Transportation
Land Development
Environmental
Services

VHB *Vanasse Hangen Brustlin, Inc.*

Meeting Notes

Attendees: See List

Date/Time: September 14, 2011

Project No.: 52151.00

Place: Exeter Town Hall

Re: Great Dam Removal Feasibility & Impact Analysis
September 14, 2011 Public Meeting Information

Notes taken by: M. Becker/P. Walker

A public meeting was held on September 14, 2011 to discuss issues related to the possible removal of the Great Dam on the Exeter River in Exeter, NH. The Town of Exeter hosted this meeting with its partners, including the NH Department of Environmental Services. The main objective of the meeting was to update the public on the "Great Dam Removal Feasibility and Impact Study" which is being conducted by a consultant team led by VHB.

The meeting included time for members of the public to interact with specialists at six "information stations." This memorandum is intended to document the comments and information received at each of these stations. UNH graduate students served as recorders at each station to take notes during the session. Key discussions and questions are summarized below. In addition, a number of citizens took the opportunity to submit comments on the forms provided at the meeting which are also summarized in this document.

Notes from each of the Information Stations are listed below.

Station 1. Hydrology, Hydraulics, and Flooding

Participants: *Mike Hansen; VHB; Andrew Walker, W&S; Kevin MacKinnon, W&S; Paul Vlasich, Town of Exeter*
Recorder: *Helen Perivier, UNH (with help from Paul Vlasich, Town of Exeter)*

Questions/Comments Received:

- How come below dam isn't looked at on impacts because of flow differences?
- Will pipes under Squamscott River be affected?
- Clemson Pond Affected? There are a lot of contaminants there.
- What about the Penstock under the library?
- How does the mill fit in with their water use?'

- What will water flow be upstream? If someone finds that they have 15 feet of mud on what is at present lawn, will the town be prepared to help people restore their property?
- Will flow on Exeter River and Squamscott change? Ships used to come up to Exeter, will that be possible again?
- It helps out a lot when the town is proactive in dropping the water level before a big rain.
- Does the town actually measure the water level every day?
- I'm curious about what the river is going to look like when the dam is removed. There have been big floods upstream in a mobile home area that cut out chasms around 12 feet deep, which may be typical of what happens when you have a flood cutting through a river flood plain. Could something like that happen between the dam and Gilmore Pond and beyond if the dam is removed? We could get a lot of water running through this level flood plain.
- Will removing the dam help scour out sediment from downstream?
- Will canoeing improve downstream?
- Vernon Sherman, Executive Director of the Exeter Housing Authority: The Exeter Housing Authority has 85 units with 100 elderly and disabled people. We have had two 100-year floods within 20 feet in the last 15 years and the only reason why the building hasn't been touched is because it is 6 feet above the flood line on the maps. I want to know what will be the effects both with and without the dam at the time of a 100-year flood coinciding with high tide.
- If the dam is removed will the area which the water transverses be greater or smaller (not just in terms of water level, but also spreading horizontally)?
- A property owner close to dam says that one thing that will be gone is the impoundment. What would replace that body of water? Open space? A lot of time of year there's not much river and you can't even see it. Is this what we can expect with the dam removal?

Station 2. Water Supply Information Station

Participants: *Brian Goetz, W&S; Roger Wakeman, PEA and River Study Work Group*
Recorder: *Chris Keeley*

Questions/Comments Received:

- How deep is the pump station?
- What water rights does Philips-Exeter Academy have?
- How accessible is the water immediately adjacent to the river?
- What are the alternatives for water supply?
- How would removal affect wells?
- How will the water quality change if the dam is removed?
- Are there any drawings of the river before the dam was put in?
- How do shifts in technology better enable hydropower? I.e., if hydropower is not feasible today, how does hydropower feasibility change as technology improves?

Station 3. Dam Safety Information Station

Participants: *Steve Doyon, DES, Brian Graber, American Rivers, Deb Loiselle, NHDES*
Recorder: *Emily Troisi and Richard Brereton*

Questions/Comments Received:

- What is its hazard classification of the Great Dam/ is that based on the structural integrity of the dam or something else?
- What is structurally wrong with the Great Dam that would require its removal?
- How will the saturation of the historic floodplain change with dam removal, and how might that impact future flooding events?
- How is the river going to look if the dam is removed? Will the river become more narrow after the dam is removed?
- How far upstream will the effects of dam removal be noticeable?
- How accurate are modeling projections for dam in/out scenarios?
- What would be the cumulative flooding impacts if the Phillip's Dam and/or Pickpocket Dam failed with or without the presence of the Great Dam?
- Has the presence of the fish ladder had an impact on increasing flooding, and if so how much?
- How do you deliberately remove a dam? What is the actual physical process of dam removal? Is it quick or does it happen over a period of time?
- The town should be doing more to manage its water and has only just stepped up in the last three years to meet the needs of Exeter.
- Rumors in town that not all is being/ was done to increase dam capacity to allow flood waters to pass over the dam and the flood gate is far too small.
- Request to see the initial letter of deficiency (will be provided directly to individual by Deb Loiselle).
- Several comments from business owners along the river, Exeter residents, and non-residents about the changing aesthetic value. One local resident and one resident of Newmarket, in particular were distraught over the state of the Winnacut River dam removal in Greenland and the potential for Exeter to be transformed into a giant trash heap.
- Several land owners and business owners requested that opinions and experiences of other NH towns that have gone through the dam removal process be made available in some format.
- Concern about long-term impacts on current wetland resources. If the dam is removed, individual questioned whether or not the land adjacent to the river would be in wetland jurisdiction, or not; and whether it could be built upon. (Concerned citizen will be provided contact information for Tim Drew at NHDES)

Station 4. Water and Sediment Quality Information Station

Participants: *Sally Soule, NHDES and River Study Work Group and Bill Arcieri, VHB*
Recorder: *Matt Cardin*

Questions/Comments Received:

- How much sediment will end up in river downstream from the dam? Will the amount of sediment restrict rowing below the existing dam?
- Are the [historic] river-side dumping areas being looked at?

- What is the potential impact to groundwater levels for areas bordering the river once the dam is removed?
- Will there be an additional amount of sediment deposited into the Squamscott River?
- Will historic boat navigation (e.g. Schooners or ships) be re-gained or limited by the dam being removed?
- Will removal of the dam result in the removal of increased sediments and need for restoration, or sand and gravel stream beds for fish breeding? (on a sticky)

Station 5. Fish Passage, Natural Resources & Recreation Information Station

Participants: *Kevin Sullivan, NHF&G, Mike Dionne, NHF&G , Eric Derleth, USFWS, Kristen Murphy, Natural Resource Planner and River Study Work Group*

Recorders: *Emily Troisi and Matthew Magnusson*

Questions/Comments Received:

- What kind of effect will there be on the Exeter Elm Campground?
- There was concern over the recreational effects on the campground.
- If you take away the dam, do you lose deep pools for fish?
- What will be the recreational impact (fishing, swimming, boating) if water level is very low due to dam removal?
- Will lower water levels cause oxygen levels to decrease too low to support fish?
- What is the minimum level of water for fish to survive, especially if there are drought conditions?
- How will dam removal effect upstream and downstream eel passage?
- Are there significant amounts of freshwater mussels upstream of the dam? Any rarer species of mussels?
- Have any biodiversity studies of the river been performed?
- Are any of the fish that you can catch now in the river safe to eat?
- Is there a recreational upside to dam removal?
- Will lower water levels encourage increased beaver activity and damming?
- What can be learned from the Greenland example?
- What fish species traditionally went up river before the dam?
- Will removing the dam change sedimentation at Swazey Park (impacting recreational activity)?
- It was noted that in front of Swazey Park the river used to be dredged consistently.
- If the dam is removed, has anyone modeled how the wetlands will evolve over the next 1, 5, 10 years and how DES jurisdiction of river side resources will change as a result of changing wetlands.
- Concern over potential for development to occur in areas that are not developable as they are wetlands.
- Will there be changes to the Great Swamp in Kensington? These are important wetlands.
- How does the water table and vegetation along the river change as a result of dam removal?
- What has happened for other dams that have been removed in NH?

- Will something replace the current impoundment area, open space?
- What is your idea on the dam and fish passage?
- How does the dam affect fish breeding?
- Are they removing all dams in NH eventually?
- If you take the dam down, how will that affect fish upstream, resident fish, and fish that travel upstream?
- Do people care about fish as much as other issues?
- What is the difference in Greenland since the dam has been gone?

  *Note: This was the second reference to Greenland Dam (Winnicut River Dam)
- Do we know where all the streams are?
- What will water level impact be on local business and historical buildings
- Will it impact the powder mill?
- When did it change names to the Great Dam, it used to be called the Mill Dam?
- How will dam removal change flow in flood time?

Station 6. Historical & Archaeological Resources Information Station

Participants: *Rita Walsh, Joyce Clements, VHB, Eric Hutchins, NOAA & River Study Work Group*
Recorder: *Meg Gardner, UNH Tides Program and Joyce Clements, VHB*

Questions/Comments Received (recorded by Joyce Clements)

- Pete Richardson, River Study Committee (603.778.6272) reported a gunpowder mill on Powder Mill Road, east of the intersection with Route 111.
- Mary Dupre, mother of Selectman Julia Gilman also reported "a really old dam at Railroad Bridge and Route 111. At one point, there were four mills in this area (corn, saw, and gunpowder (2) [Hobart Gun Manufacturer]). Ms. Dupre stated that one of the powder mills dated to the Revolutionary Period, the other operating from ca 1812 to 1850. A nail slitting mill also was located here and a woolen mill. Mill area might have been called King's Fall, or Kingston Mills, after Thomas King who owned mills here in the late 1600s or early 1700s.
- Exeter Selectman, Julie Gilman, (96 High Street, Exeter) recommended conversations with Dan Foster, retired professor from Phillips Exeter Academy, who maintained the original collection prepared by the late Willie White (formerly of PEA). Julie recommended Bell's History of Exeter for context and historical background. According to Julie the Swanzey Park area was noted for shipbuilding but this area was filled when the Parkway was built, perhaps in the late nineteenth century. She suggests that the west side of the river, on the site of the Exeter Housing might be archaeologically sensitive. Development occurred in the 1970s.
- Mr. Don Robie, owner of Kimball Island will provide us with pictures and an article on the river confluence from two early newspaper articles. He has pictures of people standing and looking at ice jams in the river. Notes the presence of outhouses on the island. He purchased the Island in 1977. It originally was named for Emma Kimball. Will accommodate researchers during a site visit.
- One gentleman recalled activities and resources along the river, including trout, perch, hornpouts, alewife, lamprey eels, muskrats, and possibly mink. He referred to a boat house on

the river, prior to the population growth of the late 1940s. (These resources are the kinds of resources that would have attracted Native Americans to the area prior to European settlement).

Questions/Comments Received (recorded by Meg Gardner)

- How will dam removal impact the historical nature of the dam?
- How will all the information come together in the end once the study has been completed?
- Before it was a concrete dam, what was the dam made of? One man thought there was another dam before it was the current concrete one.
- Concern about what happened/ is happening with the Winnicut dam removal; doesn't want that to happen here.

General Comments (asked at the end of the meeting):

- One man commented that once the dam is removed, it cannot be put back; he doesn't want the town to regret removing the dam, it is part of the beauty of the town
- Curious about what has happened with other dam removals, regarding river flow, roads, and other factors. Concerned about what will happen.
- One man said: Seems to me that the impoundment behind the dam will be gone; will something replace where that open space is? A lot of seasons of the year there isn't much of a river below the dam and the vegetation around blocks the views. Is that what is to be expected if the dam is removed?
- What is the depth of the water at the dam right now?

COMMENTS SUBMITTED ON THE COMMENT FORM

Name: Kris Vaughn

What does the topography of the river bottom in the area of the dam tell us about what the river looked like before the dam was installed (was there a waterfall-like drop)? Will this give us an idea of how it would look after removal?

If there is a lot of silt behind the dam, do we know how far down the ledge/rock is (below the current average water level?

Name: W.R. Woodruff

Please keep the dam. The reflections of the buildings and town are a key part of the beauty and heritage of Exeter. The dam needs proper floodgates and responsible people to lower the water if heavy rain or snowmelt run-off is threatening. It is too late to comment and to rebuild a complete new flood control type dam if it removed. Keep the Dam!!!

Name: Chris Matlock

The Exeter River at reduced water levels as a consequence of dam removal will in all likelihood become a series of beaver impoundments all the way up to the next dam. There was no beaver in NE before the dam was put in originally due to overharvesting. There are beaver along the river already but they cannot establish flowages with the level at its current state. With the dam removed there will be an increase in the wetland marsh, but probably not a navigable river as we have now. Any increase in fish runs up from the Squamscott will probably be influenced.

Name: Mary B Dupre

Have some deed copies re the Mills at Kings Falls (between Rte 111 and where river edges Powder Mill Road (you have Neck Road)

Name: Julie Gilman

Include photos of before and after removal of other dams and upstream vegetation/wildlife changes.

Will identified or probable archeological sites be preserved, removed or left alone. If water level decreases and exposes sites is there any mitigation.

Be definitive about the impact on water table and wells, septic systems.

WRITTEN COMMUNICATION FROM CITIZENS

From: Bob Carbonneau [mailto:carbe47@comcast.net]
Sent: Monday, September 12, 2011 5:32 PM
To: Paul Vlasich
Subject: Letter re: Great Dam Removal Feasibility
Importance: High

Dear Mr. Vlasich:

This letter is regarding the September 14, 2011 Public Meeting on the Great Dam Removal Feasibility and Impact Analysis.

Unfortunately, I will be out of town on the 14th. However, I wanted to call to the attention of the study group a couple of points that I feel need to be considered.

The Carbonneau Family has been located in the lower Water/Dewey Street area since the early 1900's. My father was born in the house at 1 Dewey Street in 1910. In the 1930's he moved a barn/house from Water Street (location of the Phillips Academy Kindergarten today) to what is now known as 286 Water Street. It is the corner lot and was the site of my grandfather's shoemaker's shop before his passing in 1927. I grew up at and currently reside at 286 Water Street. As you can see the Carbonneau's have a long history in that area of town.

Over the years, we have seen many changes to the neighborhood. When growing up in the 60's my brother and I both worked part-time, directly across the street from our house, at the Exeter Highway Department (EHD). The EHD had storage areas for road salt, sand and old tar (pavement) as well as a gas pump. We were taught early on "not to eat the orange snow" that resulted when the Gas Works (on the corner of Green and Water Streets and also across the street on Water Street) was making gas all night during the dead of winter. The Gas Company had a large gas ball and gas storage container on the Water Street side (277), as well as a large gas storage container as you went up the hill on Green Street. These sites are currently the location of The Exeter Housing Authority (277 Water Street), the Phillips Academy Kindergarten, and a community park/cemetery. These areas were also the former sites of the Exeter Town Dump, the Exeter Coal Company (late 1800's), and a Federal Superfund Toxic Waste site (which was "dome/sealed" in the 1980's). It is not a surprise to us that oil like substances have been “bubbling up” in the Squamscott River on the Parkway.

Since the Great Dam was built by the Exeter Manufacturing Company, the water above the dam was called the Exeter River and below the dam, the Squamscott River (tidewater). When Mr. Sway

donated the land to the Town of Exeter, in the early 1930's, for what is now known as the Swasey Parkway, the tidewater was very close to the edge of lower Water Street (from 225 to 316 Water St. - reference Exeter P.O. map of 1892). Some of the fill used to create the Swasey Parkway, as we know it today, came from leveling my grandfather/fathers' 286 Water property by removing the hills. The soil removed from 286 Water Street was primarily blue clay. It would be reasonable to assume that most of the fill used in the project to construct the Parkway was similar.

A bit of weather history if I may. When Exeter has been hit with hurricanes, the lower part of Water Street has had flooding issues, particularly at high tide (this is with the dam in place). Storm events that come to mind are the 1938 (Great New England Hurricane) and 1954 (Carol) hurricanes. Sometime since the 1960's the lagoons were built below the dam. I understand that currently, the catch basins (street) runoff is being pumped to the lagoons from a station behind 277 Water Street. This dynamic adds to the volume of quick flowing water.

In my opinion, I believe the removal of the Great Dam would be a huge mistake. In the event of heavy rains or hurricanes the lower Water Street area will receive significant water and environmental damage, especially at high tides. It is important to note that today, lower Water Street is comprised of a mix of residential, commercial, disabled/elderly housing, and higher education properties...also included are Law offices; a bakery; barber shop; Folsom's Tavern; the Academy's Data Center and Kindergarten/Daycare; the Exeter Housing Authority Complex (about 100 residents and Administrative Offices) and several private residences. It is anyone's guess as to what harm would come to the area during a significant weather event. Obviously, flood damage and/or evacuations of the elderly and children as well as the possibility of environmental problems with the toxic waste in the area may have wide ranging implications for the Town and State.

I would like to present a "layman's" option for the dam's future. I understand, that the original dam had about 1 foot added to its height. Instead of removing the dam, I recommend that three steps be taken as follows:

1. Return the height of the structure to its original height by removing the added foot;
2. Expand the size of the sluice; and
3. Install in the sluice the most up to date operational technology to manage, regulate and control the water flow as conditions fluctuate.

If these steps are taken, it should solve, to a great degree, the flooding above the dam on the Exeter River.

If the dam is removed. . .I believe the entire town will suffer from mosquito born illnesses like we have never seen, as well as new areas of flooding and a high risk of environmental damage from the old Gas Works sites.

I appreciate the opportunity to comment. To those participating in this review and decision.....Thank you for your service!

Sincerely,
Robert P. Carbonneau
286 Water Street
Exeter, NH 03833