



City of Keene, New Hampshire

CONSERVATION COMMISSION

Monday, August 17, 2020

4:30 PM

**ZOOM**

Commission Members

Alexander Von Plinsky, IV, Chair  
Eloise Clark, Vice Chair  
Kenneth Bergman  
Brian Reilly  
Art Walker

Andrew Madison  
Thomas P. Haynes, Alternate  
Steven Bill, Alternate  
Councilor Robert Williams  
John Therriault

- This meeting will be conducted using the online meeting platform, Zoom. The public may view the meeting online by visiting [www.zoom.us/join](http://www.zoom.us/join) and enter the Meeting ID: **892 0008 9814**.\*
- If you are unable to attend the meeting online, you may call the toll-free # (888) 475-4499 and enter Meeting ID: **892 0008 9814** to listen to the meeting. \*
- More info on how to access this meeting is available on the Conservation Commission webpage at <https://ci.keene.nh.us/conservation-commission>
- If you encounter any issues accessing this meeting, please call **603-757-0622** during the meeting.

1. Call to Order
2. Approval of Meeting Minutes – July 20, 2020
3. Communication and Notifications
  - a. Draft NPDES Permit Letter from ARLAC
4. Informational
  - a. Subcommittee reports
    - Outreach Subcommittee
    - Arm Fund Subcommittee
5. Discussion Items
  - a. Airport CIP Wildlife Fence project – Birding/Habitat viewing along Airport Rd
  - b. Continued discussion – Invasive Species Management  
[http://peterboroughopenspace.org/ewExternalFiles/Invasive\\_Plants\\_brochure.pdf](http://peterboroughopenspace.org/ewExternalFiles/Invasive_Plants_brochure.pdf)
  - c. Continued Discussion -- Land Use Code project, Surface Waters and Hillsides
  - d. Greater Goose Pond Forest Management Plan
6. New or Other Business
7. Adjournment – Next meeting date Monday, **September 21, 2020**

*\*In Emergency Order #12, issued by the Governor pursuant to Executive Order #2020-04, which declared a COVID-19 State of Emergency, the requirement that a quorum of a public body be physically present at the meeting location under RSA 91-A:2, III(b), and the requirement that each part of a meeting of a public body be audible or otherwise discernible to the public at the meeting location under RSA 91-A:2, III(c), have been waived. Public participation may be provided through telephonic and other electronic means.*

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1 City of Keene  
2 New Hampshire

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5 CONSERVATION COMMISSION  
6 MEETING MINUTES  
7

8 **Monday, July 20, 2020**

**4:30 PM**

**Remote Meeting via Zoom**

**Members Present:**

Alexander Von Plinsky, IV, Chair  
Eloise Clark, Vice Chair  
Councilor Bobby Williams  
Brian Reilly  
Art Walker  
Ken Bergman  
Andrew Madison  
Steven Bill, Alternate  
Thomas Haynes, Alternate  
John Therriault, Alternate

**Staff Present:**

Rhett Lamb, Community Development  
Director/Assistant City Manager  
Corinne Marcou, Zoning Clerk

**Members Not Present:**

9 **1) Call to Order**

10  
11 Chair Von Plinsky called the meeting to order at 4:37 PM and read the Executive Order authorizing a  
12 remote meeting: Emergency Order #12, issued by the Governor of the State of New Hampshire pursuant  
13 to Executive Order #2020-04. Pursuant to this order, members present, all of whom called alone, stated  
14 their locations. The Chairman, Vice Chair Clark, Mr. Reilly, Mr. Walker, Mr. Madison, Mr. Bill, Mr.  
15 Bergman, and Mr. Therriault called from their home addresses. Councilor Williams called alone from  
16 Fitzwilliam, NH, and Mr. Haynes' status was unknown as he only listened to the meeting.  
17

18 **2) Approval of Minutes – June 15, 2020**

19  
20 Mr. Madison moved to approve the minutes of June 15, 2020, which Vice Chair Clark seconded, and the  
21 motion passed by unanimous roll call vote.  
22

23 **3) Communication and Notifications**

24 **a. Thank you letter from ARLAC**  
25  
26

July 20, 2020

A letter was included in the [meeting packet](#) from the Ashuelot River Local Advisory Committee (ARLAC) thanking the Conservation Commission for its donation. The Chairman echoed Conservation Commission sentiments from the previous month that the donation is a bargain for the benefits of ARLAC's work and he asked Vice Chair Clark to thank ARLAC again.

**4) Informational**

**a. Subcommittee Reports**

**i. *Outreach Subcommittee***

Vice Chair Clark asked Mr. Lamb whether a Facebook page could be activated for the Commission to post educational information such as on pollinator-friendly plant species, invasive species management, etc. As a lifelong environmental educator, Vice Chair Clark is happy to generate these posts and questioned whether she could post things on behalf of the Commission as a private citizen. Mr. Lamb could not provide a definite answer and would report back at the next meeting after more research.

In the interim, some possibilities were discussed:

- To be effective, a key element would be to ensure content stays up-to-date.
- While possibly more expeditious than waiting for City Staff to post on the Commission's behalf, it would be likely inadvisable/inappropriate for Conservation Commission members to manage an unofficial Facebook page as private citizens, for concern of serial conversation/decision making by members without quorum. Mr. Lamb would confirm.
- The [Commission webpage on the City website](#) is a definite location where City Staff can post information on behalf of the Commission.
- The [Community Development Department](#) and [Parks & Recreation Department](#) Facebook pages are public and one does not need a Facebook account to view these pages/posts, you can instead subscribe via email for updates. Mr. Lamb thinks both pages are avenues for Conservation Commission posts, managed by City staff, with both pages reaching possibly several thousand subscribers.

**ii. *ARM Fund Subcommittee***

No updates.

**5) Discussion Items**

**a. Airport CIP Wildlife Fence Project – Birding/Habitat Viewing Along Airport Road**

Mr. Lamb introduced the new Airport Manager of six months, Dave Hickling, who has tremendous airport experience. Mr. Hickling was not present during creation of the existing Airport Master Plan (AMP) that identifies the City's preferred alternatives for pending projects on the Keene Dillant-Hopkins Airport property. These projects include the installation of a fence to prevent wildlife from entering runway areas, which currently poses a significant safety and operations concern at the Airport. Mr. Lamb had provided Mr. Hickling context on the Commission's review/concern of the proposed Airport

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69 fence project over the last year with regard to wetlands impacts and interference with wildlife viewing  
70 from Airport Road.

71 Mr. Hickling introduced himself, his history in Airport Management, and his excitement to be relocated  
72 in New Hampshire. He reviewed past Conservation Commission meeting minutes on this topic and was  
73 appreciative of recent updates Mr. Bergman had shared. As such, he felt he grasped well the  
74 Commission's concerns with the fence to keep wildlife off the runway and away from aircraft. The fence  
75 project is programmed currently in FY-25 but he thinks it is a pressing issue and he is choosing to  
76 advance the project in the Capital Improvement Program (CIP). With the extensive time he spends on  
77 Airport Road, he understood the Commission's desire to preserve this amazing wildlife viewing  
78 resource.

79  
80 Regarding the Commission's concern with wetlands impacts, Mr. Hickling said his preference is to  
81 locate the fence closer to the runway on the other side of the wetlands but the Federal Aviation  
82 Administration (FAA) regulates acceptable distance of grounded fixtures from the runway. By locating  
83 the fence as close as acceptable to the runway, parts the fence would traverse wetlands, which is why  
84 Mr. Hickling thought the Airport Road alternative was preferred in the AMP. However, locating the  
85 fence along Airport Road essentially encloses the adjacent wetlands and therefore wildlife into the  
86 runway area, contradicting the fence's purpose. Mr. Hickling felt he could make a case to the FAA to  
87 allow the fence closer to the runway in the Object Free Area, which would truly minimize wetlands  
88 impacts. If the FAA denies that request, the only way to avoid wetlands impacts is to locate the fence  
89 along Airport Road, which is not his goal. Mr. Hickling shared the Commission's concern about a  
90 wildlife fence located along Airport Road obstructing significant recreation and wildlife viewing  
91 opportunities. Mr. Hickling agreed that it was his least preferred option and said if it is ultimately the  
92 only possibility, he would find ways to create wildlife viewing areas through the fence. Mr. Lamb  
93 referred to the end of Runway 14-32, where the Commission also had some concerns due to significant  
94 wildlife viewing. Mr. Hickling had overlooked the significance of that impact area and would have to  
95 report back with ideas; he would still have the same goal of locating the fence as close to the runway as  
96 possible.

97  
98 Mr. Bergman identified Mr. Hickling's preference of an option more aligned with Alternative One  
99 (closer to runway) in the AMP, although Alternative Two (closer to Airport Road) was selected as  
100 preferred in the AMP; Mr. Hickling agreed. Mr. Bergman referred to the end of Runway 14-32  
101 previously mentioned by Mr. Lamb and said there is a main marsh area with many pools that are prime  
102 habitat for several species such as bitterns and Virginia rails, among many others that are of concern for  
103 both wildlife viewing and species movement. Mr. Bergman added that running the fence as close as  
104 possible to the end of Runway 14-32 would also result in the fence traversing the wetland twice and  
105 causing perhaps greater impacts. He said that most bird species like bitterns are thought by the NH  
106 Audubon Society to be capable of flying over such a fence but the Virginia rails have also on occasion  
107 been seen walking across Airport Road in this vicinity. Mr. Bergman thought that protecting wetlands  
108 should be the primary goal and he is conflicted as an advocate of preserving wildlife viewing recreation.  
109 Mr. Bergman recalled a Commission discussion of an alternative in which the fence follows the tree line  
110 from the C&S hangar to Airport Road and continuing along the road to the Waste Water Treatment  
111 Plant (WWTP), which might have fewer wetland impacts but Mr. Bergman said would perhaps have the

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112 greatest impact on wildlife viewing opportunities. He also referred to the brook that crosses Airport  
113 Road near the WWTP that has been identified as a breeding ground for eastern ribbon snakes, which are  
114 a species of significant concern in the NH Wildlife Action Plan; the construction of a fence would likely  
115 have more impact on this species than the presence of the fence itself, but NH Fish & Game would  
116 likely have advice. Mr. Hickling welcomed Mr. Bergman for a visit to the Airport to look at the areas of  
117 concern.

118

119 Mr. Hickling's goal is to keep the fence as close to the runway as possible and to hopefully accomplish a  
120 hybrid of the two alternatives in the AMP to achieve the goal of aircraft safety with minimal auxiliary  
121 impacts. When funding becomes available to start the design phase for the fence, Mr. Hickling will  
122 ensure that representatives of the Conservation Commission participate to provide feedback on the  
123 impacts of different designs. His goal is to begin the design phase as early as FY-22. He reiterated that  
124 the AMP was not a mandate but rather guidance for a best option, and that guidance does not dictate the  
125 ultimate design.

126

127 Mr. Bergman questioned whether NH Department of Environmental Services would be involved with  
128 design choices and Mr. Hickling said yes, because of wetlands impacts, which he said is likely why the  
129 Airport Road option was favored in the AMP.

130

#### 131 **b. Land Use Code Project Update**

132

133 Mr. Lamb provided an update on the draft Land Development Code, which Staff has been working on as  
134 a long-term goal from the City's 2010 Comprehensive Master Plan. This project streamlined and  
135 simplified the City's various development standards (i.e., Zoning, Historic District, Planning, street  
136 standards, etc.) that occupied multiple locations throughout the City Codes, making the regulations  
137 challenging to navigate for developers, residents, and Staff. This effort was with the guiding principles  
138 of simplicity, efficiency (graphics vs. text), and consideration of long-term City goals. The Conservation  
139 Commission has heard updates on this project throughout its duration.

140

141 Mr. Lamb explained that this project was an effort to not rewrite the City's existing development  
142 standards, but rather to reorganize them; joining standards for all regulations. The new consolidated  
143 document is intended to be easier to navigate, reduce confusion, streamline the review process for all  
144 parties, and remove outdated/conflicting provisions. Mr. Lamb explained the objective of the project to  
145 update and modernize the downtown zoning districts to a form-based approach that will replace the  
146 familiar downtown Central Business District and Central Business Limited, among others; this objective  
147 aligns with community goals, creates tools for the future, and encourages new development. The new  
148 document creates a consistent, more user-friendly process for (re)development for residents and  
149 developers, while also allowing Staff to provide better service.

150

151 The Land Development Code includes some overlap with the Conservation Commission, with an  
152 emphasis on preserving natural resources throughout land development standards. Mr. Lamb recalled  
153 that in 2012-2014, a Conservation Commission subcommittee drafted the current Surface Water  
154 Protection Ordinance (SWPO), which established buffers around surface waters where development is

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155 prohibited; the buffers vary from 75' to 30' from the rural areas to the denser valley floor, respectively.  
156 Property owners could apply for Conditional Use Permits (CUPs) from the Planning Board to alter  
157 surface water buffers with permanent structures and the Conservation Commission had to review those  
158 permit applications. Mr. Lamb described two important areas of change between the current Surface  
159 Water Protection Ordinance and the new Land Development Code:

- 160 1. The SWPO established wetland/buffer types where the Ordinance did not apply, such as for  
161 manmade streams like significant portions of Beaver Brook channelized with concrete, where  
162 property owners did not need CUPs to build. Agricultural, fire, and irrigation ponds were exempt  
163 because they were wetlands constructed to support a development. Tax ditches were exempt  
164 from issuance of CUPs because they are natural streams that were excavated and deepened to  
165 accelerate drainage of surrounding lands. The City has maintained those ditches with edge  
166 mowing to remove woody vegetation and keep water flowing. A few years ago, the Commission  
167 suggested that the City remove tax ditches from the list of exempt activities. The Commission  
168 would discuss this substantial change further at a future meeting to determine if the current  
169 Commission shares the same point-of-view as previous Commissions. Mr. Lamb is happy to  
170 discuss the history of the SWPO with members to provide more background.
- 171 2. The SWPO as originally adopted required that if land was subdivided for a residential  
172 development, for example, the quantified wetland and buffer area could not count toward the  
173 minimum lot size zoning requirement. A few years ago, the CONSERVATION COMMISSION  
174 also requested removing this requirement because the protections offered by the SWPO itself  
175 through the creation of a buffer would provide adequate protection to the wetland.

176  
177 The new Land Development Code still requires that the Commission review CUP applications before  
178 the Planning Board can vote, requires delineation of wetlands so impact can be determined, and the  
179 buffer requirements remain the same. Mr. Lamb would share the draft Land Development Code with the  
180 Commission via email and will be available for discussion at upcoming meetings. The draft is currently  
181 under informal review with public outreach, and formal review would occur September-December 2020.

182  
183 Vice Chair Clark asked if the new document would reflect changes/reorganization of NH wetland rules.  
184 Mr. Lamb replied that the SWPO is more about buffers than wetlands themselves. Vice Chair Clark  
185 added that Barbara Richter was on the original SWPO Committee, is now the Director of the NH  
186 Association of Conservation Commissions, and could be a good resource on this subject.

187  
188 Mr. Bill asked whether Beaver Brook was included as exempt in the SWPO because it is channelized or  
189 was the decision based on size criteria for streams. Mr. Lamb replied that the Conservation Commission  
190 had a lot of discussion about Beaver Brook when developing the SWPO. Portions of Beaver Brook are  
191 clearly manmade and therefore have no buffer per se, though he said there would be value to a buffer in  
192 those areas because discharge surface water would get better treatment. Still, in such urbanized areas,  
193 establishing a standard for a buffer there was overwhelming and would have posed development  
194 challenges not ideal in an urban setting. Mr. Lamb said that at the time, some Conservation Commission  
195 members were concerned about projects directly adjacent to Beaver Brook, but the Zoning  
196 Administrator determined it as exempt because of the concrete walls. The Commission can continue this  
197 discussion.

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**c. Continued Discussion – Invasive Species Management**

Chair Von Plinsky said that after some more research, it seemed something could come to fruition for a deputized group of volunteers to help manage invasive species on City property. Mr. Lamb said he spoke with the Director of Parks, Recreation & Facilities, Andy Bohannon, who was open to the idea of educating citizens and creating a process to recognize their volunteer status as authorized to manage invasives on City property/parks/roadways, etc. They have a meeting scheduled to discuss this further and Mr. Lamb will report back with more ideas.

Councilor Williams shared the resource, [www.naturegroupie.org](http://www.naturegroupie.org), which is a New England organization that recruits outdoor volunteers. The UNH Cooperative Extension is very involved and he thought they could be a resource for expertise, educational materials, and volunteers. The Chairman added that there is an app that helps Nature Groupies and other interested New England citizens to track invasives. The Chairman will experiment with that app and report back at the next meeting. Councilor Williams said an easy way to begin engaging possible volunteers is to schedule a Nature Groupie meeting in Keene to gauge community interest. The Chairman believed that could be arranged with Covid-19 precautions.

Mr. Lamb recalled that citizens could not apply chemicals to invasives on City property. There are three City Staff members licensed to do so and in cases of large tracts, the City contracts outside services. Still, there are other ways that volunteers could be helpful.

**6) New or Other Business**

Mr. Bergman referred to a Keene Sentinel article about work on the Roxbury dams and the City being at greater risk of drought-induced water restrictions than in the past because reservoir levels are lower. Mr. Lamb said the City has two reservoirs in the Roaring Brook watershed, primarily in Roxbury – the Babbidge Dam is smaller and was repaired a few years ago and the Woodward Dam is larger but is currently under construction and water levels are lower. The primary work on the Woodward Dam began this summer and he was unsure when the work was going to finish. Due to the lower than normal surface water reserves, the City activated ground water wells to compensate and Council authorized Phase 1 water restrictions due to drought conditions.

Mr. Bergman questioned changes to the Community Development Department mission statement language. The Chairman said the language is accurate in the Department's budget but the change was not yet reflected on the website and it would be soon.

**7) Adjournment – Next Meeting Date: Monday, August 17, 2020**

There being no further business, The Chairman adjourned the meeting at 5:46 PM.

Respectfully submitted by,  
Katie Kibler, Minute Taker

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DRAFT

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241 July 26, 2020

242

243 Reviewed by Rhett Lamb, ACM/Community Development Director

244 Edits, Corinne Marcou

# Ashuelot River Local Advisory Committee

Washington Lempster Marlow Gilsum Sullivan Surry Keene Swanzey Winchester Hinsdale

7/20/2020

George Papadopoulos  
U.S. Environmental Protection Agency – Region 1  
5 Post Office Square, Suite 100 (06-1)  
Boston, MA 02109-3912  
Telephone: (617) 918-1579  
[Papadopoulos.George@epa.gov](mailto:Papadopoulos.George@epa.gov)

RE: Draft NPDES permit NH0100790  
Keene Wastewater Treatment Plant

Dear Mr. Papadopoulos:

The Ashuelot River Local Advisory Committee (ARLAC) convened in 1994 with the acceptance of the Ashuelot River into the NH Rivers Management and Protection Program. ARLAC represents the ten corridor towns of the Ashuelot River and acts in an advisory capacity to NHDES. ARLAC has implemented a river monitoring program since 2001 with the assistance of the NH Volunteer River Assessment Program. Our total phosphorus data is cited in the current draft permit. We have also commented on the 2006 draft NPDES permit for this facility. It is with this background that we offer our comments on the proposed NPDES permit for the Keene Wastewater Treatment Plant (WWTP).

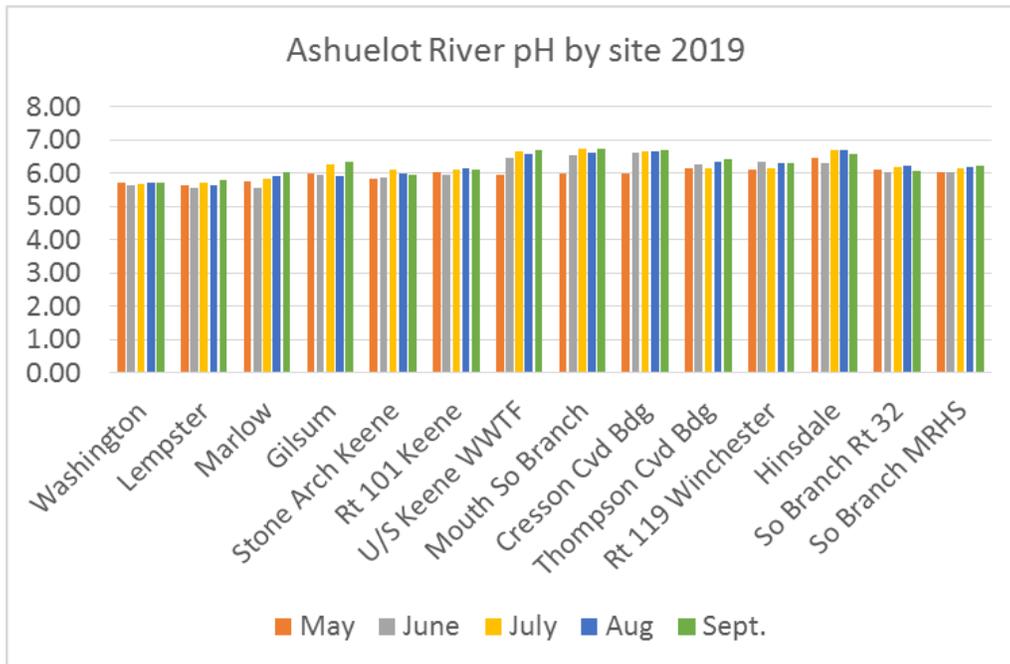
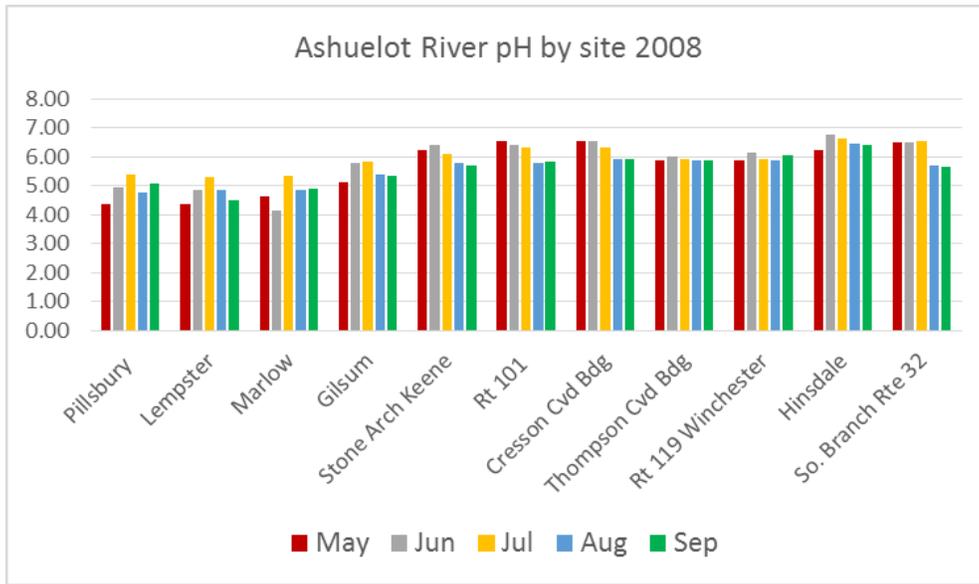
- The proposed average monthly phosphorus limit of .18 mg/L with a dilution factor of 2, results in an instream concentration of .09mg/L in the receiving water. Thereby this limit maintains the similar effect as the current permit limit of .2mg/L with a dilution factor of 2.08 also resulting in an instream concentration of .096mg/L. ARLAC has found significant improvement in the River total phosphorus levels since the Keene WWTP has managed for this nutrient. As cited in the fact sheet, river levels upstream of the WWTP are below the Gold Book criteria of .1mg /L. Levels downstream of this site, which includes some dilution from the South Branch, are also below the Gold Book criteria and would indicate the effect of the existing phosphorus limit for the WWTP has been protective using that standard. The following table shows phosphorus levels in mg/L from samples at the Cresson Covered Bridge, downstream of the WWTP and the South Branch confluence.

July, Aug, Sept 2015	July, Aug, Sept 2016	Aug, Sept 2017	July, Aug 2018	July, Aug 2019
.018, .021, .023	.015, .026, .020	.016, .012	.025, .024	.044, .018

However it is worth noting that NHDES Water Quality Standards (WQS) state levels of 0.026 - 0.049 mg/L as more than desirable.

- The Ashuelot River continues to be listed as impaired for low pH. The trend shows a lower pH in the upper reaches of the River upstream of Keene, but with readings increasing as the River flows through and downstream of the City. Following are charts showing the values obtained during our 2008 and 2019 monitoring seasons.

19 Spring St., Swanzey, NH 03446, (603) 352-0987



Over the years the pH of the Ashuelot River has been slowly trending closer to the NH WQS of 6.5-8, the cause for this increase remains debatable. As the WQS provides the optimum range for aquatic life and the Ashuelot has been slowly approaching this standard, ARLAC supports the continuation of its application to the Keene WWTP as a basis for pH limits.

Ideally a TMDL would better establish a basis for determining limits for the WWTP's effluent. The draft permit states it will be in effect for 5 years from the date of issuance. The current permit has been in effect for now 13 years. It is hoped a more timely review will occur for the next permit, and perhaps a completed TMDL will enable limits to be established in line with the actual conditions on the Ashuelot. But in the meantime we need to maintain limits that honor the standards established by the State.

Respectfully submitted,

Barbara Skuly, Chairman

EC: T. Sales, NHRMPP  
K. Blomquist, Keene Public Works  
A. Costa, Keene WWTP  
Keene Conservation Commission

# 2020 Building Better Together (UDO)

 <p><b>BUILDING BETTER TOGETHER</b> KEENE NEW HAMPSHIRE</p>	 <p><b>SIMPLE</b> New regulations will be easy to navigate &amp; will include graphics to outline a clear process, from start to finish.</p>	 <p><b>EFFICIENT</b> The updated structure will provide a set of clear procedures for development queries, &amp; will create a more streamlined application process – eliminating the need to navigate multiple points of contact.</p>	 <p><b>THOUGHTFUL</b> Although our regulations have worked in the past, they can be outdated &amp; confusing. This update will help guide us into the future, while protecting the crucial elements that make this a great place to live, work, &amp; play.</p>	<p><b>Surface Water Protection Overlay District</b></p> <p>Draft as of 5/13/19</p>
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## BACKGROUND:

The Surface Water Protection Overlay District was initially adopted in of August of 2013 with the intent of preserving and protecting the functions and values of wetlands and surface waters as recommended in the 2010 Comprehensive Master Plan. The Surface Water Protection Overlay District includes all land within a certain distance from the edge of surface waters. This land is intended to be in an undisturbed and natural condition and is called a buffer area. This buffer serves to capture, store and absorb rainfall, and act as a natural filter by capturing sediment, nutrients and pollutants from runoff, which can lead to improved water quality. It also provides shoreland stability and shade, which can lower water temperatures allowing water to hold more dissolved oxygen and support aquatic resource habitat.

Initially, a 100 foot buffer surrounding all surface waters in the City was proposed, which was later reduced to 75 feet in the Rural, Conservation and Agriculture Districts and 30 feet in all other districts. This Ordinance requires a conditional use permit from the Planning Board for proposed uses/activities within this buffer area.

In 2015, the Conservation Commission formed a subcommittee to review the Ordinance for inconsistencies and make recommendations for addressing these inconsistencies to City Council. This Subcommittee focused on the list of surface water exemptions, which include the City's tax ditches. For many years, the Natural Resource Conservation Service (NRCS) required that the City maintain these tax ditches, which have become part of the City's open drainage and storm water removal system. Although this requirement is no longer in effect, the City continues to manage and control vegetation along the banks of these tax ditches to ensure they do not become overgrown and to protect against flooding. The subcommittee of the Conservation Commission proposed amendments to the Ordinance in 2016 that would remove Tax Ditches from the list of exempted surface waters, would change the definition of the buffer, and would allow for vegetative maintenance and control of the buffer without the issuance of a conditional use permit. These amendments were presented before the PLD in December of 2016, at which time PLD recommended that the City would review and consider these changes as part of the Land Use Code Update.

The current ordinance is available for review via the following link:

[https://library.municode.com/nh/keene/codes/code\\_of\\_ordinances?nodeId=PTIICOOR\\_CH102ZO\\_ARTXVIS\\_UWAPR](https://library.municode.com/nh/keene/codes/code_of_ordinances?nodeId=PTIICOOR_CH102ZO_ARTXVIS_UWAPR)

## SUMMARY OF MAJOR CHANGES & REASONS:

- a) Reduced the purpose statement in length in an effort to promote readability without undermining the original intent of the Ordinance.
- b) Amended the definitions section as follows:
  - i. Relocated the Definitions section to the end of the Ordinance, however, the terms may ultimately go into a definitions chapter in the LDC.
  - ii. Removed terms from the Definitions section that are not referenced in the Ordinance (e.g. Basal Area, Stream Bed, Dredge, Hydrologically Connected).
  - iii. Removed the definition for Certified Wetland Scientist.

- iv. Edited the definition for Surface Water by consolidating it into one paragraph.
- v. At the recommendation of the Surface Water Subcommittee of the Conservation Commission, which proposed draft amendments to this Ordinance in 2016, staff modified the definition of buffer to remove the phrase “in and undisturbed and natural condition.”
- c) Significantly reorganized sections and content, as well as reworded certain sections of the Ordinance to promote readability and understanding without changing its meaning or intent.
- d) Added language to the Applicability Section to be clear that the provisions of this Ordinance do not apply to renovations or repairs of existing structures that do not result in an expansion of the structure’s footprint into or within the Surface Water Protection Overlay District.
- e) At the recommendation of the Surface Water Subcommittee of the Conservation Commission, staff amended the list of Exempt Surface Waters as follows:
  - i. Removed from the list - “Septage and manure lagoons”, “Silage Pits”, and “Ditches, streams or waterways that have been constructed or altered to manage drainage and/or flooding and that are under a management, use and maintenance agreement with state and/or federal agencies (commonly referred to as “tax ditches”).”
  - ii. Revised “Man-made sedimentation/detention/retention basins or ponds constructed to manage stormwater from a development project and/or streets, roads and highways.” to say “Man-made ditches and swales, sedimentation/detention/retention basins or ponds legally constructed to collect, convey, treat and/or control stormwater and spring runoff.”
- f) At the recommendation of the Surface Water Subcommittee of the Conservation Commission, staff amended the list of Permitted Uses in the district – “Maintenance and vegetative control of the buffer area.”
- g) Removed Open Space from the list of Permitted Uses as the wording is confusing. Staff felt it is apparent that Open Space would be allowed in the buffer, and therefore does not need to be included in the list.
- h) Revised the language for the section “Sec. 102-1492. - Pre-existing uses and lots.” and relocated it to the list of Permitted Uses. Included a note that the Zoning Administrator shall determine if all of the criteria have been met.
- i) Removed the requirement in Sec. 102-1494 of the current ordinance that the area of all surface waters be deducted from the calculation for minimum lot size.

**REMAINING ISSUES/QUESTIONS**

- Should we reconsider what would require a Conditional Use Permit and the process for review? Would it be preferred/possible for administrative review of applications and those that do not meet the standards would need to go to the Planning Board for approval? Staff intends to discuss this question further at the Steering Committee meeting on 5/17/19.
- Should the edits proposed by the Conservation Commission’s subcommittee in 2016 (as noted in the section above) be incorporated in the final draft?

**ATTACHMENTS:**

- A. Revised Surface Water Protection Overlay District Draft dated 05/13/19

## DRAFT SURFACE WATER PROTECTION OVERLAY ZONING DISTRICT

### PURPOSE

The purpose of this Ordinance is to:

- a) protect the functions and values of surface waters and, in particular, the buffers associated with these resources, which reduce the rate and volume of runoff;
- b) prevent the loss or degradation of natural stormwater storage, infiltration and conveyance capacity within the city;
- c) prevent water quality deterioration associated with stormwater runoff;
- d) maintain the health and holding capacity of natural surface and ground waters; and,
- e) protect the quality and connectivity of wildlife habitat and corridors.

### APPLICABILITY

- a) **General.** All land within the Surface Water Protection Overlay District, as defined in Section X, is subject to the standards set forth in this Article, unless otherwise noted.
- b) **District Definition.** The Surface Water Protection Overlay District is an area of land buffering all surface waters, which include perennial and seasonal streams, lakes, ponds, wetlands and wetland complexes, vernal pools, fens and sloughs. This buffer area is measured on a horizontal plane from either the top of the bank of a stream, or the ordinary high water mark of a river, or the reference line of a lake or pond, or the delineated edge of a wetland or change in soil type.
  1. **Buffer Width.** In the Rural, Agriculture, and Conservation Zoning Districts, the Surface Water Protection Overlay District is a 75-ft wide buffer. In all other zoning districts, this buffer is 30-ft wide.
    - a. **Buffer Reduction.** In specific cases, an applicant may be unable to comply with the terms of this Article and require a reduction in buffer width. This buffer area may be reduced to 30 feet in zoning districts requiring a 75-foot buffer and to 10 feet in zoning districts requiring a 30-foot buffer at the discretion of the Planning Board if the applicant for a Conditional Use Permit provides extraordinary mitigation, replication, and/or restoration of surface waters and wetlands, and/or open space preservation measures.
- c) **Conditional Use Permit.** A Conditional Use Permit issued by the Planning Board may be required as specified in this Article for certain uses and structures within the Surface Water Protection Overlay District.
- d) **Renovations and Repairs.** The provisions of this Article shall not apply to renovations or repairs of existing structures that do not result in an expansion of the structure's footprint into or within the Surface Water Protection Overlay District.

### DETERMINATION OF SURFACE WATER BOUNDARIES

- a) In determining the size of a surface water, any portion of the surface water that may be located on an adjacent parcel or in an adjacent municipality shall be included based on best available information.
- b) Roads, drainage culverts, or other man-made features shall not constitute an interruption in the delineation of the size of the surface water.
- c) For all new subdivisions and new or modified site plans, where maps or field investigations indicate that surface water may be present on a proposed development site, the location, area, and limits of all surface waters shall be field determined and delineated by a New Hampshire Certified Wetland Scientist.

1. Any delineation completed without clear evidence of vegetation, from the current or prior growing season, shall be verified during the subsequent growing season at the owner's expense.
  2. Revisions to surface water delineations and to any required buffer areas shall be submitted to the city as a revision to the original plan. Any proposed development shown on the revised plan shall be modified to bring the plan into compliance with this Article.
- d) The boundaries of any required buffer areas, as specified in this article, shall be marked as such on the site with stakes and flagging, or permanent markers along the buffer perimeter. Such demarcation shall remain in place until all construction is complete and has been inspected and approved by the Community Development Department.
  - e) Where an area is not designated on the plan as a surface water and the Planning Board, after consultation with the Community Development Department and/or the Conservation Commission, believes it to be a surface water, the Planning Board may require the applicant to supply the findings of a New Hampshire Certified Wetland Scientist as to the character of the area, at the expense of the applicant.
  - f) When an area has been designated as surface water and an applicant believes that the area is, in fact, not a surface water area, then the applicant, at their own expense, may supply the findings of a New Hampshire Certified Wetland Scientist attesting to the character of the area. The Planning Board will issue a finding on wetlands identification and may request alternative reports from the applicant, at the expense of the applicant.

#### **EXEMPTIONS**

The following surface waters shall not be subject to this Article.

- a) Man-made ditches, swales, sedimentation/detention/retention basins or ponds legally constructed to collect, convey, treat and/or control stormwater and spring runoff
- b) Man-made agricultural/irrigation ponds
- c) Fire ponds and cisterns

#### **PROHIBITED USES**

The following are expressly prohibited from the Surface Water Protection Overlay District:

- a) Subsurface wastewater disposal systems
- b) Salt storage including the storage of road salt or sand treated with road salt
- c) Automobile junk yards/salvage yards, service and/or repair shops
- d) Hazardous waste facilities
- e) Bulk storage in amounts greater than those for household or agricultural use of chemicals, petroleum products or hazardous materials
- f) Earth excavation operations as defined in **Article X** of this LDC
- g) Off-site dumping or disposal of snow and ice collected from roadways or parking areas, not including snowplowing of existing roadways
- h) Storage or disposal of solid waste, liquid or leachate waste, animal wastes or byproducts
- i) Landfills, solid waste transfer stations, recycling facilities, incinerators, or composting facilities
- j) Animal feedlot operations

#### **PERMITTED USES**

The following are permitted in the Surface Water Protection Overlay District without a Conditional Use Permit, subject to any provisions specified in this Article.

- a) Maintenance and vegetative control of the buffer area.

- b) Agricultural activities and operations as defined in RSA 21-34-a and governed by RSA 430 subject to i) Best Management Practices for agriculture as defined in this Article; ii) compliance with all related state and local laws; and exceptions listed below
- c) Forestry, tree farming, and logging operations, subject to Best Management Practices as defined in this article, and compliance with all related state and local laws
- d) Water impoundments, when required state and/or federal permits have been issued
- e) Ground water withdrawal well for a single residential dwelling or duplex facilities, and wells for the City of Keene drinking water supply
- f) Geothermal heating and cooling systems including but not limited to groundwater wells and subsurface heat exchange installations
- g) Trails constructed and maintained in accordance with best management practices as defined in this article
- h) Wildlife or fisheries management activities
- i) Educational activities and scientific research consistent with the purpose and intent of this article
- j) New residential driveways subject to the following provisions:
  - 1. The driveway serves to access uplands on a lot(s) of record that existed at the time this Article was adopted.
  - 2. The driveway provides access for no more than 2 existing lots on a shared driveway.
  - 3. There is no reasonable alternative location to site the development on the lot that would avoid the disturbance of lands within the Surface Water Protection Overlay District.
  - 4. The driveway is designed to minimize any disruption to lands within the Surface Water Protection Overlay District.
  - 5. All applicable NH Wetlands Bureau permits have been acquired for any proposed disturbance of surface waters regulated by the State.
  - 6. All surface water resources and applicable buffer areas have been delineated by a New Hampshire Certified Wetland Scientist and are shown as part of a driveway permit application.
- k) All normal maintenance of existing roadways and utilities including winter maintenance.
- l) Repair, repaving, replacement, and reconstruction of existing roads, bridges, culverts and drainage systems and utilities.
- m) Construction of compensatory flood storage excavation under **Article X** as long as no part of the compensatory flood storage excavation is within a wetland as defined in this Article and subject to issuance of a floodplain development permit according to **Article X**.
- n) Construction of new or expansion of existing single-family and two-family residential structures and associated accessory structures on lots that legally existed before the adoption of this Article, provided that the following criteria are met. The Zoning Administrator shall be responsible for determining whether these criteria are met.
  - 1. It is not feasible to place the structure on a portion of the lot that is located outside of the Surface Water Protection Overlay District.
  - 2. The structure is set back as far as reasonably possible from the edge of the surface water.
  - 3. Applicable erosion control measures are in place prior to and during construction.
  - 4. Any disturbance to the surrounding buffer area is repaired and restored upon completion of construction.
  - 5. A minimum 30-foot buffer is maintained from surface waters in lots in the Rural, Conservation, and Agriculture Zoning Districts, and a 10-foot buffer is maintained from surface waters in all other zoning districts.

6. Any alteration to a surface water is made in accordance with all applicable state and federal laws, administrative rules, and regulations.

#### CONDITIONAL USE PERMIT

- a) A Conditional Use Permit issued by the Planning Board shall be required for the following when located within the Surface Water Overlay Protection District.
  1. Construction of a new structure or expansion of an existing structure, with the exception of those structures specified in Section X of this Article, that expands the footprint of that structure within the Surface Water Protection Overlay District
  2. Construction of new driveways for residential use that would disturb or cross lands within the Surface Water Protection Overlay District.
  3. Construction of new roads, driveways for non-residential uses, and parking lots
  4. Construction of new stormwater management facilities and structures or improvements, including but not limited to, sedimentation/detention/retention ponds, drainage swales, and erosion control devices
  5. Construction of compensatory flood storage excavation under Article X which requires the issuance of a wetland permit
- b) A conditional use permit shall not be required for impacts to areas within the District that are under the jurisdiction of the New Hampshire Department of Environmental Services when a state wetlands permit or when a state Shoreland Water Quality Protection Act permit has been issued.
- c) **Criteria for granting a conditional use permit.** The Planning Board shall issue a Conditional Use Permit for the activities described in Section X of this Article if it finds that all of the following criteria have been met.
  - i. The proposed use and/or activity cannot be located in a manner to avoid encroachment into the Surface Water Protection Overlay District.
  - ii. Encroachment into the buffer area has been minimized to the maximum extent possible, including reasonable modification of the scale or design of the proposed use.
  - iii. The nature, design, siting, and scale of the proposed use and the characteristics of the site including but not limited to topography, soils, vegetation, and habitat are such that when taken as a whole, will avoid the potential for adverse impacts to the surface water resource.
  - iv. The buffer area shall be left in a natural state to the maximum extent possible. In issuing a Conditional Use Permit, the Planning Board may establish conditions of approval regarding the preservation of the buffer including the extent to which trees, saplings and ground cover shall be preserved.
    - a. Dead, diseased, unsafe, or fallen trees, saplings, shrubs, or ground cover may be removed.
    - b. Stumps and their root systems shall be left intact in the ground, unless removal is specifically approved in conjunction with a Conditional Use Permit granted by the planning board.
    - c. Exotic, invasive trees, saplings, shrubs, or ground covers, as defined by NHDES, may be removed. The stumps and root balls of exotic, invasive species may also be removed by hand digging and/or hand cutting.
    - d. Preservation of dead and living trees that provide dens and nesting places for wildlife is encouraged. Planting of native species of trees, shrubs, or ground cover that are beneficial to wildlife is encouraged.
    - e. Where there has been disturbance or alteration of this buffer during construction, excavation, or grading, re-vegetation with native species may be required by the planning board.
- (f) The Planning Board may consider the following to determine whether allowing the proposed encroachment will result in an adverse impact on the surface water resource:

- (1) The size, character, and quality of the surface water and the buffer being encroached upon.
- (2) The location and connectivity of the surface water in relation to other surface waters in the surrounding watershed.
- (3) The nature of the ecological and hydrological functions served by the surface water.
- (4) The nature of the topography, slopes, soils, and vegetation in the buffer that encompasses the surface water.
- (5) The role of the buffer in mitigating soil erosion, sediment and nutrient transport, groundwater recharge, flood storage, and flow dispersion.
- (6) The extent to which the buffer serves as wildlife habitat or travel corridor.
- (7) The rate, timing and volume of stormwater runoff and its potential to influence water quality associated with the affected surface water or any associated downstream surface waters.
- (8) The sensitivity of the surface water and the buffer to disruption from changes in the grade or plant and animal habitat in the buffer zone.

#### **CONDITIONAL USE PERMIT APPLICATION PROCEDURE**

- a) All applications for a conditional use permit under this section of the article shall be made to the Planning Board following the procedures set forth in Article X of this LDC as they may be amended.
- b) **Referral to the conservation commission.** Upon receipt by the Community Development Department, all applications for a Conditional Use Permit shall be forwarded to the Conservation Commission a minimum of 5 business days prior to the Commission's next regularly scheduled meeting.
  - i. Upon receipt of a Conditional Use Permit application, the Conservation Commission may conduct an evaluation of the application and provide advisory comments to the Planning Board. Such evaluation shall be based on the Conditional Use Permit criteria set forth in this Article.
- c) Submission requirements for a Conditional Use Permit shall include the location of the buffer area, details showing the proposed encroachment into the Surface Water Protection Overlay District, and any information necessary to demonstrate that the proposed encroachment will not cause adverse impacts to the surface water resource, or design details that demonstrate that proposed mitigation will prevent adverse impacts to the surface water resource.
- d) All information pertaining to delineating the location, area, and limits of surface waters, along with the associated buffers as specified in this Article, shall be clearly shown on the proposed conditions plan and on an existing conditions plan.

#### **DEFINITIONS**

For the purposes of the surface water protection overlay district, the following definitions apply:

*Alteration* means any change or modification of habitat, land, water, or existing structure along surface water resources.

*Bank* means the transitional slope beginning at the edge of a surface water body, the upper limit of which is defined by a break in slope as defined in Wt. 101.06, N.H. Code of Administrative Rules, as may be amended or updated.

*Best management practices* means the structural, non-structural and managerial techniques that are recognized to be the most effective and practical means to prevent increases in and/or reduce stormwater volumes and rates of flow, reduce point source and non-point source pollution, and improve stormwater quality, and protection of the environment.

- (1) With Respect to Forestry: *Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire*, NH Department of Resources and Development, 2004 (or later edition, as may be amended or updated), *Best Management Practices for Forestry: Protecting New Hampshire's Water Quality*, UNH Cooperative Extension, 2006 (or later edition, as may be amended or updated).
- (2) With Respect to Agriculture: *Best Management Wetlands Practices for Agriculture in New Hampshire*, NH Department of Agriculture, July 1993 (or later edition, as may be updated or amended), the *Manual of Best Management Practices for Agriculture in New Hampshire*, NH Department of Agriculture, July 2008 (or later edition, as may be amended or updated).
- (3) With Respect to General Regulations: *Best Management Practices for Urban Stormwater Runoff*, NH Department of Environmental Services, 1996, (or later edition as may be amended or updated.) *Innovative Stormwater Treatment Technologies Best Management Practices Manual*, NH Department of Environmental Services, May 2002, (or later edition as may be amended or updated). Environmental Protection Agency Websites "Construction Site Stormwater Control" and "Post-Construction Stormwater Management in New Development and Redevelopment", <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>.
- (4) With Respect to Golf Courses: *Manual of Best Management Practices for Agriculture in New Hampshire*, NH Department of Agriculture, July 2008 (or later edition, as may be amended or updated), the *Best Management Practices to Control Nonpoint Source Pollution: A Guide for Citizens and Town Officials*, NH Department of Environmental Services, January 2004 (or later edition, as may be amended or updated).
- (5) With Respect to Trails: *Best Management Practices for Erosion Control During Trail Maintenance and Construction*, NH Department of Resources and Economic Development, Division of Parks and Recreation, Bureau of Trails 1994, updated in 2004 (or later edition, as may be amended or updated).

*Bog* means a wetland area distinguished by stunted evergreen trees and shrubs, peat deposits, poor drainage and/or highly acidic soil and/or water conditions per Wt. 101.10, N.H. Code of Administrative Rules, as may be amended or updated.

*Buffer* for purposes of this article means an area that is designed to remain vegetated to protect adjacent surface water functions and values from adverse impacts and provide habitat for wildlife. The buffer shall be measured on a horizontal plane from the top of the bank of a stream, or from the ordinary high-water mark of a river, or from the reference line of a lake or pond, or from the delineated edge of a wetland or change in soil type.

*Fen* means a wetland area distinguished by sedge, reed, shrub or forest, peat deposits, poor drainage, which has neutral pH and moderate to high nutrients.

*Intermittent stream* means a stream that flows for sufficient time to develop and maintain a defined channel, but which might not flow during dry portions of the year or during long-term periods of drought as defined in Wt. 101.47, N.H. Code of Administrative Rules, as may be amended or updated.

*Ordinary high-water mark* means the line on the shore, running parallel to the main stem of the river, established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the immediate bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas as defined in RSA 483-B:4 X1a, as may be amended or updated.

*Perennial stream* means a stream that flows year-round in a defined channel.

*Pond* means any year round standing body of water one acre or more in area, as measured from the mean annual high water mark.

*Reference Line* means (a) for natural fresh water bodies without artificial impoundments, the natural mean high water level as determined by the Department of Environmental Services; (b) for artificially impounded fresh water bodies with established flowage rights, the limit of the flowage rights; (c) for water bodies without established flowage

rights, the waterline at full pond as determined by the elevation of the spillway crest; (d) for rivers, the ordinary high water mark as defined in RSA 483-B:4 XVII, as may be amended or updated.

*Slough* means wetland channels or series of shallow lakes. Water is stagnant or may flow slowly on a seasonal basis.

*Surface water* for the purposes of this article, includes perennial and seasonal streams, lakes, ponds, and tidal waters within the jurisdiction of the state, including all streams, lakes, or ponds bordering on the state, marshes, water courses, and other bodies of water, natural or artificial. Surface water includes wetlands as defined in RSA 482-A:2.X and NH Code of Administrative Rules Env-wt 100-900 including: Bogs, ephemeral stream, intermittent streams, marshes, surface water bodies, swamp, wetlands, wet meadows. Surface water also includes vernal pools, fens, sloughs, and wetland complexes.

*Vernal pool* means a seasonal or intermittent pool of water providing essential breeding habitat for certain amphibians and invertebrates and does not support fish. Vernal pool status can be confirmed by but not limited to evidence of breeding by at least one vernal pool indicator species such as wood frogs, spotted salamanders, blue spotted/Jefferson salamanders, and/or the presence of fairy shrimp. Evidence of breeding includes calling wood frogs, salamander spermatophores, egg masses, and/or larvae of wood frogs or salamanders.

*Wetlands* means those areas that are inundated or saturated by surface or ground waters at a frequency and duration sufficient to support, and under normal conditions do support, a prevalence of vegetation adapted for life in saturated soil conditions.

*Wetlands complex* means a series of small wetland areas that are hydrologically connected by a common water table.

# 2020 Building Better Together (UDO)

 <p><b>BUILDING BETTER TOGETHER</b> KEENE NEW HAMPSHIRE</p>	 <p><b>SIMPLE</b> New regulations will be easy to navigate &amp; will include graphics to outline a clear process, from start to finish.</p>	 <p><b>EFFICIENT</b> The updated structure will provide a set of clear procedures for development queries, &amp; will create a more streamlined application process – eliminating the need to navigate multiple points of contact.</p>	 <p><b>THOUGHTFUL</b> Although our regulations have worked in the past, they can be outdated &amp; confusing. This update will help guide us into the future, while protecting the crucial elements that make this a great place to live, work, &amp; play.</p>	<p><b>Hillside Protection Overlay District</b></p> <p>Draft as of May 13, 2019</p>
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## BACKGROUND:

- The City adopted the Hillside Protection Overlay District originally in October of 2009 and later amended it in March of 2010. This ordinance was designed to protect against flooding and erosion/sedimentation that could occur as a result of the City’s steep slopes areas being developed. Impacts to steep slopes, such as the cutting and filling of these areas for building structures, can lead to changes in the watershed, which can contribute to flooding downstream. The current Ordinance limits the types and degree of development that can occur on hillsides / slopes with a grade of over 15%. It also includes standards for site preparation, grading and construction.
- This current Ordinance requires a conditional use permit issued by the Planning Board for any removal of vegetation, grading of slopes, erection of buildings, addition of impermeable surfaces, installation of sewage disposal systems, and/or removal of native soil that impacts greater than 20,000 sf of precautionary slope area on one lot.
- In addition, the current Planning Board Site Plan and Subdivision Regulations specifies that all prohibitive slopes and 50% of precautionary slopes be deducted from the calculation of minimum lot size.

The current ordinance is available for review via the following link:

[https://library.municode.com/nh/keene/codes/code\\_of\\_ordinances?nodeId=PTIICOOR\\_CH102ZO\\_ARTXIIIH\\_IPR](https://library.municode.com/nh/keene/codes/code_of_ordinances?nodeId=PTIICOOR_CH102ZO_ARTXIIIH_IPR)

## SUMMARY OF MAJOR CHANGES & REASONS:

- The primary changes to this ordinance are the reorganization and streamlining of the existing text and structure to improve readability and ease of understanding. No changes are proposed that would alter the original intent and meaning of this ordinance or that would impact the standards for review.
- Staff are proposing to eliminate the requirement in the Planning Board Regulations that all prohibitive slopes and 50% of precautionary slopes be deducted from the calculation of minimum lot size.
- Staff are proposing that graphics be included to support the following sections of this regulation:
  - **“Siting of buildings.**  
The highest point of a structure that requires any permit shall be located at least 50 vertical feet below and 50 horizontal feet from the top of a ridgeline or hilltop, measured at approximate right angles to the ridgeline or the hilltop. Ridgeline shall be defined as a narrow elevation of land or similar range of hills or mountains representing the highest elevation of such landforms which also include prohibitive and/or precautionary slopes. When building on slopes, structures shall be set into topography using partial earth sheltering. “
  - **“Clearing for views.**  
Trees may be removed beyond the building area for a width of clear cutting not to exceed 25 feet and extending outward from the edge of clearing within the building area at an angle of 45 degrees or less on both sides, to a point down-slope where the tops of the trees are at the same elevation as the ground floor of the building. The 25-foot opening may be at any point along the down-slope boundary.”

## REMAINING ISSUES/QUESTIONS

- There needs to be a cross reference to the Conditional Use Permit Section of the LDC, which would contain more information about the application procedure.

- There should be a map established for these precautionary and prohibitive slopes.

**ATTACHMENTS:**

- A. Revised Hillside\_Standards\_05-13-19 dated May 13, 2019

## DRAFT HILLSIDES PROTECTION OVERLAY DISTRICT

### PURPOSE

The purpose of the Hillside Protection Ordinance is to protect the city's ecological and scenic resources from undue adverse impacts resulting from development of steep slopes, ridgelines, and visually sensitive lands, and to guide development of those hillside areas where development can be safely accomplished through carefully designed, low-impact development.

### APPLICABILITY

- a) The standards set forth in this Article shall apply to all land area with prohibitive and/or precautionary slopes as defined below.
  1. *Prohibitive slopes* are slopes of greater than 25 percent where any land area has an elevation gain of greater than ten feet over a horizontal distance of 40 feet or less.
  2. *Precautionary slopes* are slopes of 15 percent up to 25 percent where any land area has an elevation gain of ten feet over a horizontal distance between 66 feet and 40 feet.
- b) Slopes in excess of 15 percent that were constructed during the lawful development of a site in accordance with this Article shall not count toward the future delineation of steep slopes or the future calculation of the area of the lot affected by steep slopes.

### REVIEW AND APPROVAL AUTHORITY

- a) An evaluation for compliance with this Article shall be performed by the City Engineer at the time of application for any subdivision, site plan, building permit, driveway permit, and/or any construction or improvements subject to review as stated in this article. The City Engineer may require special studies or information in order to make this determination.
- b) All driveway permit applications with driveway layouts that affect land areas subject to this Article shall be referred to the Planning Board for approval.
- c) A Conditional Use Permit from the Planning Board shall be required if a total area of precautionary slopes greater than 20,000 sf on an individual lot is proposed to be altered by removal of vegetation, grading of slopes, erection of buildings, addition of impermeable surfaces, installation of sewage disposal systems, and/or removal of native soil.

### GENERAL STANDARDS

- a) Development, including clearing, grading and construction, on all land areas subject to this Article shall be designed, sited, or carried out in a manner that does not cause undue adverse impact to the physical environment and shall provide for the retention of native soil, stabilization of slopes, and prevention of erosion or sedimentation of streams and watercourses.
- b) Existing natural and topographic features, including the vegetative cover, shall be retained on lands subject to this Article except where removal of vegetation and grading are expressly permitted and subject to applicable standards set forth herein.
- c) Structures, where permitted, shall be designed and sited in a manner that limits the removal of vegetation and grading, and avoids natural features such as prominent knolls, ridgelines, ravines, and natural drainage courses.
- d) Erosion and sediment control measures, soils stabilization measures and stormwater management systems shall be designed and installed in accordance with best management practices, contained in the most recent version of "Erosion and Sediment Control Design Handbook for Developing Areas of New Hampshire" and shall be adequate to mitigate potential adverse impacts associated with the disturbance of steep slopes, during and after construction.

## SPECIFIC STANDARDS

### 1. Prohibitive Slope Standards

- a) Removal of vegetation, grading of slopes, erection of buildings, addition of impermeable surfaces, installation of sewage disposal systems, new streets, and/or removal of native soil within prohibitive slope areas shall not be permitted except as expressly indicated in this section, and subject to the corresponding use also being permitted in the applicable zoning district.
- b) The following shall be permitted in prohibitive slope areas subject to the standards set forth in this Article.
  - i. Construction of a new driveway across a prohibitive slope area to access a new single-family dwelling on a lot that existed at the time this Article was adopted, provided that there is no alternative driveway location that would avoid the prohibitive slope.
  - ii. Expansion of a building that existed either wholly or partially within the prohibitive slope area at the time this Article was adopted, provided that:
    - a. The area of the expanded footprint within the prohibitive slope area does not exceed 25 percent of the portion of the original footprint located in the prohibitive slope area; and
    - b. No additional future expansion within the prohibited slope area shall be permitted.
  - iii. Installation of public or private utility lines (e.g. power, phone, cable, gas, water, sewer, and storm drainage) when it can be demonstrated that there is no other alternative for siting the utility line.
  - iv. Earth excavation operations subject to standards set forth in the Zoning Ordinance.
  - v. Forestry, logging and/or woodcutting activities allowable under state law and permitted and/or performed in accordance with any state requirements.
  - vi. Construction of trails, ski lift towers and lift service roads associated with commercial alpine or cross country ski activities.

### 2. Precautionary Slope Standards

- a) The following shall be permitted in precautionary slope areas subject to the standards set forth in this Article.
  - i. Installation of public or private utility lines (e.g. power, phone, cable, gas, water, sewer, and storm drainage) when it can be demonstrated that there is no other alternative for siting the utility line.
  - ii. Earth excavation operations subject to standards set forth in the Zoning Ordinance associated with this activity.
  - iii. Forestry, logging and/or woodcutting activities allowable under state law and permitted and/or performed in accordance with any state requirements.
  - iv. Construction of trails, ski lift towers and lift service roads associated with commercial alpine or cross country ski activities.
  - v. Agricultural activities with the exception of any structures.
- b) The following shall be permitted if removal of vegetation, grading of slopes, erection of buildings, addition of impermeable surfaces, installation of sewage disposal systems, and/or removal of native soil does not exceed a total of 20,000 sf of precautionary slope area on an individual lot. This 20,000 sf limit may be increased subject to the issuance of a Conditional Use Permit issued by the Planning Board.
  - i. Construction of a single-family dwelling and/or all buildings and accessory structures normally associated with residential uses (e.g. garage, shed, workshop, barn), if permitted in the underlying zoning district.
  - ii. Construction of a driveway or shared driveway.
    - a. For shared driveways, the area of removal of vegetation, grading of slopes, addition of impermeable surfaces, and/or removal of native soil within the shared portion of the combined driveway shall not count toward the limit of 20,000 sf.
  - iii. Construction of a city street or private road.

3. **Standards for Commercial Alpine and/or Cross Country Ski Trails, Ski Lift Operations and Service Roads**

- a) Trails associated with outdoor recreation as a business shall:
  - i. Meet best management practices for trail design and stormwater management;
  - ii. Be sited to follow natural contours of the slope; and,
  - iii. Retain and reuse old farm roads or old logging roads to limit clearing and disruption of the landscape
- b) Service roads associated with outdoor recreation as a business shall:
  - i. Not exceed a 15 percent slope at any point along the grade of the service road;
  - ii. Not exceed a width of 16 feet for the travel lane and 1 foot for a shoulder on either side;
  - iii. Follow the natural contours of the slope to minimize disturbance of vegetation and soils;
- c) Cutting and filling of slopes to accommodate ski trails or service roads crossing prohibitive and precautionary slop areas shall be limited and shall comply with applicable grading standards set forth in this Article.

4. **Site Preparation, Grading, and Construction Standards**

- a) **Siting of buildings.**
  - i. The highest point of a structure that requires any permit shall be located at least 50 vertical feet below and 50 horizontal feet from the top of a ridgeline or hilltop, measured at approximate right angles to the ridgeline or the hilltop. Ridgeline shall be defined as a narrow elevation of land or similar range of hills or mountains representing the highest elevation of such landforms which also include prohibitive and/or precautionary slopes.
  - ii. When building on slopes, structures shall be set into topography using partial earth sheltering.
- b) **Grading.** Graded areas shall not be larger than the area necessary to construct all buildings, accessory buildings or structures, plus the area needed to accommodate access, parking, and turnaround areas.
- c) **Clearing for views.**
  - 1. Trees may be removed beyond the building area for a width of clear cutting not to exceed 25 feet and extending outward from the edge of clearing within the building area at an angle of 45 degrees or less on both sides, to a point down-slope where the tops of the trees are at the same elevation as the ground floor of the building. The 25-foot opening may be at any point along the down-slope boundary.
  - 2. A plan detailing any proposed clearing for views shall be submitted with applications for subdivisions, building permits and site plan review.
- d) **Drainage and stormwater management.**
  - 1. A drainage management system designed to accommodate the stormwater volumes associated with a 50 year, 24-hour storm event shall be required to manage stormwater runoff from all new impervious surfaces located on land areas subject to this Article.
  - 2. Runoff shall be dispersed within the subject lot.
  - 3. Natural drainage courses shall not be disturbed and shall be incorporated as an integral part of the drainage and stormwater design.

**INTERPRETATION**

- a) Where an interpretation is needed as to the boundary location of prohibitive and precautionary slopes in relation to a given lot, a determination shall be made by the City Engineer based on a field survey prepared by a New Hampshire Licensed Surveyor, provided by the applicant, of contour intervals of 2 feet or less; or, in the absence of a field survey, based on contour intervals of 2 feet or less determined by aerial photogrammetric methods (available in the City GIS database).

1. Any party aggrieved by any such determination may appeal to the Zoning Board of Adjustment. The party contesting the location of the district boundary shall have the burden of proof of any such appeal.

#### **CONDITIONAL USE PERMIT APPLICATION REQUIREMENTS**

- a) A plan or plans sealed and signed by a New Hampshire Licensed Engineer or Surveyor shall be submitted and the following is required:
  1. All existing and proposed lot or lots and a depiction of topographic features based on a field survey or aerial photogrammetry with contour intervals of 2 feet or less.
  2. A delineation of all prohibitive and precautionary slope areas on the lot or lots, the size of each area identified, and a calculation of the total area of prohibitive and precautionary slopes on the parcel to be subdivided.
  3. A building area showing the location of each proposed structure, existing structure, and/or expansion to existing structures on an existing or proposed lot or lots that includes prohibitive and precautionary slopes.
  4. The location of proposed driveways and parking areas and a profile showing the slope of any proposed driveway that will cross a precautionary or prohibitive slope area.
  5. The location of test pits and proposed on-site wells and septic systems.
  6. The limits and area calculations of proposed land areas within the precautionary slope areas that will be subject to clearing of vegetation and grading.
  7. The location of existing and proposed roads and trails.
  8. The location of existing or proposed public or private utility lines.
  9. Existing or proposed earth excavation operations.
  10. Ski trails, ski lift towers, and lift service roads.
  11. Any other information necessary to demonstrate compliance with this article.
  12. Application fee.
- b) It shall be the sole responsibility of the applicant to demonstrate that its application complies with all standards in this article.
- c) An application may be reviewed by a qualified third party entity. The applicant will be required to pay for the third party review. Selection of the third party entity shall be at the discretion of the City Engineer.
- d) Upon completion of their review, the City Engineer shall advise the permit granting authority regarding compliance of the application with the standards of this Article.