
5 I think most of the fisheries people --.

6 SPEAKER: I'd also point out that that second dam  
7 hypothesis doesn't necessarily apply on the Connecticut,  
8 because fish do pass, whether we're reaching the 40 to 60  
9 percent target I think depends on the year you look at; but  
10 at Vernon. So I think painting that type of analysis with a  
11 broad brush doesn't really do anybody any good; we just need  
12 to figure out what's going on in our respective systems and  
13 try to fix the problems; and we get the best outcome we can.

14 MR. HOGAN: I agree. Thank you.

15 MR. PUGH: Don Pugh. Looking at the first bullet  
16 here on the cumulative effect on freshwater mussels, you  
17 usually think of these things as pretty static, but when you  
18 look at the survey that Ethan did, what he found was below  
19 Vernon there was a much higher concentration of alewife  
20 floaters as opposed to American shad or potentially blueback  
21 herring, if you had any. And very low concentrations before  
22 these fish are unable to pass the dam; and I hope that this  
23 will be something that will be considered in terms of the  
24 cumulative evaluation of mussels as the fish --

25 MS. McCANN: Tying the mussels to those fish --

1 MR. PUGH: Yes.

2 MS. McCANN: -- the passage --

3 MR. PUGH: A very dramatic survey, the  
4 Kingfisher's density, the alewife floaters right below the  
5 dam, where we know there's pretty poor passage of American  
6 shad.

7 MR. HOGAN: Other cumulative effects concerns for  
8 aquatic resources?

9 Terrestrial resources.

10 Terrestrial Resources

11 MR. BATTAGLIA: Brett Battaglia, with FERC.

12 Currently, the Commission has not identified any  
13 cumulative effects associated with terrestrial resources.

14 If you look at SD1, all the terrestrial resources  
15 do not have, currently no cumulative effects have been  
16 identified. If you have any suggestions or comments, now's a  
17 good time to discuss them.

18 MR. HOGAN: Really? (Chuckle)

19 Okay Jim.

20 MR. McCLAMMER: I guess somebody needs to say  
21 something about that. First of all, we're talking about a  
22 system that's been altered already, so a lot of our natural  
23 or exemplary flood plain (inaudible) to a large extent have  
24 been eliminated; but we could have some that are still out  
25 there. And provide a lot of valuable functions.

1           But what we do worry about is, and I think even  
2           the Nature Conservancy - U-Mass study is addressing this to  
3           some extent; but I'm not sure exactly regionally, how far  
4           geographically you're going with this. But clearly I think  
5           these resources, these flood plain commuters -- okay, these  
6           are the ones that have the individuals of plants and animals  
7           that need to be clearly circumscribed; and indeed that the  
8           floaters -- the water, you know, releases or impediments,  
9           the impacts on these communities, be ascertain and  
10          determined from a cumulative standpoint whether or not we're  
11          going to be losing more of these relatively unusual flood  
12          plains from these (inaudible) the ones that are actually now  
13          still in existence, as perhaps a result of climate change in  
14          terms of increased precipitation during these major flow  
15          events.

16                 So the effect of the water, the hydrology on  
17          these flood plain communities should be ascertained, and  
18          whether or not they have negative effects.

19                 MR. BATTAGLIA: If we were to agree with that,  
20          where would you say we look at these communities; in the  
21          five project boundaries, or Wilder to Holyoke from Wilder to  
22          the Atlantic Ocean, to -- what geographic scope would you  
23          think we would look at these communities?

24                 MR. McCLAMMER: I would say basically, you know,  
25          I'd certainly say the area would be areas have not been



1 surveyed at this point in time. I know the Nature  
2 Conservancy has done some work in the headwaters region in  
3 Southern Massachusetts, but I know in the reach of the river  
4 that I'm most familiar with, I don't think there's good  
5 detailed studies on where these communities are. Nor what  
6 impact that the fluctuating water levels will have on these  
7 communities in the future. And indeed, when you start  
8 impounding water for a long period of time, if indeed we  
9 have increased flows, it could have an effect on these  
10 communities that really haven't been identified in the past.

11 These are flood plain communities that really  
12 can't withstand long, continuous periods of inundation. And  
13 so geographically I would say anyplace above the Turners  
14 Falls, Bellows Falls, up the reaches of any potential area  
15 that could be flooded by the impoundments of the river.

16 MR. HOGAN: Katie.

17 MS. KENNEDY: Katie Kennedy, Nature Conservancy.

18 We hypothesized that the largest impact on the  
19 flood plain communities is in the impoundments, but we are  
20 still interested in understanding, it's largely understood  
21 that in terms of impoundments that, other than the actual  
22 impoundment itself, the downstream impact is larger on flood  
23 control facilities. So we are interested in understanding  
24 what potential cumulative effect there is by these  
25 facilities, by these facilities on down to flood plains.

1                   So we hypothesize that it's not that great, but  
2                   if there is any kind of flood protection offered by these  
3                   facilities, but -- I don't believe there is, but perhaps  
4                   there is; then you might understand what that impact might  
5                   be on flood plain communities downstream.

6                   MR. HOGAN:   So if the projects are influencing  
7                   the flood frequency that would inundate flood plains, that's  
8                   your question.

9                   MS. KENNEDY:   Yes.

10                  MR. HOGAN:   Okay.

11                  MR. BATTAGLIA:  Think it would be fair to say  
12                  that there would be a potential to tie in other activities;  
13                  for example, house development, agricultural activities,  
14                  where flood plain - are virtually removed.  And as a result  
15                  of those actions as well, there's non-project impacts?

16                  MS. KENNEDY:  Yes, those impacts.

17                  MR. BATTAGLIA:  They have a serious impact.

18                  (Laughter)

19                  SPEAKER:  If I could respond a little bit.  I  
20                  think part of this whole, the study should be getting a very  
21                  refined hydrolyzing model.  And since the data was on the  
22                  river is actually (inaudible) living in these days, and  
23                  either starving communities for water or flooding them for  
24                  periods of time.

25                  We almost need to take into consideration --

1 activities and changes in surface and slopes and vegetation  
2 actually from tributaries so that hydrological model can be  
3 as robust as possible. So indeed, I think what we're trying  
4 to do is to treat a hydrological model down at the base of  
5 the -- and ensure that once we have some idea what these  
6 communities need in terms of hydrological, that these  
7 regimes can be at least enhanced by the operations to the  
8 main stem, but also the tributaries to the Connecticut  
9 River.

10 MR. HOGAN: I guess what I'm struggling with is,  
11 I don't disagree that we ought to be looking at the  
12 terrestrial communities within the, that are influenced by  
13 the project, or projects. But I'm trying to understand how  
14 this is a cumulatively effected resource that should be  
15 looked at from a cumulative effects standpoint.

16 I don't disagree that we should be looking at --  
17 so if you can provide me with why this was also a  
18 cumulatively affected resource that we should be looking at,  
19 beyond the direct effects of the projects, please.

20 SPEAKER: So basically we're looking at the  
21 aerals that to date were took of for example flood plain  
22 communities before the construction of the dams, and what we  
23 have there now. Obviously we can't go back in history  
24 before the dam; but we do have the aerals that are acres of  
25 flood plain communities that are there now. That we want to

1 ensure that we don't reduce this total acreage. That being  
2 the cumulative impact that we, to map flood plain  
3 communities that we ensure that indeed is not a -- a  
4 reduction in total cumulative area of flood plain community  
5 because they are so valuable in terms of the interaction  
6 with the aquatic species as well as sometimes in terms of  
7 (inaudible); a lot of other functions and values.

8 So indeed we want to make sure we're not having  
9 any loss of area cumulatively.

10 MR. HOGAN: Okay.

11 MS. KENNEDY: Katie Kennedy, Nature Conservancy.

12 The only thing I can think of, and that's the  
13 reason I wasn't sure, but as it relates to hydrology, so  
14 we've already talked about how water -- a cumulative impact,  
15 so all this has been mentioned perhaps. So (inaudible)  
16 components of that flow regime that impacts, and define the  
17 structure of what flood plain communities.

18 So, and then the impact of flood control  
19 facilities and hydropower. So that's the only connection  
20 that I can see, perhaps, but it's potential.

21 MR. HOGAN: Your word is impact, my word is  
22 effect.

23 MS. KENNEDY: Impact.

24 MR. HOGAN: Mark?

25 MR. WAMSER: Mark Wamser. I think what we have

1 to keep in mind is what the hydraulic capacity of the  
2 projects are. Because when you're talking about flood  
3 plains, this is beyond the capacity of a project, so it's  
4 out of the utility company's control. So I'm not sure if I  
5 understand, I guess, what the nexus of the project is  
6 downstream and like for flood plain for us in Connecticut,  
7 for example. I can see it within the project comments  
8 themselves, but.

9 MR. HOGAN: And Katie did mention that. She  
10 wasn't sure -- the hydraulic capacity -- will allow for --.

11 MR. WAMSER: And one other thing real quick is  
12 the -- the impoundments at least for Turners Falls, we put  
13 in the PAD, there's not storage capacity in a way that  
14 people can give Army Corps of Engineers storage capacity; it  
15 can be filled very quickly.

16 AUDIENCE: And the flow through is very quick.

17 MR. WAMSER: And the flow through is quick, yes.

18 MR. HOGAN: Jim.

19 MR. McCLAMMER: In sort of response to that, I  
20 think really probably (inaudible) has this really for  
21 increase of low flow in the Connecticut River; what we've  
22 seen in the past and what we may anticipate in the future  
23 and those periods of exceedingly high flow.

24 These are problems for you guys to get involved  
25 in in trying to reduce the impact of that flow regime on

1 those identified communities. Basically when we have like  
2 really reduced flows, should you be producing hydropower or  
3 should you be impounding the water and (inaudible)

4 This is the kind of, where I see not in sort of  
5 the normal operation, but during stream events. And we're  
6 talking about 50 years in the future; and clearly what we're  
7 looking at now is the projections of changes in  
8 precipitation patterns.

9 They will surprise us all; not only during increased  
10 precipitation, but also when we periods of fairly dry  
11 periods as well. And so I think because you have to look at  
12 something that is long term, you had to look at some very  
13 extreme events. And I suspect, we're speaking probably 95  
14 percent of the time without an unusual effect. But when we  
15 do have these extreme events, this is when you need to  
16 communicate so much.

17 MR. HOGAN: Should we move on?

18 SPEAKER: Just to make a real quick point. I  
19 thought this was already covered but it might not have been.  
20 Earlier you mentioned -- you used the term 'channel  
21 degradation' or 'incision of the channel'; and one question  
22 I've wondered about and maybe this has already been  
23 answered; but as to whether the peaking, the hydro peaking  
24 can contribute to channel degradation, and that would happen  
25 downstream, at least at Holyoke, right? And if so, does

1 that channel degradation reduce the ability of the flood  
2 plans to be inundated? If the channel gets degraded, then  
3 the frequency and duration of inundation would go down as  
4 well.

5 And that's something I've wondered about; maybe  
6 somebody has already studied it or not; if not, it does seem  
7 like a cumulative effect that belongs in this.

8 MR. HOGAN: Thank you. Katie?

9 MS. KENNEDY: (inaudible) I think that that would  
10 aggravate the impact, the structure of the flood plain  
11 community.

12 MR. HOGAN: Okay. Should we move on to --  
13 Melissa?

14 MS. GRABER: This isn't a terrestrial resource  
15 issue, but seeing as that's where invasive species is being  
16 brought up here, and this kind of ties back into the water  
17 quality issue of water temperature, it's my understanding  
18 that the Asiatic clam has been found in the lower river, and  
19 that right now conditions might not be favorable to its  
20 expansions to upper portions of the river except but for  
21 water temperature, and that so potentially if water has gone  
22 up to a certain degree, then maybe they could survive it and  
23 colonize these mid- to upper reaches of the watershed, so I  
24 think to the extent that water temperature is a cumulative  
25 effect, (inaudible) invasive species and potentially others.

1 MR. HOGAN: Thank you.

2 Jim.

3 MR. McCLAMMER: The comments I made about flood  
4 plain communities would extend to all these other  
5 communities as well. I am under the opinion that a lot of  
6 flood plain communities are on actually (inaudible) but the  
7 wetlands that are adjacent to the Connecticut River also  
8 have the potential to be affected by it. Changes in the  
9 hydrologic regime.

10 MR. HOGAN: Sure. Should we move on to  
11 threatened and endangered species?

12 Threatened and Endangered Species

13 MS. McCANN: So for threatened and endangered  
14 species, the preliminary issue that's been identified  
15 similar to what we've already mentioned, for aquatic  
16 resources and there's a great overlap with water resources  
17 as well.

18 And that would be: The effect of project  
19 operations, including reservoir and downstream flow  
20 fluctuations on aquatic species listed as threatened or  
21 endangered under the Endangered Species Act. And for  
22 example, that would include the dwarf wedgemussel, jessup's  
23 milk vetch and the Puritan tiger beetle.

24 Now, just to clarify, the Puritan tiger beetle  
25 hasn't been identified within the project areas based on the



1 information in the PAD, but it does occur downstream of the  
2 projects, so the fluctuating water levels are affecting them  
3 downstream; that was something that would be a cumulative  
4 effect that we will be looking at.

5 MR. RAGONESE: Just to clarify, the jessup's milk  
6 vetch also is not in the project boundary; it's downstream.

7 MR. HOGAN: All the projects, or just the  
8 TransCanada?

9 MR. RAGONESE: Well, I'm not -- I can't speak for  
10 -- the four locations are out of the project boundary.  
11 They're affected by property boundary.

12 MR. HOGAN: Okay.

13 MS. McCANN: Project area.

14 MR. HOGAN: Thoughts about project effects on  
15 threatened and endangered species or habitats, cumulative  
16 effects?

17 Okay. Recreation.

18 Recreation

19 MR. BEECO: Recreation. So originally there were  
20 no cumulative effects identified; however, over the course  
21 of the meeting we've identified two areas of cumulative  
22 effects.

23 One would be the multi-day canoe, canoeing  
24 opportunities to go across the entire stretch, and bypassing  
25 each dams, as well as the loss of natural flow/whitewater

1 recreation opportunities.

2 MR. HOGAN: Other thoughts about recreational  
3 opportunities that may be cumulatively affected?

4 Norman?

5 MR. SIMS: Norman Sims from the AMC. I'll keep  
6 this brief because I've said it repeatedly at these  
7 meetings.

8 The comments that Adam made about multiple-day  
9 canoe and kayak trips is certainly a cumulative effect. I  
10 think that the dams could be characterized as cumulative  
11 obstacles to downstream navigation for canoes and kayaks.  
12 But Kim Mendik from the National Park Service mentioned  
13 something the other day that I think is also relevant in  
14 that area of study; and that is to look at a survey study of  
15 why people don't use the Connecticut River as a resource.  
16 If these obstacles are discouraging to people, it might be  
17 important to know that in terms of things that could be  
18 mitigated.

19 I think particularly as you move downstream and  
20 you face continuing obstacles, it becomes discouraging.  
21 Maybe they don't get past the second fish ladder.

22 (Laughter)

23 I have also mentioned a study of the quantity,  
24 quality and adequacy of the land-based facilities; meaning  
25 portages, campsites and so forth. I think that's also a

1 discouragement to boating on the river and should be studied  
2 with a look to the future or the term of the license,  
3 whether it's 30 years or longer.

4 Another cumulative thing going on in the river  
5 right now is the National Blueway System, which is a federal  
6 program designating the Connecticut River and its 7.2  
7 million acre watershed as the first National Blueway. This  
8 involves a number of federal agencies, including the  
9 Department of Interior, the National Park Service, the Corps  
10 of Engineers, Department of Agriculture and states that are  
11 involved with the river.

12 This could contribute to mitigation in the  
13 relicensing if the Army Corps of Engineers or other of these  
14 agencies were willing to cooperate. Just two other  
15 comments: I think as people pass down the river, they don't  
16 actually understand they're passing from one FERC-licensed  
17 project to another. The Connecticut River paddlers trail,  
18 for example, and the Connecticut River birding trail don't  
19 really designate lines to indicate passage from one state to  
20 another or one project to another. So these may be  
21 cumulative interests for those parties.

22 And lastly, I would also like to say that the  
23 Appalachian Mountain Club --

24 MR. HOGAN: Norm, could you explain that a little  
25 bit more?

1                   MR. SIMS; Well, the Connecticut River paddlers  
2 trail, for example, will be extended from above Fifteen Mile  
3 Falls down into the lower reaches of the river; and in  
4 creating that organization and doing some good through that  
5 organization.

6                   They're not necessarily even aware of this  
7 relicensing process or what the relicensing might contribute  
8 to their efforts.

9                   MR. HOGAN: So you aren't asking for boundary  
10 markers on the trail to say "Hey, you're going from one --

11                   MR. SIMS; Not at all.

12                   MR. HOGAN: -- project to the next"?

13                   MR. SIMS: It would be really helpful to have  
14 some markers about where we could find a portage route or a  
15 campsite, but boundary markers for projects aren't very  
16 useful.

17                   MR. HOGAN: Okay.

18                   MR. SIMS; Lastly, the AMC is very interested in  
19 trails there are trails on project lands in these  
20 relicensings. We would like to see those trails extended,  
21 the maintenance of them coordinated, and the opportunities  
22 to link those existing trails with other existing trails.

23                   Again, trails in the watershed cross project  
24 boundaries and might be greatly benefited if there was some  
25 mitigation where the licensees might purchase additional

1 land.

2 MR. HOGAN: As we had indicated, we -- based on I  
3 believe your comments or others over the meetings, we  
4 identified multi-day canoe trips as being cumulatively  
5 affected by these projects.

6 Would you have a recommended geographic scope? I  
7 mean, is it just these five, or as a paddler yourself, what  
8 do you perceive is where people would like to put in on the  
9 Connecticut River and take out on the Connecticut River?

10 MR. SIMS; I've never tried personally to do a  
11 through trip on the river. I'm very discouraged when I  
12 encounter a dam. But I may in the future.

13 I have talked to through paddlers. They start  
14 very far up in the system, frequently from various lakes up  
15 there, up above Fifteen Mile Falls. In the context of this  
16 relicensing, there's a lot of miles of river included. If  
17 you look at the forestry reach above Wilder, and the far  
18 downstream reach beneath Turners Falls, you go from Fifteen  
19 Mile Falls all the way to Holyoke Dam, and that -- I don't  
20 know how many river miles that is, but that should certainly  
21 be a focus for the study.

22 MR. HOGAN: Thank you, Norman.

23 SPEAKER: We talked earlier about fish resources;  
24 fishing is a recreational activity.

25 MR. HOGAN: Yep.

1                   SPEAKER: So it's a matter of access, it's a  
2 matter of availability of fish to find. Some people fish by  
3 boats, some people put on bleeders, some people put on  
4 waders that may not be informed about releases, dams up the  
5 stream.

6                   MR. HOGAN: Okay.

7                   SPEAKER: Lots of effects. The fundamental one  
8 is the ability of the fish to be fished.

9                   MR. HOGAN: I think that's part of our analyses;  
10 the project effects on fish populations.

11                   Kevin.

12                   MR. MENDIK: Kevin Mendik, National Park Service.

13                   I read the recent designation by the Secretary of  
14 the Connecticut River Blueway --

15                   MR. HOGAN: Can you speak up for me, please.

16                   MR. MENDIK: Sure. The recent designation by the  
17 Secretary of the Interior of the Connecticut River as a  
18 Blueway has led to a broader view, sort of from my agency  
19 about the -- source to sound. A lot of what I've heard in  
20 the last couple days from the various members of the public  
21 and interest groups seems to lead toward like a continual  
22 displacement of recreational activities. It's known that  
23 there are impoundment fluctuations; those have an effect on  
24 recreational access both to and from the river. People know  
25 about those situations and as a result may very well be

1 discouraged in the short term, or in the long term over time  
2 from using the river.

3 And as a result, those facilities displace their  
4 use to other facilities, maybe up and down the river, maybe  
5 in other areas. So you have cumulative impacts up and down  
6 the whole system as a result of segments of the system  
7 having barriers, if you will, to recreational use on a  
8 temporary or seasonal basis. I think that's something that  
9 needs to be looked at, not only from impoundment  
10 fluctuations and sedimentation, but the conditions of the  
11 facilities at each of the access points.

12 Another element that Norm mentioned was the need  
13 for a network of trails. I think uniform signage would go a  
14 long ways, both from the TransCanada and FirstLight  
15 projects. I personally find that it's helpful if I see an  
16 indication of what the FERC project is; where we are now;  
17 you have all various project facilities, it would help to  
18 have some type of uniform signage for all these facilities.

19 MR. BEECO: So I have a question. We're quite  
20 convinced that there's a cumulative effect on water-based  
21 recreation. What I'm curious about is, is it a cumulative  
22 effect or is it a project effect for water-based recreation?

23 MR. MENDIK: I think it's cumulative. I mean,  
24 it's not coming from any one specific use; it's not  
25 necessarily a terrestrial based, it's not necessarily river-

1 based; it's system-wide change in use patterns as a result  
2 of limitations in certain areas. You have displacement in  
3 one area, it's going to have an effect on another area or a  
4 number of other areas.

5 In Baron Cove, people know that that facility  
6 there is problematic. They're going to change their use  
7 patterns, and that's over a pretty broad area. So those use  
8 patterns are going to be affected maybe down at the Holyoke  
9 pool, and may be affected over on the Deerfield, it may be  
10 affected on the Housatonic up in Canada (ph) Lake. So  
11 you're going to have a broader impact just from what we see  
12 within the project area. And again, as was mentioned, the  
13 project boundary is very different from the area of effects  
14 of the project.

15 MR. SIMS: Could I add something to Adam's  
16 question?

17 MR. HOGAN: Go ahead.

18 MR. SIMS: I think what we're talking about is a  
19 study request; and mentioning land-based series for multi-  
20 day canoe trips, we're talking about campsites, access  
21 sites, portage routes, sanitary facilities, all of those  
22 kinds of things.

23 And each project may contribute a different  
24 number of campsites. I'm told by through paddlers that  
25 campsites become very few and far between, quite scarce once



1       you cross the Massachusetts border. So the various projects  
2       may differ, but it seems to me that a study should try to  
3       establish what are the minimum qualities that campsites  
4       should have. Should they have toilets, for example; pit  
5       toilets or whatever? Should they have a water supply?

6               These are the kinds of things that are cumulative  
7       as you come downriver, because if you're carrying all your  
8       gear in a canoe and you have to portage it, you need to know  
9       what to bring with you. Do you have access to fresh water?  
10       All of those kinds of things. If there's some  
11       standardization of the campsites throughout these regions,  
12       it might -- I think that's a cumulative study question.

13              MR. HOGAN: So I think what I'm hearing is, you  
14       know, we're going to be looking at the availability and the  
15       functionality of each of the rec facilities that are being  
16       provided; the need for rec facilities within each of the  
17       projects; and then you would also like us to take a look at  
18       cumulatively how are these rec facilities that are being  
19       provided within the region meeting the demand within the  
20       region, and is there a need to -- basically take that  
21       regional look for all five projects together. So perhaps  
22       TransCanada is providing a type of opportunity that may not  
23       be available at FirstLight, but it meets the regional need  
24       and vice-versa.

25              Is that --?

1 MR. SIMS: Well, yes, with two conditions.

2 Somebody coming down a river in a canoe is only  
3 traveling a certain number of miles in a day. So if  
4 TransCanada has provided a lot of campsites that are now  
5 behind them, they're not served well.

6 MR. HOGAN: Well, but that would be part of our  
7 look.

8 MR. SIMS: Yes. And the second thing is, these  
9 relicensing periods are times to think not about what is the  
10 demand and the need today, but what will the need be in 30  
11 years? It's very important --

12 MR. HOGAN: And we typically take that approach.  
13 Chris.

14 MR. CAMPANY: A study that may be useful would  
15 also be surveys of users or potential users about what  
16 information they actually would benefit from concerning the  
17 flows and the operations of the projects and the river. I  
18 think that's what -- so beyond even what facilities are  
19 available. What information would be desirable, and how  
20 would they look for that information? Is there a certain  
21 aggregating place to know that 'Okay, these are -- given the  
22 conditions today, given the likely power demands and other  
23 things, this is what's likely to happen.' That level of  
24 predictability might encourage greater use; and of course  
25 that has not only recreational effects but economic effects

1 for the region as a whole.

2 MR. HOGAN: Absolutely. Good suggestion.

3 MS. BOOK: Eva Book, U-Mass. This is a curiosity  
4 question. Is there anywhere that you're looking at -- and  
5 we talk about fishing as a recreational activity? Fishing  
6 can also be a livelihood activity, especially for poorer  
7 populations, inner city populations, I've heard there's  
8 quite a bit of fishing for minority, immigrant populations;  
9 in Holyoke that is certainly true; and in the Portland,  
10 Oregon area where I used to live. And many people have to  
11 think about the river and the fishery resources in a  
12 different kind of way versus recreation. But it was  
13 actually, in some sense like an economic activity.

14 And if you're thinking about cumulative impacts  
15 on fishing assets, the number of fishery resources  
16 available, I'm wondering if that that can be considered in  
17 your categories of resources?

18 MR. HOGAN: At this point in time, we haven't  
19 heard from anybody in our public meetings that subsistence  
20 fishing is an issue; but we haven't considered that until  
21 right now.

22 MS. BOOK: So I'm a social scientist researcher  
23 at U-Mass, and so one of the things a lot of social science  
24 studies suggest is that a lot of people that need and use  
25 those kind of resources the most are probably the least

1 likely to come to meetings like this and submit study  
2 requests.

3 So anyway, to the extent that you can consider  
4 that, it might be worth picking up.

5 SPEAKER: Yes, this is (cough) Mass Fish &  
6 Wildlife, just a comment on that. From my point of view,  
7 there shouldn't be any commercial fisheries going on in the  
8 fresh waters of Massachusetts; there's a small commercial  
9 bait fishery that we're trying to phase out. Any other fish  
10 that are caught in fresh water in Massachusetts are for  
11 recreational purposes only, and it's illegal to sell them.

12 So there may be people catching fish and eating  
13 them; that's fine, we encourage that. But as far as  
14 commercial activity goes, there shouldn't be any in the  
15 waters of the state.

16 MR. HOGAN: Okay. Thank you, Joe.

17 Carl?

18 MR. MEYER: Just to add on to that, looking at  
19 John Warner, but the Connecticut River fisheries restoration  
20 for 1967 was to create a source of seafood for the public.  
21 And that as far as I know, it still stands as policy. I  
22 don't know if that has been gone back on, but they do fish  
23 for shad from Adam somewhat northward, and there's no reason  
24 to think that if you had a decent shad restoration there  
25 might not be a commercial aspect to it; but it is a seafood

1 source, and that is still a part of the targeted mandate, as  
2 far as I know.

3 SPEAKER: I'll just reiterate: It's illegal to  
4 sell any fish that you catch in fresh water in  
5 Massachusetts, so that would preclude any commercial  
6 fisheries.

7 MR. MEYER: But is it still a creative source of  
8 seafood for the public?

9 AUDIENCE: Yes, well, you catch a fish and eat  
10 it. That's seafood, that's different from commercial  
11 exploitation.

12 MR. HOGAN: We've got both points.

13 (Laughter)

14 And thank you for the inputs.

15 Anything else on recreational fishing? Or any  
16 cumulative effects?

17 Land use.

18 Land Use

19 MR. BEECO: So on land use, on a couple other  
20 resource issues, we've identified land use to have, or may  
21 have cumulative effects on erosion and flooding.

22 Other than that, are there any land use  
23 cumulative effects we may have missed?

24 MR. HOGAN: Curiosity with land use; does anybody  
25 know of particular future construction-type activities that

1 are planned; you know, highways, roads that are within the  
2 vicinity of the river that we may need to take into  
3 consideration when looking at our license process. and  
4 potential cumulative effects to associate with the  
5 construction of that project and the operations of the  
6 hydros? Or anything like that?

7 AUDIENCE: There's a, New Hampshire Department of  
8 Transportation has a scheduled upgrade of Route 12  
9 immediately adjacent to the river above Bellows Falls;  
10 included in the area where, as a result of an ice jam some  
11 years ago, there was a significant impairment to some  
12 dwellings and to the roadway itself. So it's a fragile  
13 area.

14 MR. HOGAN: Do you happen to know the schedule?

15 SPEAKER: It's in the ten year plan.

16 AUDIENCE: It's in the ten year plan.

17 MR. HOGAN: In ten years, okay.

18 SPEAKER: Money has been appropriated, in the  
19 planning stages on construction in the next couple years.

20 MR. HOGAN: Because if it was occurring before  
21 licensing -- ?

22 SPEAKER: Pardon?

23 MR. HOGAN: If it were to occur before the  
24 licensing.

25 SPEAKER: You never know with funding these days.

1 MR. HOGAN: Got it.

2 AUDIENCE: Probably simultaneous.

3 MR. HOGAN: Other types of issues; it could be  
4 wastewater treatment plants, things of that nature that we  
5 should be taking into consideration; and I'm referring to  
6 new facilities that -- land use along the river's edge, and  
7 obviously would have other issues beyond land use and water  
8 quality.

9 AUDIENCE: Well, the wastewater treatment plants  
10 have conditions, each has its condition in terms of  
11 nitrogen, for example;, and concentrations are affected by  
12 operations of the dams. So it seems to me when water  
13 quality is being assessed, that need of assimilative  
14 capacity needs to be part of the--.

15 MR. HOGAN: I guess my question was more of, are  
16 there new plants planned that folks know about that we  
17 should be aware of. No?

18 Jim.

19 MR. McCLAMMER: I might comment. I think I read  
20 the pre application document pretty quickly, but we actually  
21 have a large wastewater treatment facility in Charlestown  
22 which has a tremendous capacity. So what it has today it  
23 discharges, which I don't think you guys know three-quarters  
24 of the fact that we have one; but indeed, we have the  
25 ability increase that discharge greatly; increase its

1 capacity. Now you probably know about the new plant and  
2 down the road, and some of the others.

3 MR. HOGAN: Thank you.

4 John?

5 MR. WARNER: John Warner. On the land use side  
6 of -- even though we're discussing it in meetings held at --  
7 land use along the reservoir and whether it's agricultural  
8 land or -- that's a cumulative thing down the river basin.

9 Doesn't change the analysis, but I think we need  
10 to look at the entire length of the river; you know, through  
11 these (recollect areas, to protect the lands, corridors.

12 MR. HOGAN: So similar to the recreation, if it's  
13 being provided in one area and may not necessarily be needed  
14 in another area, but we want to look at the whole picture.

15 MR. WARNER: Well, it's not just recreation, but  
16 it would be --

17 MR. HOGAN: No, no, I'm saying -- similar to that  
18 situation you want --

19 MR. WARNER: It's the same issue --

20 MR. HOGAN: Okay. Thank you.

21 Kevin.

22 MR. MENDIK: Recreational use is a function of  
23 recreational access, so that the two are linked, and any  
24 evaluation of recreational use needs to wrap in land uses,  
25 both allowable and potential up and down the river. So it's



1 not just a function of what the power companies may own if  
2 they are the project area, but lands adjacent to them if  
3 developed or uses change that preclude potentially future  
4 recreation. You may identify areas that are not currently  
5 public access; might be desired, so again, changes in land  
6 use to include those.

7 MR. HOGAN: Thank you, Kevin.

8 Other land use-type concerns, for cumulative  
9 effects?

10 Aesthetic Resources

11 MR. BEECO: Aesthetic resources, we haven't  
12 identified any cumulative effects for aesthetic resources.

13 SPEAKER: I think that's the aesthetics of what  
14 you see from the river; obviously a function of land use --  
15 changes in land use.

16 MR. HOGAN: Socioeconomics?

17 AUDIENCE: Just jumping back for a second to  
18 scenic resources. The Connecticut River Scenic Byway,  
19 National Scenic Byway goes parallel to the river and the  
20 routes are identified, designated signage -- uniform signage  
21 by the way -- and you have integrated that with your study  
22 area.

23 And the reason is the attractiveness of the river  
24 and the rural land use, and small, historic villages. This  
25 is Vermont and New Hampshire.



1 and it isn't cultural unless it's a current cultural  
2 resource.

3 But in the EIS and cumulative analysis, where  
4 does the concept of hydropower, non-carbon-emitting resource  
5 play into the cumulative effects or the regional energy  
6 policy or the national energy policy or state energy policy  
7 in terms of its role, its contribution, its -- if it were  
8 reduced or if it was increased and the effect on that mix or  
9 policy or direction or benefit; does that come into the EIS  
10 analysis?

11 MR. HOGAN: That depends on what day it is.

12 (Laughter)

13 MR. RAGONESE: How about today?

14 MR. HOGAN: Right now, no. But we have had  
15 environmental analyses where we look at -- you know, how  
16 many tons of carbon is displaced by the hydro versus let's  
17 say a coal fired plant or other form of generation; but the  
18 current policy is not to do that comparison.

19 MR. RAGONESE: There may be another; Question B,  
20 the effects of generation loss and not only to the energy  
21 mix or to potential directions going into policy, but does  
22 the EIS also take into that fact of a cumulative impact of  
23 energy loss on such things as community investment,  
24 taxation, you know, wealth to the local communities?

25 MR. HOGAN: Not so much taxation. What we do do

1 is look at projected energy demands and how any  
2 recommendations that we may be making for either increasing  
3 or decreasing generation would affect meeting that demand,  
4 the projected demand for the region?

5 MR. RAGONESE: Just an energy demand, not  
6 necessarily an economic impact.

7 AUDIENCE: Well, that is economic.

8 MR. RAGONESE: Well, I know it is, but I'm  
9 curious about, is this in dollars or is it in megawatts?

10 MR. HOGAN: I think it's in megawatts. And we do  
11 look at the recommendations that we're making, we do convert  
12 that to dollars.

13 MR. RAGONESE: But you carry that through in  
14 terms of a cumulative effect into the socioeconomic impact  
15 in the communities in the project area versus project  
16 boundary; you know, I'm just sort of curious.

17 MR. HOGAN: Would you like us to, John?

18 MR. RAGONESE: Well, I'm just curious what the  
19 practice typically is. I think we would provide you what we  
20 feel is appropriate in an application. I'm curious more  
21 about what you do with an application; or do you conduct  
22 that analysis.

23 MR. HOGAN: I want to --

24 MR. RAGONESE: You've not answered me; it's on  
25 the record.

1 MR. HOGAN: I want to --

2 MR. RAGONESE: That's a lot of fun.

3 (Laughter)

4 MR. HOGAN: No, I -- I don't have a good answer  
5 for you. Not my resource area. We do look at the economic  
6 benefits of the projects, you know, we recognize that there  
7 is a public interest, and when you go home and you flip the  
8 light switch that the lights come on. And we basically do  
9 our balancing of the environment and the value of the power.  
10 And that value is not just an economic value, it is the  
11 existence of it, so.

12 Kevin?

13 MR. MENDIK: I think one other aspect under  
14 socioeconomic impacts would be the opening or expanding,  
15 upgrading, relocating of existing facilities. That may  
16 affect the commercial facilities and their current bottom  
17 line, their future plans. But as I'm hearing now you have a  
18 lack of public facilities, a lack of optimum conditions.  
19 And if that changes, again that may displace the use from  
20 existing commercial facilities back to public facilities.  
21 Just an area that needs to be looked at in the overall  
22 scope.

23 MR. HOGAN: As part of a socioeconomic analysis.

24 Jim.

25 MR. McCLAMMER: Jim McClammer again.

1           Again just looking at the impact of these big  
2           reservoirs and the fact that they're providing recreational  
3           opportunities for boaters and anybody else that uses the  
4           river. What we do have in New Hampshire is basically, the  
5           river has to respond to respond to boating, licensing the  
6           docks that are out there and also monitoring the traffic of  
7           boats out there. And it becomes quite a burden to the state  
8           to have to do these things and not be compensated for; and  
9           right now in most states, we have a financial crisis, and  
10          there's not a lot of money being allocated to make sure that  
11          the boats are not exceeding the speed limits and creating  
12          additional problems such as wakes that are causing erosion,  
13          and it's a safety hazard if you go out there in non-powered  
14          watercraft.

15                 So that's the sort of economic impact on the  
16          states as a result of the recreational opportunities being  
17          provided by the dams.

18                 MR. HOGAN:

19                 MS. CAMPBELL: Elisa Campbell. I'd like to come  
20          back for a little bit to the issue of where our power comes  
21          from, and I'm assuming that the decision as to whether,  
22          looking at power from existing hydro dams, displaces how  
23          much power that doesn't have to be generated some other  
24          place is probably above your pay grade. But --

25                 MR. HOGAN: I'm sorry?

1 MS. CAMPBELL: I'm assuming that the decision --  
2 the way I heard it was that FERC does not currently do a  
3 comparison of carbon from various forms of power. And so  
4 I'm wondering, is that a decision by FERC or is that a  
5 decision by Congress? Or is that a decision by  
6 administration overall, or if we think that --

7 MR. HOGAN: It's a political decision.

8 MS. CAMPBELL: Yes. So if we would like to see  
9 that changed, we contact our Representatives, Senators and  
10 President? Question mark.

11 MR. HOGAN: Contact whomever you feel you need  
12 to.

13 (Laughter)

14 MS. CAMPBELL: Politically.

15 MR. HOGAN: I am not going to tell you to contact  
16 anybody --

17 MS. CAMPBELL: No, but it's -- no, no. I'm not  
18 trying to trap you into a --.

19 MR. HOGAN: Norman first, and then we'll call up  
20 front.

21 MR. SIMS: Norman Sims, AMC.

22 I just want to make a very small comment about  
23 what John Ragonese said about non-carbon-based electric  
24 generation. I think he's correct about that, and I think  
25 there's a value to that. But we should be careful in how we

1 designate value.

2 As I understand contingent valuation studies, the  
3 value of electricity generated by a hydro plant is reduced  
4 by the amount that it charges the public to use that  
5 electricity, in the same way that the value of a whitewater  
6 trip by a commercial outfit that charges for that trip is  
7 reduced. Whereas public use of the river has a large value  
8 because there's no expense to obtain that experience.

9 The economic benefits are different. Power  
10 stations generating -- and that's just separated from the  
11 term 'value' as I understand it. I'm not an expert at this  
12 kind of stuff.

13 MR. HOGAN: I wasn't trying to -- we recognize it  
14 as a public interest in having the lights come on when you  
15 flip the switch. Not a look at value in any way. When we  
16 do look at the value of the power, we look at the next --  
17 when we compare hydro, we look at the next -- to get a  
18 dollar amount we look at the next cheapest form of power,  
19 alternative source of power, whether it be coal or natural  
20 gas or things of that nature, to provide us with a  
21 comparison of the dollar value on hydro.

22 And I'm going to caveat this with: I have not  
23 worked in hydro in a deregulated system yet in the country.  
24 So this is my first one, so it may be a different situation  
25 here; and I'm not sure how the economics work here.



1                   MR. SIMS; Just one last comment before John  
2 corrects me on this one.

3                   (Laughter)

4                   MR. RAGONESE: I don't correct you, Norm.

5                   MR. SIMS: I just want to also mention that we  
6 have to bear in mind that the fuel that hydro power stations  
7 use is actually a public resource; it's the public river.

8                   MR. HOGAN: We do.

9                   John, before you respond, I told this young lady  
10 here that she would be able to comment.

11                   MS. MAYS: Alice Mays, Putney.

12                   Just that there is a great deal of value in  
13 keeping local dollars circulating locally, so that we get  
14 more value, more wealth circulating in any community.

15                   MR. HOGAN: I agree with that.

16                   MR. RAGONESE: What I was trying to get, focus on  
17 was, as you just described there may be a -- there's a  
18 quantification, perhaps in displacement. So if we're  
19 pulling out 100,000 megawatt hours a year as a result of  
20 this relicensing, where's that going to come from? There's  
21 usually some brief analysis of the impact of that.

22                   What I'm actually asking is whether or not  
23 there's a similar, only going in the other direction. If  
24 there's policy that says "we want to be aiming for 25  
25 percent" -- you know, energy on the renewable side. If we

1 pull this out what is the cost to meet that goal? From the  
2 renewable side, which is -- perhaps others may be biomass,  
3 maybe it's wind, maybe it's -- you know, what are the energy  
4 costs -- what are those energy costs?

5 So it's like, sure there's a displacement for the  
6 least cost, but there are also policies and directions --

7 MR. HOGAN: And incentives.

8 MR. RAGONESE: -- that are driving towards the  
9 renewable goal, how do we meet the renewable? That's what I  
10 was trying to capture in that same analysis; only in the  
11 other direction.

12 MR. HOGAN: Okay, and I don't have a good answer  
13 for you, John.

14 MR. RAGONESE: But you clarified really the focus  
15 of what I was trying to get. So I just wanted to say that.

16 MR. MEYER: Carl Meyer.

17 On the opposite side of that, John, I wonder if  
18 the FERC is taking into consideration a pumped storage plant  
19 that operates on the spot market in a way that Northfield  
20 Mountain operates, which is sort of like a day trader having  
21 a party in the stock market at times. From my  
22 understanding, having worked with people that work there and  
23 having worked up there myself, this went from a plant that  
24 used to operate in the mornings and for several hours in the  
25 afternoons, so now they can turn on pumps; they don't rest

1 for more than 15 minutes. You can be selling one of those  
2 four different turbines to one place -- I don't know if it's  
3 hundreds of miles away or if it's five hundred miles away;  
4 and this is -- so are you considering those considerations  
5 in what's being done with the public's river to balance off  
6 what John was talking about?

7 MR. HOGAN: Carl, as I just alluded to, I have  
8 not worked in a deregulated -- none of the hydros that I've  
9 worked on for relicensings have been in a deregulated energy  
10 market. And I'm not the guy who does this analysis.

11 So I'm not certain what this economic analysis  
12 looks like in a deregulated market; so I don't want to give  
13 you false answers. I don't know.

14 MR. MEYER: There's considerations from both  
15 angles. I know the power companies are not making money,  
16 you know. So it's tough.

17 MR. WARD: John Ward, Gill Select Board.

18 I'd like to follow up on that a little bit. John  
19 has made some good points; Carl also, and I'd like to  
20 connect the dots a little bit when it comes to the  
21 Northfield Mountain Pumped Storage Facility. Is, you can  
22 talk about FERC looking at megawatts generated. And this  
23 conversation has turned a bit into financials, the  
24 socioeconomic aspect of it, where the pumped storage  
25 facility, while it is being used as a revenue generator, is

1       actually a facility that consumes a lot more electricity  
2       than what it in turn generates, to the tune of about 1.3  
3       million megawatt hours per year, which is a lot more than  
4       any of us can save through conservation or efficiency.

5                   And that should be factored into the same type of  
6       study, the same conversation that John brought up, about the  
7       benefits of reduced carbon emissions and so on. And one of  
8       the pieces with that, is that facility right now is not  
9       actually a hydro facility; that is a nuclear facility.  
10      Because what that is doing is that is taking excess base  
11      load and converting that into peaking electricity.

12                   And the day that Vermont Yankee shuts down, which  
13      is the nearest nuclear facility, that whole relationship  
14      between base load and peak load will change; and that should  
15      be factored in when looking at that facility and the  
16      cumulative effects of all five facilities put together. Do  
17      you have a net generation or a net loss?

18                   MR. HOGAN: I can promise you we won't be looking  
19      at it as a nuclear facility. But we will look at the  
20      economics and we do recognize that yes, it does consume more  
21      megawatts than it generates; but pumped storage projects  
22      also provide a lot of ancillary benefits to the grid and the  
23      grid stability that are important and of the public  
24      interest. So we consider all that when we do our review of  
25      the facility.

1           MR. WARD: I agree that there are important  
2 benefits to that facility. Grid stability is one, and I  
3 don't know if it's being operated in this way, but grid  
4 recovery would be another. I do think it would be worth  
5 looking at what has historically been the reason for its  
6 being, and could it be repurposed in some way when things  
7 change.

8           MR. HOGAN: Thank you.

9           Shall I move on to cultural resources?

10                           Cultural Resources

11           MR. QUIGGLE: At this time we have not identified  
12 any cumulative impacts to archaeological, historic  
13 resources. Those were presented in Scoping Document 1. So  
14 we'd be interested to hear if there are any additional  
15 comments regarding those resources.

16           MR. HOGAN: Jim.

17           MR. McCLAMMER: Jim McClammer again. And  
18 something I said under bank erosion basically is, the same  
19 thing sort of applies here, I guess. So I don't know if I  
20 need to reiterate it.

21                           The bottom line is because of the bank erosion,  
22 we are losing our historical heritage, archaeological  
23 resources; and that was a comment I made earlier.

24                           So I believe there's a cumulative impact, because  
25 we only have a finite amount of these historical resources,

1 and that they continue to be lost.

2 MR. HOGAN: Norman.

3 MR. SIMS: Norm Sims, AMC.

4 If I could just ask for a clarification from John  
5 Ragonese and John Howard: When you did your archaeological  
6 survey for the PAD, how far back from the riverbank did you  
7 look?

8 MR. HOWARD: We haven't done one for the PAD.

9 MR. SIMS; Oh, I'm sorry.

10 MS. VERVILLE: But we're proposing to do one.

11 MR. SIMS: And how far back would you be looking?

12 MS. VERVILLE: That remains to be seen. We  
13 haven't scoped a study yet; it's something that you  
14 generally negotiate with the SHPOs. In this case, for  
15 FirstLight, I think probably that would fall to the SHPOs.

16 MR. SIMS: I think TransCanada did a preliminary

17 --

18 (Simultaneous discussion)

19 MR. HOGAN: Folks, the court reporter is having a  
20 difficult time --.

21 Can we get the response of the scoping --

22 MS. VERVILLE: Sarah Verville from TRC.

23 FirstLight has not yet done it's Phase 1A archaeological  
24 surveys. It proposes to do so in its PAD proposals. We  
25 haven't scoped the study yet; that's the next step. We will

1 be consulting with the three state SHPOs on the parameters  
2 that they feel is appropriate for -- sort of the width of  
3 the survey area.

4 MR. RAGONESE: Well, it's two stages. When  
5 you're doing that archaeological research, you're really  
6 focusing on areas that your project operations could be  
7 impacted. So for example, we have a two foot -- generally -  
8 - fluctuation zone and a reservoir, but we have a 5 foot  
9 overall range. We would look essentially at that area where  
10 our project could impact. So that's, let's just say -- I'm  
11 not trying to limit it to 5 feet, but that would be how you  
12 describe it.

13 Or similarly, if you had a recreation area that  
14 has a trail, you look at impacts that that trail might have  
15 on a resource; or if you were removing a piece of project  
16 boundary from your project, you need to look at the impact  
17 of removing that project boundary on historic and culture  
18 resources.

19 So those are the kinds of things you do. Some of  
20 those you during the survey, some of those, those are the  
21 things you do in terms of what you have for an agreement to  
22 deal with cultural resources going forward. So at some  
23 point down the line we want to change the bronze door on the  
24 powerhouse, we go through all kinds of analysis about  
25 whether or not that bronze door is a contributing factor --

1       you know, the historic structure, and what are your options  
2       for mitigating, needing to modify or fix the bronze door:  
3       Do you buy a plastic one that looks bronze? Do you have to  
4       make one out of bronze? You know, all those kinds of  
5       logics.

6                    But those are how you do. That's the treatment  
7       aspect of the culture survey.

8                    MR. SIMS; But you did do some sort of survey?

9                    MR. RAGONESE: Correctly, we did.

10                   MR. SIMS: And basically that was a riverbank.

11                   MR. RAGONESE: It's the riverbank or any other  
12       activities like, say, recreation.

13                   MR. SIMS: Thanks. I was just asking for  
14       information.

15                   MR. RAGONESE: When we have project land that's  
16       fee owned, we also look at any resources that are on the  
17       project land, because you own it, it's part of the project.

18                   MR. HOGAN: Andrea.

19                   MS. DONLON: Andrea Donolon, Connecticut River  
20       Watershed Council.

21                   I would just encourage the companies to look a  
22       bit beyond the water range. Although there are multiple  
23       causes to erosion, you've heard a lot about the erosion  
24       issue, and as described, the 30s, what change of bank over  
25       the course of forty, 50 years.



1                   So in a 40-year license, it may be affecting  
2 quite a bit of range, I guess the operating range of the  
3 river.

4                   MR. RAGONESE: That's a good point, because  
5 typically in a historic resources management plan you have a  
6 monitoring requirement that goes through the course of your  
7 license. So as things might change, you are typically asked  
8 to follow those changes through the course of your license.

9                   But generally speaking archaeologists, state  
10 archaeologists, they don't want you disturbing things that  
11 you don't --. So to project that you might impact this  
12 field 30 years from now is not likely to want them to have  
13 you digging in there.

14                  MR. HOGAN: Anything that we didn't cover that  
15 folks would like to raise as a cumulative effect concern?

16                  No? I think this meeting was very helpful. I  
17 really appreciate everybody's time. Hope we'll see you  
18 tonight at 6 o'clock, same place, and we'll be talking about  
19 the Turners Falls and Northfield Mountain projects tonight.

20                  We've got a question in the back?

21                  SPEAKER: I apologize for coming in so late and  
22 missing the discussion, but did you talk very much about  
23 recreational use of the river?

24                  VOICES: Yes.

25                  SPEAKER: May I just make comments?

1 MR. HOGAN: Yes, absolutely.

2 Folks, if we could be quiet for a while.

3 SPEAKER: I spend three, four, five days a week  
4 on the river.

5 MR. HOGAN: Hold on a second, sir.

6 We have a court reporter, I want to make sure  
7 that he can hear you, so your comment gets recorded. So if  
8 we can get your name.

9 MR. McCOOL: My name is Donald McCool.

10 MR. HOGAN: Spell the last name for us.

11 MR. McCOOL: M c C o o l.

12 MR. HOGAN: Actually, could you step right up  
13 here?

14 MR. McCOOL: Yes.

15 Sorry to keep you all here.

16 I do a lot of rowing on the river.

17 MR. HOGAN: Any particular reach?

18 MR. McCOOL: Between Sunderland Bridge and  
19 basically the rail trail bridge here. So I'm there three,  
20 four, five days a week from August and September into  
21 October. And that's only when I can do it. There are many  
22 times when I can row between say second island and third  
23 island. There are always times when I can do a whole piece.  
24 And of course there are other times when the river's  
25 flooding and you can't do anything rowing.

1                   But I don't know, this is something that is an  
2                   issue with you; it's really annoying to see the water come  
3                   up about four or five feet in the afternoon, and -- or go  
4                   down four or five feet over a period of time and not be able  
5                   to use the river recreationally for myself, and anyone else.

6                   I just think that needs to be a consideration.  
7                   The fish and the riverbanks. There are also people who use  
8                   the river.

9                   MR. HOGAN: Thank you.

10                  MR. McCOOL: You're welcome.

11                  MR. HOGAN: Will you be attending tonight?

12                  MR. McCOOL: What time is it?

13                  MR. HOGAN: At 6 o'clock, right here.

14                  MR. McCOOL: Right here.

15                  MR. HOGAN: That's up to you, but we are  
16                  certainly interested in hearing everybody's concerns and  
17                  issues; the whole purpose of these meetings is so that we  
18                  can craft our environmental analysis to address the issues  
19                  that are important to the local community.

20                  Thank you very much.

21                  (Whereupon, at 11:40 a.m., the hearing  
22                  concluded.)

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Document Content(s)

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