



Special Meeting Minutes
May 12, 2014

TOWN OF OXFORD

S.B. Church Memorial Town Hall
486 Oxford Road, Oxford, Connecticut 06478-1298

Oxford Conservation Commission / Inland Wetlands Agency

Special Meeting Minutes
May 12, 2014
7:00 pm, Oxford Town Hall

Special IW meeting was called to order by Chairman M. Herde at 7:10 pm.

Roll Call by Chairman M. Herde, Commissioner Tom Adamski; Commissioner Bill Richter, Commissioner Sue Purcella Gibbons

Staff: Andrew Ferrillo (I.W. Enforcement Officer), Denise Randall –Secretary

Absent: Commission E. Stewart

Chairman M. Herde stated: We have a little bit to go over with the REMA report and asked if everyone read the report.

All Commission members stated that they read the report.

Mr. Brian Baker (applicant's engineer from Civil 1) stated: I worked on the report all weekend and I have a response to the R.E.M.A. report which I will go over with you all now.

Below is a copy of the response from Mr. Baker:

May 12, 2014

Michael Herde, Chairman
Oxford Conservation Commission, Inland Wetlands Agency
Town of Oxford
486 Oxford Road
Oxford, Connecticut 06478

RE: The Hurley Group
Lots 5R & 8R
8 Morse Road &
119 Hurley Road

Dear Chairman Herde,

May 12, 2014

Michael Herde, Chairman
Oxford Conservation Commission, Inland Wetlands Agency
Town of Oxford
486 Oxford Road
Oxford, Connecticut 06478

RE: The Hurley Group
Lots 5R & 8R
8 Morse Road &
119 Hurley Road

Dear Chairman Herde,

We have received a review letter from REMA Ecological Services, LLC dated May 9, 2014 for the above referenced project. Accordingly, please find three sets of revised site plans dated May 12, 2014.

In Section 3.0 "Proposed Conditions: Summary of Findings" of the REMA letter there are twelve suggested modifications to the plan set. Stated below are each of the modifications

which were suggested and our response as to how they have been incorporated into the plans;

C1. The "filter berm" for the southern basin expansion, as shown on the detail on Sheet 6 of 10, shows a topsoil outer layer. We question the long-term performance of this layer, and would recommend a coarser layer of stone to replace it, such as modified riprap. We would also recommend that the bottom layer of the filter berm be elevated by approximately 4-6 inches in order to provide for the semi-permanent ponding of water in this expanded portion of the detention basin.

R1. We have revised the filter berm detail on page 6 of the site plans in accordance with the recommendation and modified the elevation of the filter berm on the site plans accordingly.

C2. The bottom elevation of the proposed southern basin expansion would be at 573.80, which is the same as the existing basin. This means that during a prolonged portion of the growing season, based on the vegetation observed, groundwater seepage is expected. We would recommend that the applicant propose planting live emergent propagules of

plants such as wool grass, green bulrush, and arrowhead to supplement any seed mix and to provide a dense marsh/meadow community to treat runoff.

R2. We have included 300 herbaceous emergent plants to be planted in the southern expansion area per the recommendation. The plans and the plant list have been updated accordingly.

C3. We would recommend that the topsoil for the expanded portion of the detention basin be at least 10-inch thick and be enriched with organics for a total organic content by weight of at least 12 percent.

R3. We agree with the recommendation and have added a note specifying the topsoil requirement in the landscaping plant list and notes on Sheet 10 of the plans.

C4. The applicant proposes to modify the outlet to the existing detention basin by blocking up a 12-inch rectangular orifice and replacing it with a 7-inch pipe. We would recommend that a trash rack be installed to protect the pipe against clogging by detritus and debris.

R4. A trash rack detail has been added to Detail Sheet #7 in accordance with the recommendation.

C5. While the applicant provides sufficient storage for the water quality volume (WQV) at the southern basin, a portion of the existing basin is being filled which represents a water quality volume for the portion of Morse Road that drains to it. We estimate that this volume is at least 1,000 cubic feet. Therefore the existing detention basin while not be as efficient is treating runoff, particularly after vehicular traffic increases to Morse Road represented by the proposal. At a minimum the applicant should calculate the WQV requirements of the existing system, and also consider modifying the existing basin expansion (downstream of the filter berm) to recoup the lost WQV.

R5 The Water Quality Volume calculation for the existing Morse Road storm drainage has been completed (see attached worksheet). In order to accommodate the additional Water Quality Volume we have added an additional permeable berm the create renovation area "C". This area will hold the WQV from the existing roadway and allow it to slowly permeate through the permeable berm for filtration while exposing the stormwater to vegetation in renovation area "C" for further renovation.

C6. As with our review of the previous development iteration at this site (2009) we continue to maintain that a low 12-inch high deflector berm be placed in the existing detention basin to route flows along a much longer flow path to the outlet than is currently enjoyed. This will fix the obvious short-circuiting problem. Moreover, a formal sediment forebay utilizing an additional filter berm surrounding the existing inlet pipe, would also enhance the stormwater renovation capability of this detention basin.

R6 A 12-inch high deflector berm has been added to the detention basin in accordance with the recommendation. An additional filter berm around the existing inlet pipe has also been added to increase the sediment removal potential of the inlet area.

C7. The northern bioretention basin (i.e. rain garden) is sized for the water quality volume, provides an adequate media specification, and appropriate plantings. The applicant's soil test pit data show that at least a two foot separation to seasonal groundwater table based on soil indicators (i.e. mottles). However, it is quite probable that the groundwater will rise higher within soils in the late winter and early spring. Therefore, we would recommend that an underdrain system be installed at least two feet below the basin bottom (i.e. >583.0) to ensure that the media is always free of water between storm events. The underdrain can consist of small diameter perforated pipes (e.g. 2 to 3-inch ID) in a bed of stone and be allowed to discharge directly to the wetland at a small stone splash pad. The outlet pipe trench can be excavated into the wetland using hand tools and/or a mini- excavator.

R7 An underdrain has been added up gradient of the northern bioretention area per the recommendation and a detail of the underdrain has been added to Sheet 7 of the plan set.

C8. The applicant should provide specific long-term maintenance notes for the bioretention basin (i.e. rain garden). The general notes on the plans are not specific enough for these systems. For instance, inspections after significant storms (i.e. > 1-inch) should take place during the first year of operation, and quarterly thereafter. If water remains ponded in this system more than 48 hours following a rainstorm, then mitigation of media surface and/or of the media itself would need to take place.

R8 The maintenance notes for the storm drainage system and more specifically the rain garden have been modified to be more specific and include the recommendations listed above. The notes also state that "all aspects of the storm drainage system must be maintained in good working condition in accordance with the intent of these site plans."

C9. Buffer enhancements to the existing wetland just west of the northern bioretention basin are recommended by REMA in a previous section. From previous section-(REMA recommends that the applicant provides an understory and mid-story planting scheme (i.e. shrubs and a few trees) to better buffer the wetland, just westerly of the proposed northern water quality basin, where the understory is presently sparse. Such buffer enhancement plantings are likely to grow well in the moderately well drained, somewhat low-nutrient soil, but only if planted within 10 to 15 feet of the new forest edge. We would recommend clonal species that would spread, such as northern arrowwood and sweet pepperbush.)

R9 A buffer enhancement area consisting of red maple, flowering dogwood, northern arrowwood and sweet pepperbush has been added per the recommendation. The plant list on Sheet 10 has been updated accordingly.

C10. As discussed above, the easterly portion of the wetland, which sits somewhat higher than the rest of the wooded swamp, is seasonally saturated and is fed by groundwater that it receives from the east. Under proposed conditions, the contributing groundshed will be covered with impervious surfaces. This will diminish the quantity of groundwater to this portion of the wetland and would likely dewater it. To mitigate for this direct impact, we would recommend that an infiltration trench be designed for near the top of the fill slope, just westerly of the proposed guardrail, and that all the roof water from Building B be directed here. The trench could be stretch from about wetland flags No. 11 to No. 16. It could be about two feet wide and at least 5 feet deep, and be filled with processed gravel or crushed stone wrapped in filter fabric. We recommend that the gravel or stone be red-Triassic materials, such as arkose (brownstone) or trap rock, in order to replenish minerals to groundwater.

R10. An infiltration trench has been designed in accordance with the recommendation. We have placed the infiltration trench near the bottom of the fill slope so as not to compromise the integrity of the fill slope with excess water. The trench is 180' long by 3' wide and 4' deep. It will handle runoff from one-third of the building B roof and will provide groundwater recharge for the wetlands area. A detail for the trench has been included on sheet 7 of the plan set and the sizing calculations have been attached to this letter.

C11. Since the existing detention basin is, in our opinion, a regulated area, then activities within its upland review area should be considered. The proposal shows a steep 2:1 slope down to the basin, and erosion control blankets/netting. A wildlife conservation seed mix is being proposed. We would recommend that the bottom half of this new slope, to about elevation 578.0, be seeded with the New England Roadside Matrix Upland Seed mix, which can be obtained from the same supplier as the other seed mixes specified on the plan. This seedmix incorporates shrubs seeds from species such as grey dogwood, and staghorn sumac, and will provide a good buffer to the wildlife that utilizes the basins.

R11. We agree with the recommendation and have revised the plans to indicate the Roadside Matrix Upland Seed Mix be utilized on the lower slopes of the basin. We have also included the seed mix in the landscaping plant list and notes on Sheet 10 of the plans.

As we have addressed the specific comments and incorporated all of the recommendations

found in the REMA report we concur with REMA's conclusion that this application will not

constitute an adverse impact to the riparian regulated resources on the site, or the functions

and values that they provide.

If you have any questions please feel free to contact us.

Sincerely,

CIVIL 1

Brian J. Baker, P.E., CPSWQ, CPESC

Cc: Tanya Carver, Chairman, Oxford Planning & Zoning Commission

WATER QUALITY VOLUME CALCULATIONS FOR
Lot 5R & 8R Morse Road (PER DEP 2004 STORMWATER QUALITY MANUAL)
12-6-13
Revised 5-12-14

Water Quality Volume (WQV) = $1'' \times R \times A / 12$

Where R = Volumetric Runoff Coefficient = $0.05 + 0.009 \times I$

I = Percent impervious cover

A = Site area in acres

TO STORMWATER RENOVATION AREA "A" (EXPANDED AREA OF
DETENTION
BASIN)

A = 5.80 acres

I = 3.21 ac = 55.3%

R = $0.05 + 0.009 \times 55.3 = 0.548$

WQV (Drainage Area) = $1'' \times 0.548 \times 5.80 / 12 = .265 \text{ ac-ft} = 11,538 \text{ CF}$

WQV Required = 11,538 CF

Total volume provided by Renovation Area "A" = $0.278 \text{ ac-ft} = 12,066 \text{ CF}$

Total volume provided = $0.278 \text{ ac-ft} = 12,066 \text{ CF}$

TO STORMWATER RENOVATION AREA "B" (RAIN GARDEN)

A = 0.96 acres

I = 0.70 ac = 72.9%

R = $0.05 + 0.009 \times 72.9 = .706$

WQV (Drainage Area) = $1'' \times 0.706 \times 0.96 / 12 = .054 \text{ ac-ft} = 2,358 \text{ CF}$

WQV Required = 2,358 CF

Total Volume provided by Renovation Area "B" = $0.057 \text{ ac-ft} = 2,500 \text{ CF}$

EXISTING MORSE ROAD DRAINAGE TO EXISTING DETENTION BASIN

A = 13.35 acres

$$I = 0.85 \text{ ac} = 6.4\%$$

$$R = 0.05 + 0.009 \times 6.4 = .107$$

$$\text{WQV (Drainage Area)} = 1'' \times 0.107 \times 13.35 / 12 = .119 \text{ ac-ft} = 5,185 \text{ CF}$$

$$\text{WQV Required} = 5,185 \text{ CF}$$

$$\text{Total Volume provided by Renovation Area "C"} = 0.125 \text{ ac-ft} = 5,450 \text{ CF}$$

Hurley Group

Lot 5R & 8R Morse Road

Oxford, CT

DRAINAGE CALCULATIONS FOR SIZING OF INFILTRATION TRENCH
FOR ONE-THIRD OF BUILDING B ROOFTOP AREA

ZERO INCREASE IN VOLUME

100-YEAR DESIGN STORM

SCS Runoff Curve Number Method:

$$Q = (P - 0.2S)^2$$

$$/ (P + 0.8S)$$

and

$$S = 1000 / \text{CN} - 10$$

Where:

Q = runoff (in.)

P = rainfall (in.)

S = potential maximum retention after runoff begins (in.)

CN = runoff curve number

V = Volume

Existing Conditions:

Area of Drainage Being Altered = 10,167 sf

100% Grass/Meadow

Type B Soil

CN = 61

$$S = 1000/61 - 10 = 6.39$$

$$Q = (7.0 - 0.2(6.39))^2$$

$$/ (7.0 + 0.8(6.39)) = 2.70 \text{ in.} = 0.23 \text{ ft.}$$

$$\text{Volume} = 10,167 \text{ sq. ft.} \times 0.23 \text{ ft.} = 2,338 \text{ cu. ft.}$$

Proposed Conditions:

Area of Drainage Being Altered = 10,167 sf

100% Impervious

$$CN = 98$$

$$S = 1000/98 - 10 = 0.204$$

$$Q = (7.0 - 0.2(0.204))^2$$

$$/ (7.0 + 0.8(0.204)) = 6.761 \text{ in.} = 0.56 \text{ ft.}$$

$$\text{Volume} = 10,167 \text{ sq. ft.} \times 0.56 \text{ ft.} = 5,693 \text{ cu. ft.}$$

$$\text{Increase in Volume} = 5,693 \text{ cu. ft.} - 2,338 \text{ cu. ft.} = 3,031 \text{ cu. ft.}$$

$$\text{Percolation Rate of 30 min./in. for 24 hour period} = 48 \text{ in./24 hours} = 4'/24 \text{ hours}$$

$$\text{Area of infiltration trench surface area} = 170' \times 10' = 1,700 \text{ sf} \times 4'/24 \text{ hours} = 6,800 \text{ cu. ft.}$$

$$\text{Volume required} = 3,031 \text{ cu. ft.}$$

$$\text{Volume provided} = 6,800 \text{ cu. ft.}$$

Alternate Calculation – Instantaneous 1" of runoff from impervious surface:

$$\text{Area} = 10,167 \text{ sf} \times 1'/12'' = 847 \text{ cu. ft. required}$$

$$\text{Volume of Infiltration trench (assume 40\% void ratio in stone)} = 180'l \times 4'd \times 3'w \times 0.4 = 864 \text{ cu. ft. provided.}$$

Chairman M. Herde stated: I'm very pleased with the attitude of the applicant and applicant's professionals because every application comes in with some sort of room for improvement and you took the advice, without just saying my plan is perfect.

Mr. Baker responded: I think Mr. Logan's recommendations were reasonable.

Commissioner T. Adamski added: I think REMA did a very thorough report, he did a really good job.

I.W.E. Officer A. Ferrillo also added: Its important that you mention that it's a much better plan than what was originally submitted as far as protecting that wetland.

Chairman M. Herde stated: I'm happy with the improvements.

Commissioner T. Adamski asked: The only question I have is, I know there are some invasives up on that site now, do we need to have a condition in here to go back at the end of the year, or at the end of 2 years to remove any invasives that start coming back up?

Chairman M. Herde asked: That start spreading around from the construction?

Mr. Baker replied: That is part of our maintenance plan. Obviously you won't have any plantings other than your landscaping, up in this area (pointing to the map). We do call for on the maintenance schedule, on the rain garden and detention area, that its part of the annual inspection, to check for invasives and remove them from those areas.

Chairman M. Herde added: Can you also put there that the Enforcement Officer review at the same time and do a joint inspection.

Commissioner S. Purcella Gibbons asked: You had mentioned the trash rack that your going to be cleaning, you said in the plans, once a year, is that enough?

Chairman M. Herde replied: It's kind of an as is necessary and/or a minimum of 1 year, I believe.

Mr. Baker added: What would happen if that clog was going to rise over, its going to be at basin and only hold water in this upper area (pointing to the map) so if this has a little more water than its supposed to, we have another 12 "outlet that's a foot and half off the bottom so all of the sudden your basin is holding a foot and half of water, than something around the trash that needs to be cleaned out. Now we did a much smaller basin than this in Woodbury, that's about 300 yards from my house through the woods, and we did an outlet structure there with an even shorter route from the inlet side to the outlet point and its been there for 5 years and there has never been anything on that trash rack.

Chairman M. Herde added: The kind of device like this is only as good as somebody noticing in needs to be cleaned.

Commissioner B. Richter agreed: You have to clean it.

I.W.E. Officer A. Ferrillo stated: The other thing that should be addressed is If an approval is made by the Commission that would void all previous approvals.

Chairman M. Herde stated: There is only one plan.

I.W.E. Officer A. Ferrillo stated: There is only one plan and any previous approvals will be null and void as a result of this approval.

Chairman M. Herde stated: Is anyone in favor to make a motion.

MOTION made by **Commissioner Tom Adamski** to approve, with conditions for application **(IW 14-14)** The Hurley Group, 119 Hurley Road, 2 lots. Assessors Map 18, Block 32, Lots 2 and 6F. **Two Conditions:** When maintenance and inspections are performed for stormwater control structures in a 1 year period any invasives will be removed and the enforcement officer should be invited on any inspections and any previous approvals will be null and void as a result of this approval of 2 lots. **Seconded** by **Commissioner T. Adamski** **All in favor 5-0.**

Permit Expires: 5/12/2019

Meeting was adjourned on a **MOTION** by Chairman M. Herde **seconded** by **Commissioner T. Adamski** at 8:03 pm.

Respectfully submitted,



Denise Randall
OCCIWA- Secretary

14 MAY 22 PM 3:13
TOWN OF GRAFTON, CT
Margaret A. West
TOWN CLERK