

ADOPTED

City of Keene
New Hampshire

CONSERVATION COMMISSION
MEETING MINUTES

Tuesday, January 19, 2016 4:30 PM 2nd Floor Conference Room, City Hall

Members Present:

Chair Thomas P. Haynes
Councilor George Hansel
Councilor Janis Manwaring
Denise Burchsted
Thomas Lacey
Brian Reilly
Sadie Butler, Alternate

Staff Present:

Tara Kessler, Planner
Kurt Blomquist, Public Works Director

1. Call to order

Chair Haynes called the meeting to order at 4:30 PM.

2. Minutes – December 21, 2015

Mr. Hansel made the motion to accept the minutes of December 21, 2015 as presented. Mr. Lacey seconded the motion, which carried unanimously.

3. Election of Chair and Vice-Chair

Mr. Hansel nominated Mr. Haynes as Chair and Mr. Lacey as Vice-Chair of the Conservation Commission. Councilor Manwaring seconded the nomination, which carried unanimously.

4. Notifications

a) Shoreline Permit Application - 2 Ashbrook Road

Chair Haynes stated that the building where the Olive Garden Restaurant once stood is being torn down and will be replaced with a larger mixed-use retail building. The existing and proposed building are located within the 250' Shoreland Protection Zone. Ms. Kessler stated that there no new impervious surface area will be added as a result of the new building construction.

5. VHB Presentation on West Street Dam Draft Report

Peter Walker of VHB approached the Commission. Mr. Walker stated that VHB recently issued a draft technical report and noted that his presentation will include a recap of information from the November meeting as well as newer study results. Mr. Walker restated that the scope of the study includes the hydraulic model results and the affected natural resources if the dam were to be removed. Mr. Walker stated that the hydraulic model is to predict how deep, wide and fast the water would be under three conditions. These three conditions are: dam removal; keeping the

dam the same; and, the installation of 1-foot flashboards. Mr. Walker noted that this is not a comprehensive study but a focus on wetlands and natural resources.

Mr. Walker presented a map of the area in discussion and pointed out the dam location. Mr. Walker stated that the study area extends to the Court Street Bridge. He continued, stating that important cross-sections are highlighted in red and include: a cross-section 600-feet downstream of the Dam; a section upstream on Cross Street; an oxbow cross-section which is 500 linear feet upstream; a cross-section in between the NH 9/10 Bridge, which is referred to as a lower flood plain forest; and, a cross-section by Tenant Swamp.

Mr. Walker noted that the model reviews both the hydrological and hydraulic systems of the Dam. He noted that historical data was used in the model to determine the flow from the river, which is measured in cubic feet per second. Mr. Walker stated that a USGS gauge is located upstream on the Surrey Mountain Dam and data from this gauge was utilized through statistical analysis to determine the amount of flow under certain conditions: low flow, high flow and annual average flow. Mr. Walker noted that the annual flow average will be the focus of the presentation.

Mr. Walker showed a graph representing flow if the dam was removed. He noted that this graphic was presented during the November meeting. Mr. Walker stated that elevation is represented on one axis and distance upstream on the other. He noted that the graph represents a profile of the river showing the stream bed, the Dam infrastructure, and water levels. Mr. Walker pointed out the accumulation of sediment upstream of the Dam and noted that if it is removed the material could be subject to sediment transport downstream. Mr. Walker stated that the model modified the streambed shape upstream of the dam. He continued, stating that another high point is present upstream but there is not enough information to know if it is sediment build up or another natural feature. Mr. Walker stated that incorporating the sediment wedge in the model has some difference but this gradually decreases further upstream.

Chair Haynes asked how far back the high point is located. Mr. Walker replied that it is about 500-feet upstream. Ms. Burchsted asked if these are FEMA cross-sections. Mr. Walker replied that the cross-sections are a combination of FEMA data and data collected by VHB. Mr. Walker presented another graph showing dam removal without the sediment wedge.

Mr. Walker stated that the red line on the graph represents the annual flow with existing conditions and the blue line represents the annual flow if the Dam were removed. He continued, stating that there is upwards of a 4-foot drop in water surface elevation and an upstream decrease of 1-foot to 6-inches by the Court Street bridge. Mr. Walker noted that the original study anticipated that a study area 2.6 miles upstream would be sufficient; however, he noted that it appears the Dam has an influence further upstream. Mr. Walker stated that there is a pretty dramatic influence just upstream of the dam, but further up, particularly with higher flows, there is less influence.

Mr. Walker displayed a graph representing the flashboard scenario. He noted that the model developed by VHB assumes that flashboards are in place during the 100-year flow. However, the flashboards would be designed to fail or be lowered under high flood events. Mr. Walker

noted that if the flashboards were designed to fail at a threshold less than 100-year flow conditions, the influence of the Dam with flashboards at the 100-year flow would essentially be the same as the existing conditions.

Mr. Walker showed a data table of the hydraulic results for average annual flow and noted that this table is in the draft technical report. He continued, stating that downstream of West Street the maximum depth at the cross section is about 1½-feet and the river width is approximately 15-feet. Mr. Walker stated that regardless of the Dam condition there is not going to be a dramatic impact downstream. He continued, stating that if the dam were removed, the water surface elevation would drop about 3.7-feet and the river would be approximately 2-feet deep at approximately 500-feet upstream. Mr. Walker stated that further upstream the magnitude of the change decreases, specifically in the area of the lower floodplain forest. Mr. Walker stated that flashboards add a foot of depth up through the study perimeter. He continued, stating that the river's width would decrease about 90-feet 500-feet upstream of the Dam. The river would go from 170-feet to 80-feet wide. Mr. Walker stated that the Tenant Swamp area would only have a 3-foot drop in width.

Mr. Walker went over the key findings of the study in reference to the model. He noted that the Dam has minimal influence downstream, changes can be seen upstream as far as Court Street and the Dam has more influence on low flows. He continued, noting that the elevation of the river will have a 1-foot to 4-foot decrease closer to the dam. He continued, stating that the Dam sets minimum elevation below which the water surface elevation rarely drops and if removed you will see the lower end of seasonal fluctuation appearing. Mr. Walker noted that this is not a bad thing in terms of ecological resources.

Mr. Walker went over the natural resources that were reviewed including the wetlands, rare state and federally listed species and the dwarf wedge mussel, which is being reviewed separately in detail.

Mr. Walker displayed the lower floodplain forest and oxbow, which is a manmade wetland. He noted that this area has a direct hydraulic connection to the Ashuelot River and there will be a significant drop in depth from 5.6-feet to 1.9-feet deep. Mr. Walker noted that this area relies on the back water condition created by the Dam and there would be ecological community changes, however, it is not possible to say the wetland would completely dry out.

Mr. Walker stated that the lower floodplain forest has a large natural system but is located mostly outside the flood plain. He noted that this area would have river depth drop from 5.8-feet to 3.4-feet if the Dam were removed. Mr. Walker noted that there is some influence from the back water as well. He continued, noting that some community shifts may occur as well as potential wetland loss over time but these changes would take decades to witness. Mr. Walker stated that there would be a reduction in 100-year flood plain as well and showed a map displaying these changes.

He continued, stating that a substantial part of the wetland area displayed would be outside the influence of the river. Mr. Walker stated that Tenant Swamp has a perennial stream that goes through it and is a regionally significant wetland system with ecological diversity. He continued,

stating that this would have a 1.2-foot drop going from 6-feet to under 5-feet. Mr. Walker stated that according to the geology and flood plain data, the area is not dependent on river flow for existence and it is unlikely there will be measurable changes to this area if the Dam were to be removed.

Mr. Reilly asked for confirmation that the cross-section at Tenant Swamp would have a water level drop but Tenant Swamp itself would not be affected. Mr. Walker agreed and stated that all of the numbers are related to single cross-sections but these sections have not been averaged yet. Mr. Walker presented another map showing that Tenant Swamp is outside of the 100-year flood plain. He noted that the stream section that flows into the Ashuelot River is the wettest part of the system and has emergent shrub scrub wetland.

Ms. Burchsted stated that the same could be noted for Tennant Swamp Brook, if it were modeled with the base level drop to the Ashuelot River then it too would drop. Mr. Walker agreed and stated that the tributaries were not included in the model.

Mr. Walker stated that the endangered species were reported by the New Hampshire Natural Heritage Bureau. These species include:

The Northern Bog Violet had a single observation from 1971 and is located far from the river with no effects expected.

The Canada Shore Quillwort is a very small plant species in measurement and had a single observation from 1971. Its habitat type is present along the reach of the river, specifically, sand bars, and its distribution might be affected by the dam. The effects of the species cannot be ruled out and field research is necessary.

The Common Nighthawk had sightings from 1990-2002. Keene is one of three urbanized areas that the species has been observed in New Hampshire. The Common Nighthawk is not wetland dependent, however, and impacts to this species are not anticipated.

The Wood Turtle has been tracked for some time and was found in the Ashuelot River around 1990. The species prefers flowing streams and is mobile. The New Hampshire Natural Heritage Bureau predicts that dam removal is beneficial for the Wood Turtle.

Mr. Walker stated that the oxbow and aquatic bed communities are going to be most affected by dam removal and the lower floodplain will have a community shift, but Tenant Swamp will have minimal changes if any.

Mr. Walker stated that the next steps include getting feedback on the report and making revisions if necessary. He continued, stating that a public informational meeting will also occur at some point.

Councilor Manwaring asked about the Dwarf Wedge Mussel because it was not addressed in the presentation. Chair Haynes stated that the Biodiversity study is referenced in the Report,

which states that the dam removal could be good or bad for the species and more research is necessary to determine the upstream colonies of Dwarf Wedge Mussels.

Ms. Burchsted asked about the results of the low flow in comparison to the annual flow in the model and how to assess the effects of the wetlands when considering annual versus low flow conditions. Mr. Walker replied that the low flow results are in the report and similar to the average annual flow in terms of direction of change. He continued, stating that the magnitude of the change is slightly greater with the dam removal. Mr. Walker stated that it is an accepted conclusion that restoring the fluctuation of the river to its original state is an ecological benefit.

Mr. Walker stated that the low flow data is in table 5, pg. 12 in the report. He continued, stating that under the average August flow, the maximum depth of the river is 5.2-feet deep, and with a dam removal it would drop by 4-feet. The maximum channel depth would be 1.2-feet. Mr. Walker stated that average annual flow shows the maximum channel depth at 5.6-feet with a drop in depth by 3.7 feet. Mr. Walker stated that there is a difference of 1.2-feet compared to 1.9-feet for the two flows.

Mr. Burchsted asked for further explanation of the low flow assessment. Mr. Walker stated that wetlands are defined as an area that is saturated to the surface for two weeks out of the growing season and it is not unusual for wetlands to be dry at times later in the season. Mr. Walker stated that the low flow condition may affect the banks of the river and the aquatic bed would shift along with the bed habitat. Mr. Walker stated that the cross section of the river must also be considered and the aquatic beds are high due to the impoundment. He continued, stating that aquatic beds that are currently submerged may be exposed with dam removal. Mr. Walker stated that predicting this on a spatial scale is not possible at this level of study, however.

Bud Windsor from the Ashuelot River Park Advisory Board asked what the park would look like if the Dam is removed, specifically, the area of the boat landing. Kurt Blomquist stated that VHB was not hired to answer these specific questions. He continued, stating City Council would be addressing the recreational questions if the decision was made to remove the Dam. Mr. Blomquist stated that some drawings were done back in 2011, which displayed what the area would potentially look like with dam removal. He continued, stating that under dam removal the river's channel width would decrease and look similar to the channel width downstream. Mr. Blomquist explained the history of why this study has taken place, and noted the 2008 letter of deficiency received from the state of New Hampshire for the Dam. Mr. Blomquist stated that about \$500,000 worth of work is needed in order to maintain the Dam. West Street Hydro became involved and offered an alternative to dam removal. He continued, stating that City Council requested the Conservation Commission give feedback about the Dam and in turn the Commission requested the VHB study.

Chair Haynes stated to Committee Members that additional questions or suggested revisions to the final report should go through Ms. Kessler.

6. Surface Water Protection Ordinance

Mr. Lacey explained the history of the Surface Water Protection Ordinance and why the subcommittee was created. Ms. Kessler distributed the current version of the Surface Water

Protection Ordinance. Mr. Lacey stated that the Ordinance is an overlay district, which creates buffer widths, which vary by zoning district, from surface waters in the City. He noted that the buffer ranges from 75-feet in rural and conservation areas, and 30-feet in all other 14 zones. However, the buffer is can be 10 feet in some areas. He continued, stating that there are uses permitted in this buffer. Mr. Lacey stated that there are exemptions to the Ordinance listed in Section 102-1485, including manmade ditches, swales and tax ditches.

Mr. Lacey stated that the tax ditches that people may be familiar with include Ash Swamp, Tannery Brook, White Brook and Black Brook. Some of these date back to the 1800s. Mr. Lacey stated that another system is Beaver Brook. Mr. Lacey stated that when West Mill Senior Housing was granted an exemption from the Surface Water Protection Ordinance in 2014 as a result of a ZBA ruling that it was a tax ditch and manmade, people were surprised.

Mr. Lacey noted that the subcommittee has not yet developed a formal recommendation, however they have considered modifying the wording of Ordinance to remove the tax ditch exemption. Mr. Lacey passed around images of waterbodies, which require regular maintenance.

Mr. Blomquist noted that that water management in Keene is an interesting challenge. He noted that he traced back an act of the state legislature from 1895 that gave the Mayor and City Council of Keene permission to improve and straighten Beaver Brook.

Mr. Blomquist noted that there is a 700-foot elevation drop along Beaver Brook from the area of the Three Mile Reservoir to the Ashuelot River, and that the drop from the Reservoir to the Woodland Cemetery is about 690 feet. Mr. Blomquist noted that in 1969 Keene partnered with the Army Corps to channelize the Brook from Spring Street to Harrison Street. In 1985 the idea of creating a dam structure to decrease flooding was discussed. Mr. Blomquist stated that from the discussion, Keene now has a three-tier system for the dam, which regulates the different flows. He continued, stating that the city of Keene and the Army Corps did the project together, which included the construction of the dam and additional work downstream like the articulated block system. Mr. Blomquist stated that in the 1970s the city conducted channel improvements by Baker Street to Marlborough Street.

Mr. Lacey stated that an exemption from the Surface Water Protection Ordinance was recently requested due to the fact that Beaver Brook is manmade and was recently dredged. Mr. Blomquist stated that Beaver Brook was dredged in 2014 from Spring Street to Route 101. He noted that there is a long history of work on the Brook and all of the east side drainage goes into it.

Mr. Blomquist stated that almost all of the manmade drainage system in Keene is connected to surrounding waterways. Mr. Blomquist stated that when the water rises in Beaver Brook localized flooding occurs. He continued, noting that Beaver Brook is one of the most natural streams, which has had the most work done because of the flooding on the east side of Keene.

Mr. Blomquist stated that the tax ditch system goes back to 1950s and displayed the original construction drawings. He continued, stating that the project was set up to transport water away from agricultural and other lands. Mr. Blomquist stated that the system used Ash Swamp Brook,

White Brook, and Tannery Brook, which is 80% enclosed and goes through Kohl's. He continued, stating that the system goes down Key Road and under the highway. Mr. Blomquist stated that when the work was completed the city of Keene agreed to maintain the system on an annual basis through the 1990s. He continued, noting that after 50 years of maintenance the City's maintenance obligation has been considered met.

Mr. Blomquist stated that the city of Keene is currently working with the Department of Environmental Services to determine what maintenance is necessary on these waterways. Mr. Blomquist stated that sections that do not need as much maintenance include Black Brook and Ash swamp Brook. He continued, stating that maintenance is necessary for manmade waterways. Mr. Blomquist stated that the Ashuelot River also has a maintenance agreement with Army Corps and there is an annual inspection of necessary maintenance. The Army Corps also inspects the Three Mile Reservoir and the concrete channel.

Mr. Lacey stated that the Ordinance is confusing. While there is a need to maintain some portions of the buffer along certain tax ditches, exempting all tax ditches grants many property owners exemption from the Ordinance. Mr. Lacey noted that a few adjustments to the wording may be able to fix the problem.

Ms. Kessler asked if the sub-committee has made suggestions for modifying the Ordinance. Mr. Lacey stated that they have not yet made formal suggestions. Ms. Burchsted asked if changes made to the ordinance would affect the City's ability to maintain these waterways. Mr. Blomquist noted that he would have to review the document but he does not see any negative effects. Councilor Manwaring stated that part of this concern arose from flood damage at the Kingsbury property, which is exempt from the Ordinance. Councilor Manwaring noted that she was unaware of Beaver Brook being a tax ditch and stated that many other people are also unaware of this.

"Mr. Lacey reviewed the history of the concerns and changes thought necessary back in 2014." He read aloud the minutes from a previous meeting, which stated, "Councilor Manwaring made the following motion which was seconded by Mr. Haynes. On a vote of 7-0, the Conservation Commission agreed to pursue amendments to the Surface Water Protection Ordinance specifically around the definition of Beaver Brook and other places classified as tax ditches and to convene a sub-committee to develop the language."

Chair Haynes suggested that the sub-committee come up with language for the Commission to consider. Councilor Manwaring stated that if the Conservation Commission approves changes to the Ordinance, it will need to go on to City Council.

7. Bobcat Season Proposal- Request for Letter to NH Department of Fish and Game

Councilor Manwaring stated that she was approached by a constituent about the NH Fish and Game proposal to open a bobcat hunting season. This constituent was not in favor of opening a season and asked that she address the topic with the Conservation Commission. At a similar time, Ms. Kessler noted that the Stoddard Conservation Commission requested that the City of Keene consider signing onto a letter advocating against the bobcat season.

Councilor Manwaring stated her concerns with the original UNH study done, which refers to the bobcat population being around 1,800-1,200 and the NH Fish and Game stating the bobcat population is around 2,500. She continued, stating that this is also a sport hunt and the meat is not used. Councilor Manwaring stated that she is requesting a letter stating that this hunting decision is being made too fast and further research is necessary. Councilor Manwaring noted the increase in the wild turkey as well and this is a food source for the bobcat.

Mr. Hansel stated that he is not a trapper but in reading the letter shared by the Stoddard Conservation Commission, it seems like it is a visceral reaction to hunting the bobcat as opposed to reviewing the population data collected. Mr. Hansel noted that NH Fish and Game have an exceptional record of tracking and regulating wildlife populations. He noted that wild turkeys were reintroduced by NH Fish and Game. Mr. Hansel noted that the bobcat population is in small pockets and the population should be managed. He noted that the NH Fish and Game Department uses hunting fees to conserve wildlife and marine habitats. Mr. Hansel stated that the hunting and trapping community also deserves credit for conservation as well. Mr. Hansel suggested that by signing this letter, it would show that the Conservation Commission is asserting mistrust in NH Fish and Game's position on the matter.

Councilor Manwaring stated confusion about the letter Mr. Hansel is referring to. Ms. Kessler stated that both Stoddard and Councilor Manwaring requested the Conservation Commission sign on a letter to not support the bobcat hunting. However, they are not the same letter. Chair Haynes stated that the Commission could craft a separate letter. Mr. Hansel stated that he is not comfortable putting his name to something refuting the scientific method from which the NH Fish and Game came to their decision.

Chair Haynes stated that the Commission briefly discussed if there is a difference between the bobcat hunting topic and the pipeline at the January meeting. Councilor Manwaring noted that constituents' will be expecting the Commission to make a decision on this matter. Mr. Lacey stated that the difference between the two topics is that the even if the Commission rendered an opinion on the pipeline it would have gone through City Council. He continued, stating that he agrees with Mr. Hansel and has faith in the NH Fish and Game. Mr. Lacey stated that bobcats are not rare or endangered and more focus should be on creating bobcat habitat. He continued, stating that the city has 4,000 acres to manage and some could become bobcat habitat. Mr. Lacey agreed that the Commission should not second guess NH Fish and Game and individuals can speak out on their own.

Chair Haynes stated that Councilor Manwaring had concerns about how the data on the bobcat population differs between the UNH study to the NH Fish and Game study. Councilor Manwaring stated that she understands the intentions of NH Fish and Game but questions if this is an action due to funding. Mr. Hansel stated that starting a season for any animal costs a significant amount of money, which leads him to believe that this is a wildlife management decision.

Ms. Kessler noted that there is a public hearing on February 1st in Concord and comments are due by February 10th to NH Fish and Game.

Councilor Manwaring made a motion that the Keene Conservation Commission write a letter to NH Fish and Game stating that the Commission does not support a bobcat hunting season at this time. Ms. Butler seconded the motion.

On a vote of 2:5 the motion does not pass.

Mr. Reilly stated that he reviewed the 28 duties of the Commission and number 15, which stated that the Commission acts as a publicizing agent bringing conservation management to the notice of the public, is the closest to the issue in discussion but still a reach. Ms. Kessler noted that number 27 discusses advocacy in state laws, which could refer to the topic. Councilor Manwaring stated that part of the duty of the Commission is to conserve land for wildlife. Chair Haynes stated that hopefully the Conservation Plan will address this and encourage the city of Keene to conserve wildlife as well.

8. Conservation Master Plan Discussion

Chair Haynes stated that he will be putting this item at the beginning of the next agenda. He continued, stating that a special meeting may be needed to focus on the Conservation Plan.

9. New or Other Business

a) Member Information Packets

Ms. Kessler stated that Chair Haynes shared his information binder with her for replication. She continued, asking how many people from the Commission need a binder. Four Commission Members need binders. Ms. Kessler distributed information relevant to Conservation Commission membership including the sections of Keene's Code of Ordinances and the NH Statutes that reference the roles and responsibilities of a Conservation Commission. Ms. Kessler stated that she will have a discussion with the Clerk's Office as to what additional information should be included. Ms. Kessler stated that this packet of information is a start to the binder. Ms. Burchsted asked about the Commission's mission statement. Chair Haynes stated that the Commission crafted a new mission statement and this is on the Conservation Commission's website.

b) Other

- i. Mr. Reilly asked about the West Street Dam and the next steps. Chair Haynes stated that the Conservation Commission will need to make a recommendation of some kind to City Council. Councilor Manwaring stated that a recommendation was previously made by the Commission to City Council that the Dam should be removed subject to further necessary research. Chair Haynes stated that the recommendation needs further discussion. Ms. Kessler stated that VHB is contractually obliged to conduct a public presentation on the results of their study. She noted that they intend to conduct this presentation at a future City Council meeting. She noted that a recommendation is not necessary before the presentation. Chair Haynes noted that the Dam will be discussed at the next meeting.
- ii. Ms. Burchsted stated that her students are working on a video for flood management and that they would like to come to the next Conservation Commission meeting and ask advice as to what topics to include. She continued, stating that the students will have a short outline by

next month. Chair Haynes stated that it is best to talk to Ms. Kessler about the upcoming agenda.

10. Staff Updates - None at this time.

11. Adjournment- Next meeting date - Tuesday, February 16, 2016

Chair Haynes adjourned the meeting at 6:28 PM

Respectfully submitted by:
Lana C. Bluege, Minute-taker
January 19, 2016

Respectfully submitted by:
Tara Kessler, Planner
February 9, 2016