

**Thetford Planning Commission
November 17, 2009 – Minutes**

Present: Liora Alschuler, Stuart Blood, Kevin O’Hara, Wayne Parks (Chair), Lori Howard, Rick Howard, Laurie Burnham

Absent: none

Guests: Gretchen Alexander, State of Vt; Li Shen, Conservation Commission; Cy Severance, Connecticut River Joint Commissions; Libby Chapin, Lake Fairlee Association

7:18: Meeting called to order by Wayne Parks, Chair.

7:26: Public Comment: None.

7:20: Review of prior minutes, 10/20: Stuart Blood, move to adopt; 2nd Kevin; 5 in favor, 0 abstain, 0 opposed. Adopted as amended.

Review of prior minutes, 11/3: amendments offered by Stuart and Liora; Stuart Blood, move to adopt; 2nd Kevin. Adopted as amended.

7:26: no change to tracker or draft

7:27: Laurie Burnham introduced the issue of riparian buffers and reviewed the issues requiring expert consultation. Gretchen Alexander, river scientist, State of Vermont, Agency of Natural Resources, Dept of Environment Conservation, Water Quality Division (gretchen.alexander@state.vt.us; 802/www.waterquality.org) expert in stream erosion dynamics, presented to the PC on reducing fluvial erosion and flood damage hazards. Most flood damage from erosion, not inundation. Traditional channel management by containment had unintended, destructive consequences. National flood insurance program based on inundation, not erosion. We are in a cycle of rising costs, risks and damage to ecosystem and property.

How to break this cycle? Adopt a strategy of corridor protection.

What is the area subject to erosion hazard? Fluvial geomorphology. State has develop a set of protocols for:

1. Phase 1 -- Watershed assessment: underlying conditions (completed for Ompompanousuc)
2. Phase 2 -- Rapid stream assessment: field work (not completed for Thetford, only for Strafford)
3. Phase 3 -- River corridor planning guide:

Phase 2: This phase studies the degree of equilibrium between transport capacity and sediment load (degradation or aggregation). Either state of imbalance is more unstable than if it were in balance. When channel has access to a floodplain, it will remain in equilibrium; if not, it will adjust until it attains a new equilibrium.

Primary tool for protection: a meander belt width based on reference channel width measured against a meander centerline and meander beltwidth. This establishes a channel management boundary for equilibrium. A river may wander outside this, but can remain in equilibrium if kept within.

Also coming into play is the erosion hazard rating which depends on the river surroundings.

FEH: fluvial erosion hazard overlay district -- has many uses including emergency response, planning, bridge and culvert replacment, advice to land owners, Act 250, etc. As an overlay district provides guide for avoidance; they have model language for planning.

Phase 2 typically focuses on larger tributaries; smaller streams can adopt a simple, standard setback (for erosion protection). Thetford Conservation Commission grants for Phase 2 were rejected. Earliest an assessment could be done would be 2011.

Advantages of avoidance: safety, minimizes flood damage, low cost, healthier rivers for water, aesthetics, fish & wildlife; hope in future will align with Federal guidelines and would provide greater aid.

SSB: Are there simple guidelines?

GA: Most tributaries would fall into category where 50' setback recommended for erosion, although there may be other considerations. Setback just applies to structures, not same as a buffer, although characteristics may help stability.

Recommendations:

- 50' < 2 sq miles, any slope
- 100 ft if > 2 sq miles and steep

Maps are available that show the size of the watershed.

2nd presentation: importance of buffers for fish & wildlife in riparian areas

Buffers have 4 primary functions:

Water quality:

- temperature, cool temps hold O₂,
- flow & groundwater recharge: controls gradual water level change, rather than spike, provides greater ground water recharge
- sediment & nutrient removal: key is infiltration that slows water, allows it to infiltrate into the soil; also filters; lessens sediment reaching water (can kill fish, can fill in spaces needed for water life); nitrification: rapid plant growth, can lead to fishkills
- Pollutant removal: no filtration

Aquatic habitat

- water quality (as above)
- woody debris -- critical for cover, colonization, sediment retention; scour and deposition
- food supply

Channel form & function

- habitat complexity, with variety; complexity adds stability by reducing erosion
- boundary conditions: create stability

Terrestrial habitat

- Natural communities
- Terrestrial habitat

What makes a good buffer?

1. Support full range of functions
2. Naturally vegetated (not invasive species; want native, woody vegetation)
3. Undisturbed duff layer
4. Vertical complexity of vegetation: understory & overstory
5. landscape level connectivity: connect the corridor to other wildlife areas; often a function of river corridors because undisturbed

How big should a buffer be?

Most functions can be met by 100'; for smaller streams, 50'.

Jericho has a setback (buffer) depends on stream order (primary, secondary, tertiary) according to the Vermont hydrography data set for Jericho. Some streams don't show up. The order of mapped streams determine buffer width. It was not controversial when adopted in Jericho.

How much of the effect is for the Town itself, how much for downstream?

GA: in Vermont, we typically contain the full watershed in-state. Main direct benefit to landowners, channel stability and to community, public safety.

Options: Corridor vs setback?

Setback moves with the river. Meander zone does not increase encroachment.

What restrictions for corridor vs buffer zone? Buffer usually talks about vegetation, assumes prohibition of structures. Fundamentally two different strategies for two different purposes; corridor w/out buffer won't provide full benefits of vegetation next to the stream.

Would a buffer allow selective logging? unsure; could be regulated by Town, perhaps through best management practice. (Millie Archer might be a good reference.)

Progress of shoreland protection in Vt? Buffer bill introduced, didn't go very far, pushback wrt to rivers, more than lakes. NH, Maine have stricter regulation than Vt. One concern is the capacity to monitor. How is it policed, if at all? Typically reporting by neighbors, or notification related to development.

Estimate of how much land at issue? not exactly, would have to be exceptions for agriculture.

Tax implication: would it change the assessment? haven't heard about this.

How to implement? with setback maps? preferable not to map, rather, map streams, depend on that. Gretchen could create such a map for Thetford. Need to determine which map to use as the base map -- Vt hydrography is the most up to date, others have different levels of detail, influences what is called a primary stream.

(Gretchen provided copies of the presentations: posted on Planning Commission site:

Here: [http://lists.valley.net/lists/d_read/thetford-](http://lists.valley.net/lists/d_read/thetford-planners/Memos_from_other_depts/ThetfordFEH111709.ppt)

[planners/Memos_from_other_depts/ThetfordFEH111709.ppt](http://lists.valley.net/lists/d_read/thetford-planners/Memos_from_other_depts/ThetfordFEH111709.ppt) and

here: http://lists.valley.net/lists/d_read/thetford-planners/Memos_from_other_depts/Riparian_talk-gga.ppt

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Discussion of buffers around Lake Fairlee: Libby discussed the challenges. Most efforts have gone into milfoil eradication, however, some now are addressing other serious issues.

8:55: Wetlands, final draft discussion:

WP: should the 100' prohibition on building or structures be the same width as the 50' buffer, or, in addition to it?; Oct. 20th minutes indicate 50' for the buffer and an addition 50' for the setback, which would equal 100', as written. We are unclear what the State recommends in terms of a setback in addition to a buffer.

Septic needs to be approved by the State and State minimum for buffer is clear; issue is the prohibition on any structure in the setback area. Maybe the prohibition should be according to the type of structure.

Intent is to prohibit "structures" (per flood regulations) or to allow building right up to the buffer?

SB: Unclear, if the intent is not to disturb the buffer. Does building on the edge of the buffer disturb the function of the buffer? Else, need to stipulate that development won't disturb the buffer.

LH: feels that restriction on disturbance of the buffer is adequate;

LA: Some intermediate restriction appropriate, as long as it is clear; need not be 50'; can be "do not disturb" or "setback" w/same restrictions as flood
KO: need to ensure protection of the buffer, mechanism, wording is something that we can explore. He is willing to see the language from Hanover, others
LB: intent of the wetlands buffer is to protect the ecosystem; does not think it would be onerous, thinks that "do not disturb" language would be ambiguous;
RH: Buffer protects the wetland; don't need to protect the buffer; if not comfortable with the buffer, increase it. Land up to the buffer should be fair game.
SB: Question is whether 50' is adequate or not.
KO: Purpose of "do not disturb" language is to provide protection of the buffer zone.

Other changes: delete redundant sentence at end of paragraph "Information available to the ZA...".

Agreed to delete.

Application Requirements: this section will be placed elsewhere, with application requirements. Move point "d." to the body of the regulation.

Suggest deleting paragraph "According to Title 24, Chapter 117, §A4 4461, of Development Review Procedures..." and the subsequent "Therefore..." Agreed to delete.

Kevin will work with Laurie on language to consider for final vote at next meeting.

9:48 Wildlife Habitat & Protection of Forest Resources

SB: Motion to accept the language of Section 6.04 (A), (B), seconded by KO. Discussion of whether paragraph (B) (1) should apply more broadly than to subdivision. LA suggest amending to read, seconded by RH: "Configuration of the lot lines to allow for ongoing forest management of the majority of the parcel." Unanimous, in favor of amendment.

RH: Previously, had abstained; now, concerned with (B), 4. related to "adjacent land", would this affect other people's property? Should be clear that the setbacks are on the land being developed, not the neighboring property. SB friendly amendment, second by KO to read "Creation of setbacks and buffers greater than the setbacks and buffers set forth elsewhere in this Zoning Bylaw." Unanimous, in favor of amendment.

LB: Questions reference to the Town Plan, the methods, the role of the experts and the mechanism for triggering review. No specific amendments suggested.

WP: Opposed to the draft, feels this is new territory, will be tremendous public objection.

Call for vote: In favor: Blood, O'Hara, Alschuler, R. Howard, L. Howard; Opposed: Parks, Burnham. Motion passed.

10:23: Review of Timeline: Assignments for first December meeting: Riparian buffer, discussion of draft; Affordable housing, first draft; Energy Efficiency, first draft; Traditional Patterns of Settlement, first draft. Procedures: PUD procedures, first reading.

10:25: Old business, New business: none

10:25: Adjourn

Respectfully submitted,

Liora Alschuler
Clerk, Thetford Planning Commission