



Vermont Department of Environmental Conservation
Watershed Management Division
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Montpelier, VT 05620-3522



July 17, 2017

Kristen Leahy, Zoning Administrator
Town of Hardwick
P.O. Box 523
Hardwick, Vermont 05843
[by E-Mail]

Subject: Flood Hazard Review—Zoning Application No. 2017-020
Pavillion, interpretive kiosk, trail work
Atkins Field on Granite Street

Dear Kristen:

I offer the following comments for zoning application 2017-020. The purpose of this letter is to assist the community in meeting its permitting obligations for development in the floodplain under the National Flood Insurance Program (NFIP) and to provide state review in accordance with 24 VSA §4424.

According to the effective FEMA Flood Insurance Rate Map (7/17/2002), the project is located in the Special Flood Hazard Area—Zone AE of Cooper Brook. Zone AE is the land area expected to be underwater during the Base Flood or the flood having at least a 1% chance of occurring each year. The Special Flood Hazard Area (SFHA) on Cooper Brook includes a designated regulatory Floodway.

All development in the SFHA must meet the requirements of NFIP and the Hardwick Flood Hazard Area Regulations (contained in Hardwick Unified Development Bylaws).

Before Hardwick approves the proposal, please review the following:

1) The project must avoid the Floodway.

Section 5.3 (H)(1) and NFIP regulations prohibit development in the Floodway (unless completely below grade or analyzed by an engineer). The Floodway must be kept free of items that could obstruct or divert floodwaters. The map sketch prepared by Helm Construction appears to be conceptual, so it is hard to know what the proposed final locations are for items relevant to this application, especially the bog bridge and kiosk, which are not shown. The map scale is marked approximate, and the map does not show the floodway boundary relative to the proposal. To avoid encroachment in the Floodway, Hardwick will need the exact location for the proposed items and confirmation that these locations are out of the Floodway (such as, a site plan certified by a land surveyor for the current proposal, or at least measured horizontal distances from existing landmarks and the stream bank to the proposed items). The town is also encouraged to include a permit condition specifically stating the project must be located outside of the Floodway.

2) The pavilion must be open-sided or be treated as a new structure.

Section 5.3 G (3) and NFIP regulations require new structures (buildings) to be elevated to or above the base flood elevation. However, under NFIP, a recreational pavilion is not considered a structure

and is not required to be elevated, as long as the pavilion is open-sided without walls or enclosed spaces. The proposed pavilion appears to have one wall. To minimize blocking floodwater and catching debris, I recommend the wall be raised so there is an opening beneath the wall (2' or more of vertical open space). I also recommend including a permit condition that specifies the pavilion will not have enclosed spaces.

3) The pavilion and other development must be constructed to avoid flood damage, use flood damage resistant building materials, and include protection of any electrical service.

Section 5.3 G (1) requires the pavilion be designed to be reasonably safe from flooding. Hardwick still needs a little more information about how this requirement will be met. In particular, the building materials used below base flood elevation must be flood-damage resistant as described in [FEMA Technical Bulletin 2](#) (such as pressure treated lumber) and any utilities (e.g., electrical service) must be designed to be protected from flooding. If electrical service is planned for the pavilion, I recommend the town require electrical lines be housed in watertight conduit and any outlets and fixtures be elevated well above the base flood elevation to address 5.3 G (1)(e).

4) Development must be anchored. Section 5.3 G (1)(b) requires items to be anchored to prevent collapse, flotation, or lateral movement. The town should require design details for how the kiosk will be anchored.

5) Minimizing fill is recommended to protect floodplain function.

No fill is described in the application materials, but the town should make sure there is not potential for filling in the SFHA. If fill is planned, I recommend the town obtain the volume of fill proposed and determine if it is in accordance with the bylaw. Fill is prohibited in the floodway. Although Hardwick bylaws allow fill for the elevation of buildings in the SFHA fringe (outside the Floodway) with Conditional Use Review (Table 2.8 C), I recommend fill be avoided altogether to preserve as much floodplain space as possible to allow floodwater to slow down and pass naturally through the area.

- Pavilion: It's not clear what site work is planned for the pavilion "floor" after the existing building is demolished. If a gravel base is desired, I recommend it be matched to the surrounding ground elevations. Adding gravel may not be necessary given the abundance of granite waste in the soil.
- Bog bridge: The generic design sheet for the bog bridge shows an area of backfill. Fill in the SFHA should be avoided for the bog bridge.

6) Require as-built documentation. I recommend the town permit require notification to the zoning office of project completion and a site inspection by a town official or submittal of other as-built documentation to make sure the project is built as approved, with all anchoring, design, location and other conditions of the permit met.

Thank you for contacting the Vermont Rivers Program. Please feel free to contact me at (802) 490-6162 or sacha.pealer@vermont.gov if you have questions.

Sincerely,



Sacha Pealer

Regional Floodplain Manager

River Corridor & Floodplain Protection Program