

Transcription
of the Mill
Pond
Meeting at
Hampton
Town Hall

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2013

The presentation by Stephens Associates to the public was transcribed by
C. Stellmach.

Full report
available

Mill Pond Abutters Meeting July 18, 2013 - BOS room

Audio length 1:27

Keith Noyes, Director DPW- Good afternoon, I'd like to thank everybody for coming today. My name is Keith Noyes, I'm the Hampton Public works director. The purpose of this meeting is to engage people that live around or own property that abuts the Old Mill Pond in the process of addressing the poor condition of the dam.

With us today, I'd like to introduce the people we have: **Bob Stephens** from Stephens Associates. He's a head engineer. **Jim Turner**, also from Stephens. **Chris Jacobs**, my deputy director. **Sally Soule from DES, and Kevin Lucey, and Deborah Loiselle.** (one member of DES arrived later, Cheri Patterson , Supervisor Marine Programs, Marine Fisheries Division, Durham, NH Reg. 3)

I sent a sign-up sheet around, if everybody can make it a point to signing in. So, like I said, we're going to be discussing the dam. We have some presentations and then we're going to turn it over to you to ask any questions and provide input.

Jim Turner (Stephens Assoc.) explains his poster board showing the general process of what people go through when they own a dam with the state, and the needs to repair, and the options they consider. I will start off with the general process and then we're going to talk specifically more about Old Mill Pond dam. For private and municipally owned dams in NH, they are registered with DES Dam Bureau, they're classified under regulations as to what constitutes a dam, based on its height and its impoundment sizes. The hazard classification of a dam is assigned by DES, by the Dam Bureau, based on the hazards downstream: buildings, roads, proximity of the structures, the size of the dam, what might happen if the dam were to breach. So they consider all that in reviewing the hazard classification and assigning it to a particular dam.

DES does regular inspections of the dams based on the hazard classification. I should say the hazard classifications range from the lowest hazard to high hazard:

DES Dam Ratings 2013
AA - Non Menace
A - Low Menace
B - Significant Hazard *
C - High Hazard

The inspection frequency is dependent on what those hazard classifications are. The bureau sends out staff to do the inspection. They produce an inspection report that summarizes their observations. It compares previous noted deficiencies of the dam. It may compare new development, changes in hydraulics. It may include some analysis of the hydraulics from initial analysis, depending on what's been done in the past.

The result of that inspection is in the inspection report and they will issue a notice to the owner. That is a letter of deficiency (LOD). You might notice it summarizes what they've found. It's a legal document, correspondence between the Dam Bureau and the owner, and it usually gives them directives of things they need to do with certain time frames.

Those directives will depend on maybe minor things, clear some brush, or maybe some major things like ordering the owner to further evaluate the dam and evaluate its condition, evaluate either through analysis of its hydraulics, its structural characteristics, and then outline a plan for addressing those.

If the letter of deficiency (LOD) is ignored ... there are a lot of owners in NH that defer that for whatever reason and they end up not being cooperative. And if the owner ignores the LOD, it can result in an administrative order. Or if the deficiencies are particularly urgent, and if the bureau notes that the dam is getting ready to breach, they will immediately order the owner to do something. But the administrative order is a little more severe than the LOD. It's ordering the owner to address the dam.

The deficiencies that may come up are maintenance or planning deficiencies -- like an operation maintenance plan, emergency action plan -- the regulations that the dam bureau operates by. The rules administrator has requirements for the operation, maintenance, and emergency action plans, depending on the hazard classification.

And then other deficiencies that they may come up with are structural or hydraulic deficiencies. Structural obviously are what you can see, if the concrete is falling off or cracking. Hydraulic deficiency is if the dam overtops the design flood, and they run some calculations and it shows it doesn't have the hydraulic capacity to pass what the regulations require as the design flood. Those would be the deficiencies that the owner would have to address to bring the dam up to compliance with the state regulations.

After the LOD comes out, the owner has to address the deficiencies. Often they will have to engage a qualified consulting engineer, particularly for the structural and hydraulic issues. Some of the planning may require analysis by a professional engineer. Depending on what those deficiencies are, again, there's a whole range, but usually the path is that the owner evaluates his alternatives, they evaluate "Do I repair the dam, is it relatively simple repairs, do I have to maintain the dam, cut some brush, do some planning?". Do they need to do reconstruction? And reconstruction has a definition in the regulations that relates to changes in the structural configuration, changes in its hydraulic capacity or discharge capacity, changes in height. Or decommissioning is always an option that is available. As a result of that evaluation of alternatives, usually some concepts are generated, some cost estimating, initial cost estimating, is done, and then the owner can make an informed decision on the options for addressing those deficiencies and the range of costs.

The owner then selects an alternative and then design of that alternative and permitting proceeds. Back in the previous stage, usually a conceptual design is . . . say the repair might look like this, the reconstruction might look like this, or the decommission might look like this. Once the alternative is selected then a more detailed analysis and design is done from an initial design to final design, final plans, and then permits are applied for and the permitting processes. Once that's concluded then the construction contract is usually let, construction proceeds. There's maintenance of that construction contract by the town and usually by the engineer to oversee and observe the construction. Then the dam is repaired, or whatever the case may be, and then the process starts all over. The state continues its inspections and hopefully then anything is minor.

As an overview of the process, this is what every dam owner has to go through. With thousands of dams in NH and many of them are old "fill" dams and there are lots of dams with issues.

Having said all that, some specifics for Old Mill Pond dam:

The town owns the dam.

It's a class B, significant hazard dam.

Because it's a significant hazard dam, it has an inspection frequency of at least every four years by the Dam Bureau. And the last inspection by the Dam Bureau was in May 2012. They then issued an inspection report dated July 2, 2012. As a result of that inspection, they then issued a LOD dated July 11th, which gave the town some requirements or some maintenance, as well as some planning and some structural and hydraulic deficiencies that they noted. There's been no administrative order to date, so far, as the town has been in correspondence with the Dam Bureau, in consultation with what needs to be done, within the time frames that are available, and with what the town needs to go through in the process to evaluate the alternatives. So the state has not issued an administrative order directing them saying that they "shall" do things on a certain time frame, other than what's in that LOD.

The deficiencies that have been noted by both DES, the Dam Bureau, and by Stephens Associates when we looked at the dam about a month ago:

- The dam is **hydraulically inadequately equipped**, doesn't have enough capacity to pass the 100 design flood that's specified by the regulations on ____ hazard classification.
- The issues with **seepage**, water that flows through the dam itself is seeping through the soil, through the boulders, potentially through the foundation. There are numerous tree stumps on the dam. I'm sure everyone knows there used to be some pretty large trees there and all those tree stumps remain.
- There's **variable crest elevations**. What that means is that the embankment - which is the majority of the dam there - has an undulating surface and that undulating surface gives a greater risk in larger floods, and in some places the water would overflow and in other places still retain. So it's an uneven level that it can impound water.
- There's a **lack of erosion protection** around the spillway. The sides of those embankments where they come down to the spillway have been eroded in the past and there's not much there for erosion protection now.

The town has hired us, Stephens Associates, for consulting engineers. We started our work in May of this year and our scope is to prepare an initial study of alternatives. So we are charged with evaluating the alternatives on repairing, reconstructing or decommissioning the dam. For us that entails we review the available information, reviewing files that the town has and DES has so we can get an understanding of the dam's configuration, how it's constructed, and what the problems are.

We've inspected the dam so that we will also have an understanding of what the issues are. We've done some hydraulic evaluation, hydrology and hydraulic evaluation, that's used for both the existing dam so we can understand where it's at and then will be used for evaluation of alternatives, of the repair, the reconstruction that may be needed to improve hydraulic capacity, as well as, if it were decommissioned, how the hydraulics would work in that scenario.

We've done some:

- a. initial review for the commissioning for the historical and sediment aspects, and for infrastructure.
- b. some initial review for fish and wildlife.

We're charged with coming up with some concepts for repairs, to address insufficiencies, concepts of decommissioning, and some initial cost estimating, as well, to get the town a sense of what they're looking at for each of those options.

And that work is in progress. We're expecting to be completed somewhere around September this year.

(1:13:46)

The general alternatives that the town has is:

1. to do nothing, which is not likely feasible that the state would accept that, giving what they've noted and what we've noted. A "do nothing" alternative would not last.
2. repair or reconstruct substantially means something similar is to improve the dam so it could impound water and with state regulations the reconstruction would be a little more involved. And it is primarily related to any increases in size or discharge capacity. Those are definitions that apply to the state regulations that have specific meanings, but for our purposes, repair and reconstruction essentially means the same thing.
3. decommissioning
4. Town could relinquish ownership, someone else could take over the dam if the town worked out some agreement.

The town then will need to make a decision as to what it wants to do, whether in selecting one of these alternatives. And the schedule for that is sometime this winter, after they've gotten our report, they've had time to digest it, and gotten all the input from various parties. They can make a decision. Then depending on what that alternative is that's selected, design and permitting would probably happen 2014 to 2015, depending on funding the alternative selected permitting that goes along with each alternative. That would lead to construction sometime 2015 to 2017, again depending on which alternative is selected, the permitting process and the funding available.

(1:11:51)

That's the general process of what virtually all dam owners go through. Mill Pond process is substantially the same as everyone else, but there's always specifics to what each dam has as unique problems and challenges.

(End Jim Taylor - Stephens Assoc.)

Keith Noyes: Thank you, for those who just joined, please sign the sign-up sheet... As Jim mentioned, one of the alternatives that needs to be looked at is the decommissioning of the dam, which essentially means the removal of the dam. And due to the environmental aspects of that consideration, we've invited members of DES from the Dam Bureau, Fish and Game to come in and respond to questions. I certainly appreciate the abutters of the pond who have a concern with that option and I want to reassure you that there's been no decisions made. We're not leaning in one direction or another. The idea at this point is to have this engineering firm further investigate these options that they've outlined, what it costs for each one of them, and also know what the pros and cons are. And then at a later date,

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sometime this fall, we'll do another presentation...before the Board of Selectmen and you all will be invited to that meeting. It will be a public meeting to have a general discussion for the selectmen who ultimately, I believe, will set the direction of where we'll go. Certainly anyone of these options, including the do nothing option, and when he mentioned that, it's not as simple as saying "do nothing." We literally can't "do nothing" at this point, we do and we'll be facing fines and an administrative order from DES. This could be substantial, so we did want to put that down just because in theory it is an option, but the town's going to pay the price one way or the other.

So at this point I'd like to ask for any of you who would like to comment, ask questions. (Turning to members of DES) Do you have anything you want to say in advance to their asking questions. **Cheri Patterson is from Fish and Game**, so we have someone from Fish and Game, someone from the **Coastal Board (Sally) and (Deborah Loiselle) River Restoration and Sally Soule is with Watershed Assistance** section which provides funding for various water restoration projects throughout the coast.

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Opened up to discussion: (being recorded on TV and will be replayed)

Keith Noyes - The comments and questions you ask will be taken into consideration in the decision making process. This is just in the initial stage. We're not leaning one way or the other, but I thought it would be important to invite you all to be involved early on in the process.

(1:07:57)

Candy Stellmach - As a basic idea, what is your opinion on the value of Mill Pond being a reservoir for all the water that comes down stream and how much water are we talking about? . . . As a holding bin for whatever rain or high water table, whatever happens to prevent flooding."

Bob Stephens - We've only completed the hydraulics and hydrology, but we're well into it. It's nearly complete, but most of our analysis and analysis of ---- before us has indicated that in higher rainfalls that inflow is approximately the same as the outflow, so it really doesn't provide meaningful flood staging right now and I'm not sure if it ever did.

Candy - If it wasn't there?

Bob Stephens - If it wasn't there.

Kevin Grondin - I'm one of the abutters, Kevin Grondin. I'm in the development business so I'm not in fact a rookie. But I would hope that the Board would consider the fact that this is actually the last fresh water prior to its going out ... under the road which leads to is what is termed "brackish (water), salt and fresh mixed. With the lack of attention to the entire pond and the settlement, we no longer have much of a volume held for siltration and filtration of the somewhat horrible pesticides and every other waste product that's coming from now a much larger section of Hampton than it did prior.

There's only a couple of outflows for almost the entire northern half of Hampton and up to Rt.1 that go out half through our way (Mill Pond) and half through what we call the "Cranberry area up to North

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Hampton.” ... But that actually originated from Hampton as well. So the only thing I would want everybody to consider is that we have a very unique pond, not river. It was named Mill Pond for a reason and it's been there for quite a while.

With the lack of attention to it, it actually, as we all know, has broken down, but this is a dam that has been there for a dam while longer, excuse the expression, than any other in the state of NH. It has been a working dam prior to ... the historical angle of that as well, and this particular dam was built longer than any of us and it has never had attention by ... now the town owns the spillway and all, but there are much easier fixes than people are trying to make, like we have to rip this out. Well if we rip this out, we have an extremely large problem of somehow we still have to change elevation, getting down into the other side of the road, which is Meadow Pond.

Meadow Pond itself is very much different than Meadow Pond was 10 or 15 years ago. It really actually all started from the dam being removed and not holding back and filtering the silt, and if you look across High Street the silt is quite obvious. It's changed the entire other side of the road and that I know is another issue with drainage these poor guys have to deal with, coming from many different directions. But this is actually a much larger picture . . . just that we would just want to pull out . . . We really would like to certainly tell you that we're very honestly concerned that we keep hearing the decommissioning of the entire pond. It just doesn't make sense.

Because I live on it and monitor it more than anyone else, I will tell you that I would be baffled that the state of NH or the federal government, also Fish and Game, or this whole Shoreland Protection Act would not be taken into consideration throughout this whole thing. Because it is the last fresh water coming down, it is the last place to hopefully NOT send all of our waste products out to the Atlantic Ocean. This . . . may be a very large problem, which we all know and financially burdensome, but I'm not sure that you're doing anybody any favors by just dumping all this out into the Atlantic Ocean. If we're already dealing with having to now filter out nitrates coming out of the septic plant over on the other side of Winnacunnet Rd., which all does tie together and goes right out the river and into the ocean. So it was made part of the Shoreland Protection Act for a reason. It is something I would hope everybody would consider in that light, and we certainly would rather have a beautiful pond there than any kind of river or stream which would . . . I don't see how that would help get rid of the outflow any different than it does now, if we were able to monitor it some and remove a few boards and drop a few million gallons prior to a large rain, which would be something that the public works department would be more than happy to do. I'm certain because it would be safer for everybody in that light, but that pond has been around here since 1700s and I'm not sure that we're going to rest easy until we make sure that the pond remains. Thank you (applause).

Jay Diener - (Conservation Commission) I have a couple questions and it might be helpful to people here to get the answers. I understand that your study is not completed yet, so you might not be able to give complete answers. But number one, could you give some impressions of what the impact of dredging the pond would have on its flood storage capabilities . . . And number two, could you also just what the impact of decommissioning the dam might have on wildlife and vegetative ... in Mill Pond area.

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Bob Stephens - We haven't been tasked with studying the hydrology to the level of detail that you're talking about, but it's a relatively small storage (area). If the pond is full then the level of sediment will have very little effect on its flood storage without draining it before flood. If we increase its storage capacity by dredging, it will have more storage capacity in a flood, but only if the pond is drained prior to a flood. So and that would be an operational issue for the DPW or whoever the town decides will be the operators should that path be chosen in the future. I will say that most dam regulators frown on that because generally in a flood, folks in DPW have lots going on and ponds don't always get drained. And in some jurisdictions that we work in, it's simply not allowed to rely on operation to turn an impoundment prior to a flood to help it meet the regulations for past hydraulic, past standards.

Deb Loiselle - (addressed the various roles of each DES member on the dais) I work in the dam bureau, with safety engineers. I am not a dam safety engineer. **Chuck Corliss is the engineer** of record for this particular dam and he's been working very closely with the town for many years on this particular dam. I'm housed in the dam bureau and when the dam safety engineer or a dam owner contacts me in regards to exploring the option or if they know they want to move forward with the option of removal, that's when I get involved and it's simply to provide information, guidance, technical assistance, identify potential funding, identify additional partnerships to these folks that are here today (dais) depending on the site and just help them through the process, 'cause it can be a very daunting process. What my function is NOT is to tell the owners what decision to be made, simply here as a resource. So just wanted to let you know what my specific role is. And then as far as, before we go onto wildlife and vegetation question, we talked a little about the operation. It's my understanding there's no operable gate or flashboards on this dam. Is that correct? So there's not the option to do that in advance of a storm. There are, many owners who have that, but in this situation there is not. So I just wanted to clarify that, so that would not be an option in this particular situation for this dam.

So far as wildlife and vegetation as Bob and Jim (Stephens Assoc.) have explained, they're going to be doing a study. They're right at the beginning of this study. In general, I can speak, you know, as far as that, but specifically we can't do that until we get, until we get the information. And I'll leave what Cheri (Cheri Patterson, Marine Fisheries Division) addresses to the specific fisheries issues, so I'm happy she's here to do that. She's very familiar with this particular area and the fisheries concerns in this area, but typically with a removal and impoundments, you see warmer water, you see higher levels of dissolved oxygen in this area. So you get warm water fisheries. If the dam were decommissioned or removed, you'd see likely in transition to more cold water species. So you are going to see a species transition. It's not that fish are all going to go away.

Again, I'll let Cheri speak a little further on that. In general, other wildlife, a lot of times we see the same wildlife that frequents the pond staying in the area. If it happens to be species such as loon, which I don't think are in this situation, any kind of ducks, that type of thing, they're going to seek other areas now. So there's going to be a change. What we do see a lot, I've seen a lot on projects similar to this, if you see Herons in the area, they tend to come back. They won't completely go away. So there can be a transition, but there's not an elimination of all wildlife. (54:28)

And I think that's something that people are very concerned over and rightfully so. Vegetation, that's going to depend on what they find with the hydraulic modeling. How much of the dam would be proposed to be removed, the dam, the spillway? Are the entire dam's length is 300 feet? My working assumption at this point, not having a lot of information, is that the full 300 feet would not be proposed to be removed, it would likely be a portion. So dependent on that is going to be dependent on what the ultimate stream would be, if you were to see removal. There's a lot of seed banks in areas that do become dewatered. Rivers and banks tend to heal themselves pretty quickly. Usually what consultants do and others working in partnership will determine whether that seed bank is enough. Are there areas of concern, say for erosion, that they say should be stabilized immediately vs kind of waiting a little bit longer. So that is all part of this whole process and that is something, that as I understand, will be considered and it's typically considered in any dam removal project.

And the gentleman who just came up talking about the sediment, that is something is evaluated any time there's a potential removal. There's a whole process with the sediment evaluation, both quantity and the quality are evaluated and it's typically a phasing process, so I don't know exactly what's in the scope of work at this point in time. Probably Keith and Bob will talk a little bit further on that, but our office water quality section and environmental health program will be actively involved with that process.

So Cheri, I think, is appropriate to talk about the aquatic species in this area.

Cheri Patterson - As Deb explained, you have to see this ____ shift in . . . We have tested or sampled this system a couple years ago and it's definitely a warm water, it wasn't the impoundment of Mill Pond . . . it was definitely warm water species. So what you have . . . is the same warm water species that are seen further up . . . We do plan on getting into the system in August and doing some further sampling and taking some temperatures and . . . to see what the impoundment looks like, as well as Lamprey Pond . . . and the Nilus Brook itself.

Kevin Grondin - You'll find that it is a little bit a different sort of pond than you might think. We have the eight year (migration) of elvers that actually come up there and we also have the wintering otter. We do have quite a few visitors come and go.

Cheri - DES - Wildlife will continue to come and go. That is not unusual. They do adapt. As for the elvers which are juvenile American eels, they're not every eight years, they're annual. They come back on an annual basis. And again, they live in either the river range (?) system or an impoundment system. They'll be there regardless and with them we also do find Diogenes (sp?) fish species which are species that commute to ____ environments in order to live out their entire life cycle.ⁱ

So the fish adapt to an impoundment situations or river ____ situation when the impoundment is gone.

Norman Hurley - A few questions, some for DES, some for you folks who do the engineering. DES, as I look back over from the history ____, this was classified as an AA and then a low risk, all the way back to 2007 and now it's, I'm hearing, a High Risk or a Higher Risk. I'm trying to figure out what made you change, and also part of the comment that "If you do nothing," essentially we're in this position because we did nothing for a number of years and allowed a lot of the sediment to actually fill into the area. I

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understand it's a stone and earth dam, unless it's maintained, unless we do something to keep it up, it's eventually going to erode away to not holding anything. But it seems that because we've done nothing over the number of years that we've gotten ourselves into this situation we have now. But how do we go from an AA to a Higher Risk in a short period of time?

Cheri? DES - I probably can't answer that fully, but as Chuck Corliss isn't here, it's the downstream roadway that has increased the classification. I don't know if in the past there was something different, based on previous evaluations and hopefully you can provide insight on that.

Keith - I'm not 100% sure, but it's my understanding they actually upgraded the classification systems, do you know if that's true or not?

Kevin Lucy - One of the justifications in the inspection report was that they upgraded the regulations. I don't remember the date exactly, but maybe early 2000s, I think. And so they changed the definitions of the hazard classifications and as a result of that, in their recent inspection they re-graded it to a Significant Hazard Classification.

Norman - Well as recent as 2007 it was actually a "low class" It didn't give us an A or B. I think the next question, a couple of other questions, is Historic Value part of your evaluations for the requirement of evaluating the dam, removing the dam . . . is this going to be part of your evaluation as well?

Bob Stephens - We look at the dam and its surrounding as an historic resource, yes that will be part of our report. In terms of a monetary value, no. That wouldn't be part of it. I wouldn't know how to put a monetary value on an historic resource, but our part will discuss the historic information that we were able to find and that impact. . .

Norman - Next, would the town be considering for critical infrastructure upgrade through grants from DES? Let me give you a little background. I was 16 years the emergency management director in Kingston and several times on a lot of flooding area we actually upgraded our areas, fixed water problems, dams and such with grants from the DES in order to get some repairs. I understand one of the big problems we have here are there are no ____, but is this something you would pursue through DES or through the Homeland Security as Critical Infrastructure, whereas, I assume that High Street is a critical infrastructure evacuation route from ____ for an emergency response plan, things of that nature. Is this something that we've tried or looked at in order to get this repair?

Keith - Yes, I actually in fact submitted to FEMA for a hazard mitigation grant with the overall aspects of the dam for repair or doing any kind of emergency measures. And actually the only thing that was eligible involving any of those funds was the potential of moving that house that's there at the bottom of the dam, right there next to the gristmill,(Mailloux property) out of there, demolishing it. That was the only thing that could have funding available for it. I submitted a grant application to do that. But as far as my understanding, I looked at this document with DES and was looking at some other agencies. There is no money available to assist the town with the maintenance of that dam, to do anything with the dam itself. (44:28)

Unless we decommission it and if we decommission it, there is the opportunity for some potential funding. Chris did have an answer to your question about why ...

Chris - This is right from the report. The dam was formerly classified a low hazard dam. This hazard classification was based on now outdated classification rules applied to the downstream NH Rt. 27 crossing. This crossing does now apparently justify a significant hazard classification under the current guidelines due to Rt. 27 being overtopped during a 100 year storm ...

Norman Hurley - I guess when you follow up with that, is it a problem ..., could we have increased the culvert that's going under Rt. 27...? The topping, I know is a spillway and the culvert is a major problem of why. A hundred year flood ... other dams started having problems very similar and we (town of Kingston), very similarly, followed up with some of these issues.

Chris - You'd probably will have to move or relocate the gristmill and the house that Keith is talking about, because the same report said this review by DES identified three separate structures that are currently in line with a classification of significant hazard dam. And ... point out. The present structure located immediately downstream on the bank's left side embankment, right as you face it, and the downstream old mill structure which straddles the dam's outlet of the Nilus Brook and the downstream Rt. 27, so all three led to the significant classification. Only the Dam Bureau can determine the removal of one or more of those...

Norman - For a follow-up to the DES, in the event that these hundred year floods, we're still going to see the same amount of water coming across in that same area. The dam pretty much at that point in time was already getting old ... Removing the dam, is that going to change this?

Chris - I can't answer that.

Keith - I did want to mention, just address your comment about the last prior maintenance to the pond itself. But I think that everybody realizes this, but if you don't you need to. Unlike most ponds around that you see that's owned by the town or by the state, that is actually a privately owned pond. The obligation to maintain that would lie on the abutting property owners. The town only owns a limited portion of the dam structure itself.

Bob Stephens - Can I say something on this question. It is possible to approach DES on the dam classification, and your questions are excellent ones. Changing the culvert downstream may get their attention. There is the matter of the house. In dam "vernacular" everything left or right is left or right of the stream as you face downstream, so the house to the left of the gristmill facing downstream is downstream of the dam. Now you may be able to replace the culvert, remove that house and argue that the mill is part of the dam. It's not occupied. And you could make that case with DES. For instance many houses are located on dams. They're mill houses. And they're gristmills, mill houses, gate houses. These structures are located, a lot of them have burned or been restored, but many of them are still found along these dams all over the area. And I think there's a chance anyway you could make a strong case that if Rt. 27 culvert were increased in capacity and the house to the left of the gristmill were moved or abandoned, that they could reclassify the dam. (39:41)

Norman - ... On the DES side of this, is there currently anything under the DES in grant form other than what I talked about earlier on critical infrastructure? Are there other areas we can take a look at? Is reconstruction of the dam and (including) gates maybe one of the problems that we could use to relieve the water, the back water pressure when the dam fills up? Would that also help changing the classification of the dam?

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Bob Stephens? - Would adding a gate, is that your question? If repairs are made to the dam, a gate would be added.

Norman - And would that require things such as a fish ladder, things of that (nature)?

DES - Our recommendations would be to advise upstream and downstream fish passage . . . That would be the primary ... species that would be utilizing ...

DES - And I would just add in contacting DES, I would highly recommend that you contact Chuck Corliss and you can do that either by phone, email or by a letter. If you want to talk to me after the meeting, I can give you his contact information.

Candy - There are a few members of the Deacon Tuck Gristmill Committee here and for four or five years we've been collecting the old documents from DES, all of the previous people who have worked on saving the pond and the gristmill, and through those letters between DES and that group, it wasn't so long ago that they measured the drainage area for the pond was 1,500 acres. That's the amount of drainage that goes in there into that pond. And the dam that was there, has always been an old fashion style and it had stoplogs. I'm not sure if it's the town who came in in 2005 or 2006 and removed the stoplogs and drained the pond entirely. It was dry with fish flopping on their backs. And since then the stop logs have not been put back, so to say there is not a gate there is because of the town. I'd like you to address that, if that was put back where it was. We had three circles of stones that trickled the water down with the stoplogs, so the changes are because the town first of all took the gates out and then did nothing.

Chris - The stoplog removal was a result of DES order back in the 80s. Again the reclassification system to de-hazard the dam at that time. I remember seeing those documents and I presume they're in historical archives. There has been previous action involving the state down to the town. The town, if when they did it, because Keith and I weren't here, was in response to what they were ordered by the state.

Keith - Other comments, questions?

Bob Lindinger (re Barkley property)- You just mentioned that private owners own the pond and it's up to them to maintain it. If the private owners wanted to go in and dredge, would that be feasible?

Keith - I think from the town's standpoint, it would be an issue for the conservation commission permitting issue, you know. For DES it would probably be an issue. I don't think the town would, outside of the conservation commission, would have an issue with that. But you do have the right to do that.

DES - And you would have to obtain a permit because you would be working in the waters of the US. If that's something you would be interested in pursuing, I'd recommend coordinating with _____ and also making some initial contact with the wetlands bureau at DES.

Bob - Another question I had, if it's decommissioned, the ultimate outcome I guess is Nilus Brook will seek a natural course, whatever it decides to do and then end up at where the opening is at the end to go over or under High Street. And my question is, I've noticed on Nilus Brook beavers continue to set up dams, so if a beaver comes along and puts back the dam, what happens then? Does the state Dam

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Bureau clear that out periodically? Or is that mother nature putting the dam there whether you want it there or not?

DES- The Dam Bureau doesn't regulate beaver dams (laughter). Essentially they can do what they want.

Keith - Well we've had some issues with beavers down where it stands now and we've had someone go in there and remove them. They were damming up the outfall. I don't know how that would play out in the long run where they would set up the dam. If they set up the dam further into the waterway, whatever, on private property, it would be up to the private property owners to make a decision what they want to do with the beavers. (33:43)

Bob Lindinger - So if the Barkleys want a nice pond, they should just get beavers to build a nice dam. (laughter)

Ed Mailloux - I own the property that is downstream of the dam. Someone from the town asked me if I'd be interested in selling that piece of property. I'd rather not, but it's acceptable. I only live there part time, I'm a part time resident over there. But I encouraged the town to save the dam and the pond. I mean Kevin and Kim's kids skated there when they were kids, my family grew up on the pond. They skated there. There's always been wildlife. It's a great place. I'd hate to see it go away.

Candy - Back in 1970 or 80, one of the plans that the town was working on was to remove the emergency spillway that is behind Ed's house and put it on the other side of the gristmill, and then make a stream there to go right into the main stream. And that was never followed up on. When, before Ed's house was there, that emergency spillway was put there because there was a frog pond there and it trickled down into the stream. So whoever allowed that house to be there, and that'd be the town, once again stuck their foot in their mouth, and they should be asked to put the emergency spillway on the other side and leave Ed alone! OK Ed? (laughter)

Keith - This is great. One of the reasons I wanted the engineers to be here was to listen to any of your ideas you may have and bring up things that ..., because Chris and I haven't been around that long, that we don't know about. It's important that our engineers have any ideas or all the information available, because we're really here to do the best for the town, including abutting property owners. We're not working against you. We're on the same team.

John Mason - I'm here on behalf of (my brother) Karl who owns a piece of property that's part of Mill Pond. A couple of things I don't fully understand I guess ... The flood in whatever year it was that topped the road, High St., did it top it because of volume of water coming down from the mill or was it topping it because the Meadow Pond couldn't dump out into the salt marsh, because of the sheer volume of backflow? Because it's pretty flat once you get down to that level and there's always a flood at the lower section of High St. every year practically. I was just wondering if that was understood as to what ...

Chris - The photos I've seen show the water stacked up on Mill Pond. The gristmill side. But purely you have to recognize from a hydraulics perspective that if Meadow Pond was up full past its capacity, the water obviously had no place to go. So at that time in '06, with the moderate rain that we had, we all experienced that it was a combination of that.

John - The previous gentleman was asking something similar, I don't want to repeat it, but I don't fully understand it. I think he said the amount of outflow in a significant rain event the inflow coming out... So the dam is simply slowing some water flow and not actually holding any back? So I guess I'm not fully understanding. None of us ... the risk of the dam, even as it is today, that what's coming in is going out immediately in terms of heavy rain falls.

Bob Stephens - If I understand your question, the difference between inflow and outflow would be storage capacity. But the reservoir already has water in it, so if the inflow changes the outflow changes, but the storage capacity behind the dam may still go up. The water may overtop the spillway at a higher level and that increases the volume of water behind the dam. The problem is not during the storm, the problem is if it fails. If it fails, then all the water that's in storage goes down stream and then inflow does not equal outflow.

John - So it is holding water back even if the heavy rains come.

Bob Stephens - It's holding water back all the time, it's just not storing water during a flood. In other words, the effect downstream is the same from the water flowing in and out of the dam. If the dam were there or not there, the effect of the area downstream of the dam is the same.

John - That's why I was asking because the earlier question was asking about that culvert under High St. So that has a huge affect on that.

Bob Stephens - What does?

John - The culvert on High St.

Bob Stephens - Well, I did want to respond to your question a minute ago. There are times when Meadow Pond maybe high, in a storm surge for instance, and FEMA has described the wellness there high enough probably to back that culvert up, but there are times clearly when the culvert is obstructed by Meadow Pond and the flows are high in the stream. So there are times when Meadow Pond is going to obstruct the flow, but there are also times when it's not. And the Dam Bureau is mostly concerned about the times when it doesn't. It's perfectly conceivable that we'd get a big storm during a low tide or during a non storm surge.

John - The other question I have is if the dam gets removed and the flow now brings it basically down to the brook which effectively will never hold water back at all, and it will just flow down to Meadow Pond, what does that wind up doing to the wetlands as far as their designation, because there's a large section of wetlands, around there it's quite large.

DES - John that's a great question. And I think again it's going to depend on what they find with the modeling and how much they determine is going to be removed, and is there ground water underneath as well. I think that's something that Stephens Associates will be evaluating. And Kevin (Lucey) may be able to talk a little bit more. He works in the Coastal Program with DES and works a lot with the wetlands. So it's highly likely there will still be some wetlands. Will it change? Will the fringes change? How much? Until they get their hydraulic modeling completed, we won't, I don't think we'll know that specific answer. Maybe Kevin (Lucey) you can help them a little bit more?

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Kevin Lucey - . . . As the channel cross section changes, ... there's a chance that certain, that less land will be regulated. For instance, you could be out of regulations of waterfront property now (hard to hear).

John - Is that assessment part of what you're doing the hydrology testing, where the wetlands are going to end up?

Bob Stephens - No. What we're evaluating is more specific to the stream channel. The sediment that we think is occupying the stream channel ...

Chris Jacobs ?- You may be getting at the question, if you owned land on the backside of Meadow Pond, you have ten acres of marshland now and you take out the stream the channel becomes more defined. Does that end up maybe double the amount of wetland area? Over time possibly, but wetlands are defined basically by soil type, by plant type and hydrology - water. Those soils will more than likely continue to hold back, hold themselves a lot of water and therefore the wetland delineation line if wetlands scientists went out there is not in one year going to move down the slope but to say 50, 60, or even 2 feet, so it would be a change over time, but it would not be an instantaneous change.

Bob Stephens - To clarify as well, we will look at, as best we can, because the topography out there is very flat and it's hard to evaluate with existing information, but as best we can we're trying to determine how big the impoundment is and how big it might be if the dam were decommissioned. That is the area of it. Whether though the area is no longer under water remains wetland or not, we are not evaluating.

Chris Jacobs? - But those type of factors are slowly changing.

Frank (citizen)- . . . near Sandpiper Bay. My question is the bottom line is if you you're going to ___ that area. Has anyone looked at the impact on the ecology? We're talking about the hydrology and I understand that. I went up there to see it the other night and saw a big marsh behind the dam. Since we . . . we see, we watch the waterfowl, the birds that are migratory that come up here, spend the summers here, that are eating . . . Caught brown trout in the stream . . . So whose looking at that impact?

Keith - You came in a little late, but we've had officials from Fish and Game and DES talking about that. I think the reality is there's pros and cons. There's some things that happen that are better by doing this and then there's some negative aspects of it. . . .

DES - There'll be shifts that occur according to Fish and Game, the fisheries. . . .

Frank - So you'll study this and tell us what the impact will be? I'd imagine there would be shifts, sometimes experts get in the habit of language that's all their own. If you ruin the dam you drain a habitat. I can understand that. Everything else is kind of. . . there are shifts, I understand that ... do we really want to drain a wetland? Is there no other way to stabilize the base of this building that is no bigger than this room?

Keith - Sir, as I mentioned at the beginning of this meeting, we're looking at all aspects. This is not a foregone conclusion (21:08) We're looking at just one of five, six options that we're going to be looking at. I can envision that no matter what course we end up doing is going to involve a lot of permitting. I'm

actually, as the LOD is now, is we're supposed to actually go to construction with something in 2014. I've already talked to DES about extending that to 2015 to give us some additional time to make sure that we get this right. We started off ... dotting all the i's. So this is at the very beginning of the process. And there'll be a lot more opportunity for the public comment ... and as was explained earlier, the conclusion, before that there will be presentation to the Board of Selectmen that everybody will be invited at. I don't expect the selectmen that night are going to make a decision. Then it would involve the town meeting, any funding, any of these options is going to cost money and I don't expect they'll take it out of my operating budget, so that will incur a warrant article. So this is going to be a long process, this is just the very beginning of that process.

Frank - I've only lived there a couple of years, but when I first got there I got involved in the project that required getting all kinds of permits from the state, . . . I at first thought it was a real pain in the neck until I moved in and saw . . . I've got a couple of pictures of some of the birds . . . (Display board of 20+ species) These are some of those that migrate through this area and depending on those marshes for food. That depends on the stream and the fresh water that comes down the stream. I'm hoping that somebody is going to study the impact to the ecology and those animals. . . . I'm beginning to see it all as a system, not just a big pain in the neck. And now it's a freshwater marsh up here that feeds into a salt water marsh, creates brackish water . . .

Keith - I'll take this opportunity to say we've obtained a thirty minute video done by the America's Rivers Organization on decommissioning a dam and talking about their interviews with people that have lived through that, abutters to streams and so forth. And I plan on asking the town manager if we can put that on Channel 22 and have that play on a regular basis for you all to look at. I did watch it. It's very interesting. Not trying to sell anything. It's not a sales pitch, but it just helps explain some of those issues that you're concerned with.

DES Sally? - Just to add to that, if you go on the American Rivers website you can actually obtain your own copy. You do have to provide your information, but they promise not to sell it. . . . You can go online and see it at no cost. But I just wanted ... it's a key study of three projects around the nation. And what I find very intriguing and very helpful to you and others who are contemplating removal is the first chapter is a project in Manchester, NH. that actually happened. And as Mr. Noyes noted, this is not trying to promote removal, but it will hopefully give you a good sense, because a lot of folks are very concerned, as all of you are, you're bringing up some great questions, so this shows you, about a 10 minute video, it brings you through the process the city of Manchester went through. And then decided to remove it. It actually has an abutter who is on the impoundment who was immediately against the removal and he's actually on there, giving his two cents, now saying, "I said I would chain myself to that dam and I promised that I would, and ultimately that decision was made and I was there every day watching and now I'm happy with what the end result is." And I'm not saying that now to convince you, but this maybe just helpful for you to see some of the processes that go on with the removal.

And especially being in a community, having a community-owned dam, so it's a very similar situation. (15:55)

Frank - I understand. I appreciate both sides. I just want to make sure that people are thinking about the natural beauty that was here when we started the town of Hampton and the reason started to come here. You know you're not going to make more marsh. People say, well there's more marsh someplace else. Well this marsh is part of a system. You drain that marsh and it's not coming back. I'm just going to leave this (photos) here.

Kevin Grondin - A few more things for informational things. Two points that I'd love to make in the situation here. We're hearing for the first time about decommissioning and it seems as if both the state DES and the engineers are looking more seriously at a decommissioning than they are toward something simple like trying to repair what we have there. I know that with the variety of people just in this room, I'm quite certain we would certainly assist the town, state, city, whatever with trying to consider if they feel there are breach areas or whatnot. I mean this thing has been there for that many years and we know that dam, I guess Ed, myself and Candy's husband know, that whole wall system, where every single little leak is. There's not that many leaks. There's a couple of leaks. But I'd want the engineers to know that part of the cause of the flood was not just the water, it was that the fact that the spillway itself, and this has nothing to do with you guys, it was before your time. The spillway itself had not been maintained. Therefore with all the loose boulders and whatnot through from the entire spillway from what we would consider would be the dam, all the way through the spillway and up to the culvert was NOT maintained and created an awful lot of aeration in the water. We have pictures and we took video specifically to assist you so if you'd like to see that, we have that. This dam, the wall, there's a spillway and a dam, and the dam did not fail even in that flood. It could use repair. It has not had any repair for - call it a hundred years - to the best of my knowledge. There was something there and it happens to be on my side and I would want you to know, the spillway which I'm not sure who added that, was from a different time when there was a little trout pound there, a little pond that many kids in this neighborhood - that's where they actually fished, not in the big pond. That way they couldn't fall in or anything like that. But that was specifically designed to add just a little exhaust flavor. It being on my piece of property, I would say feel free to level that out and the dam itself did not overflow. The spillway was not maintained and created considerable aeration as it went down toward High Street and caused that nightmare of that particular storm. So it was a combination of actually errors made by all of us by not knowing that it could be such a nightmare if not maintained correctly. So I just would like you know that if you'd like to see the videos, I'm sure we can provide that.

Bob Stephens - From what storm?

Kevin - The big one, the one that flooded High St. (audience "Mother's Day, 2006.") It shows clearly, and I'm in the water business, I'd say, and I understand turbulence, and it was actually caused by rocks that . . . and once the water receded to a normal flow, they did help clean up the rocks in that spillway and alleviate a very good portion of the aeration caused by fast-moving water over rocks. It's pretty obvious in the video we took.

Keith - Kevin, I just want to assure you and others as leader of this project that my intentions and I've given very strict guidelines to my engineer to look at all the alternatives equally. I will not, you will not see me at any point making recommendations to this town. What I'm going to be doing is providing options with cost in trying to, we went out of my way to get a bid engineering firm on board. We selected them through a process. We didn't nickel and dime their cost because we wanted to get it right. So the intention here is not just to concentrate on decommissioning at all. It's just to provide the taxpayers and the citizens of this community who will all have a decision in this process the opportunity to have good, valid, credible information from which way to base their decision on how to move forward. One thing we know is we need to move forward. That's the one thing we know.

Kevin - I really want to assure you all that the abutters on all sides, I can't speak for Mr. Mason, but I would guess that we would certainly all be very helpful in assessing and accessing, whatever you need.

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Keith - And with that I want to thank everybody who did return the permission slips to allow our engineers to access your property.

Anne Barkley - I'm an abutter on the northwestern side of Mill Pond. I had some questions about some of the ___ birds and wildlife which I think could be relative to this. My family built a house in 1950 and we had herons, egrets, cranes, red winged blackbirds, cardinals, bluebirds and in the pond, bull frogs and there was an utter symphony every night of the summer. I haven't heard any of those in the past five years. And it saddens me greatly to think that they may be gone forever. I was under the impression that this area was a bird stop, a mass refuge for the birds for the migration route . This is a treasured area for them. We have some Canadian geese, a small family that lives there, but all of the other beautiful wildlife seems to be gone. The other thing that concerns me is we seem to have a huge increase in algae and growth that seems to be because of stagnation. Not just in the summer but it seems to be growing continually. I'm not sure of the pronunciation of this, phragmites. And I've heard that in the summertime or when they dry out that they become highly flammable. Is that correct?

Keith - I've heard that's the case. I'm not sure...

Anne Barkley - Just this year, I've noticed in the corner of the pond that there's a huge growth of them and this scares me quite a bit. If these become flammable, a lot of property could be damaged if there's a fire. If there is a fire and there is no dam, no Mill Pond, no water, will it be able to be extinguished? This is a great concern of mine. If this or other marsh grass is allowed to grow, or other plants to dry out, will this be a danger to other abutters or to the town of Hampton?

Keith - I would defer that to the fire chief. I think if you have him a call he could advise you on that.

Anne Barkley - I just wanted to bring that up as a possible concern of the draining of the pond or decommissioning of the dam that was once a water supply for that area.

DES - Without getting in there and seeing what the issues are and what they might be, I don't dare say a word. The algae is the result of ---- nutrients in the system. So much ... the system starts degrading, ... dissolved oxygen ... and the fish aren't there and those particular birds you're indicating . . . may not be the direct result of ...

Anne Barkley - Well we've noticed when there has been a steady flow of water that this has not occurred. But since the pond level was dropped, there's been no activity, these plants seem to be growing quite a lot. ...

(4:26)

Candy - A few points-

1. I would like to know after the removal of the Winnacut Dam in Stratham, I don't know what year that was done, but I've heard from the people up there that since the dam was removed the water can't find a good path to flow and it's flowing outward, and the neighbors are having flooding. And that's what I'm afraid of for our upstream neighbors, that they're going to find the water in their backyards if it doesn't make its way at a good pace going downstream.

2. Some of the people west of High Street almost as far up as five corners are saying they have a huge increase in the mosquitoes in their backyards. They can't even go outside and they use to be watching the ducks in the pond. The pond used to extend all the way up to Spring Head Lane area, and the dam up there and the aquifer. And we're concerned about that, because if the mosquitoes are going to start coming in more and more because of the low water level and the puddling, then that's going to be a major concern.
3. We've noticed that if you follow Nilus from Mill Pond and you go across North Shore and go up next to Quinlan Rd, I don't know how far it is, but there's a huge pond there that's been created because of beaver dams. It's between Katie Lane and the end of Quinlan. And somehow someone has built some sort of a mechanism in the middle of it and put in supposed silt removal tubes and stuff. Their pond is bigger than Mill Pond, how did that happen? And does the town even know about it? I don't know if it took place during the construction of the Katie Lane or what, but people are constantly removing beavers from that area, but it is a huge pond and we do have photos of it.
4. And as far as when the storms came through since I've been back here, 2007, the storms that I've videotaped show the water coming out of the culvert on the south side of High St. are about 80% full. They still drop down about 3 feet to go into the stream, so it's not that Meadow Pond is backing up. That's never been a problem there. And I've noticed since when I was a little kid the height of High Street has gone up at least 4 feet, so I don't know how that's affected the drainage in the area, but the culverts are much too small, even under typical storms that we have.

(1:56)

Jay Hammer - I know where High Street is, but my question is simply "Is there any requirement by the state or the town to conduct an environmental assessment prior to any construction/destruction? Yes? So there will be?"

Keith - Yes, we're doing just a little sewer project down the beach and we're only running pipes in the ground and it's taken like 9 months to do our permitting for that. I'm not sure what the term is, but there is no doubt that on a project like this there is going to be ...

Jay - Those assessments require comments not only from the abutters but anybody else, ... I just want to make sure that those questions are going to be answered.

Kevin Grondin - I'd like to thank you all for coming and just being a part of this. I guess you can tell we'd like a pond there. But it's quite a board of experts and thank you very much for taking the time ...

Keith - Thank you all for coming..... Don't hesitate to call me. ...

ⁱ American eels: see http://www.fcps.edu/islandcreekes/ecology/american_eel.htm states eels live up to 20 years in fresh water before returning to the ocean.

(Per Wikipedia, NOTE - glass eels at the transition between ocean and freshwater measure 8 cm., and Juvenile eels, which measure in length ca. 25 cm. Decline of the glass eels per Wikipedia No one yet knows the reasons, but beginning in the mid-1980s, glass eel arrival in the spring dropped drastically — in Germany to 10% and in France to 14% of their previous levels — from even conservative estimates. Data from Maine and other North American coasts showed similar declines, although not as drastic. The larvae of European eels travel with the Gulf Stream

across the ocean and, after one to three years, their leptocephali reach a size of 75 – 90 mm before they reach the coasts of Europe. The common name for this recruitment stage of eels is *glass eel*, based on the transparency of the body. One famous place for large-scale collection of glass eels (for deli-food and stocking) is Epney at the Severn in England. Glass eels are also eaten as food in Spain. Once they recruit to coastal areas they migrate up rivers and streams, overcoming all sorts of natural challenges — sometimes by piling up their bodies by the tens of thousands to climb over obstacles — and they reach even the smallest of creeks.

They can move themselves over wet grass and dig through wet sand to reach upstream headwaters and ponds, thus colonising the continent. In freshwater they develop pigmentation, turn into *elvers* (young eels) and feed on creatures like small crustaceans, worms and insects. They grow up in 10 or 14 years to a length of 60 to 80 cm. In this stage they are now called *yellow eels* because of their golden pigmentation.

In July some individuals mature and then they migrate back towards the sea, crossing even wet grasslands at night to reach rivers that lead to the sea. Eel migration out of their freshwater growth habitats from various parts of Europe, or through the Baltic Sea in the Danish belts have been the basis of traditional fisheries with characteristic trapnets.)

DES - Sally Soule, Coastal Watershed Supervisor, is located at the Coastal Office at: NH Department of Environmental Services, Pease Field Office, 50 International Drive, Suite 200, Portsmouth, NH 03801. Fax (603) 559-1510. Sally provides information about water quality and restoration projects in any of the 43 coastal communities and pollution investigations on the coast, and information about watershed and restoration grant proposals in the Coastal Watershed. (603) 559-0032 sally.soule@des.nh.gov

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