AGENDA

Inland Wetland Agency
Regular Meeting
Monday, August 2, 2010
Council Chambers, Audrey Beck Building

Call to Order: 7:00 PM

Review of Minutes of Previous Meetings and Action Thereon:
7.06.2010 - Regular Meeting
7.13.2010 - Field Trip

Communications:
Conservation Commission: W1459 - Baker, Thornbush Rd
GM monthly business memorandum

Old Business:
W1459 - Baker - Thornbush Rd - flood proofing 109 Thornbush R

New Business:
Agent Approval:
W1460 - Lambert - 1461 Stafford Rd - 12x16 garden shed 80' from wetland.

Modification Request:
W1441 - Kleinfelder - 7 Storrs Rd - groundwater remediation

New Application:
W1461 - Elshakhs - 23 Bundy La - above ground pool in buffer

Reports of Officers and Committees:

Other Communications and Bills:
Habitat

Adjournment:

PAGE
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DRAFT MINUTES
MANSFIELD INLAND WETLANDS AGENCY
Regular Meeting
Tuesday, July 6, 2010
Council Chambers, Audrey P. Beck Municipal Building

Members present:	R. Favretti (Chairman), M. Beal, K. Holt, B. Pociask, P. Plante, B. Ryan,
Members absent:	J. Goodwin, R. Hall, G. Lewis,
Alternates present:	K. Rawn
Alternates absent:	F. Loxsom, V. Stearns
Staff present:	G. Meitzler (Wetlands Agent)

Chairman Favretti called the meeting to order at 7:00 p.m. and appointed alternate Rawn to act in members' absence.

Holt MOVED, Beal seconded, to add to the agenda under New Business, an application from Baker of 109 Thronbush Road, File # W1459. MOTION PASSED UNANIMOUSLY.

Minutes:
6-07-10 – Pociask MOVED, Rawn seconded, to approve the 6-7-10 minutes as written. MOTION PASSED with all in favor except Plante and Ryan who disqualified themselves.

Communications:
The 6-16-10 draft Conservation Commission minutes and the 6-24-10 Wetlands Agent's Monthly Business report were noted.

Wetlands Agent Meitzler stated that he has not had any return contact from Mr. Chernushek, and added that he was able to view the site from a neighboring property and it remains in stable condition.

Old Business:
W1455 - St.Jean - Hickory Lane - above ground pool in buffer
Holt MOVED, Plante seconded, to grant an Inland Wetlands License under the Wetlands and Watercourses Regulations of the Town of Mansfield to Mike and Patty St. Jean (file W1455) for the installation of a 27-foot diameter above-ground pool, on property owned by the applicants located at 43 Hickory Lane, as shown on a map dated June 2, 2010 and as described in other application submissions. This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned upon the following provisions being met:

1. Appropriate erosion and sedimentation controls (as shown on the plans) shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized;

This approval is valid for a period of five years (until 7/6/2015), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this agency for further review and comment.
MOTION PASSED UNANIMOUSLY.

New Business:
W1457(1322) - Yankee - Hillyndale Rd- Permit Renewal
Holt MOVED, Rawn seconded, to grant an Inland Wetlands License under the Wetlands and Watercourses Regulations of the Town of Mansfield to James Yankee (file W1322) for construction of a single-family house with septic system, driveway and well on property owned by the applicants, located at Lot 4, Hillyndale Road, as shown on a map dated 8/19/05 and a soil scientist's report dated 10/27/04, and as described in other

application submissions. This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned upon the following provisions being met:

1. Appropriate erosion and sedimentation controls (as shown on the plans) shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized;

This approval is valid for a period of five years (until 7/6/2015), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this agency for further review and comment.
MOTION PASSED UNANIMOUSLY.

W1458 - Town of Mansfield - Moss Sanctuary- Request for Exemption
Holt MOVED, Ryan seconded, to grant a request for an exemption from obtaining an Inland Wetlands License, to the Town of Mansfield Parks and Recreation Advisory Committee (File W1458) for the installation of four water crossings for recreational use, on property owned by the Town of Mansfield, located at Albert E. Moss Sanctuary as shown on a map revised through 6/24/10.

This action is based on provisions of Section 4.2.A and 4.2.B of the Wetlands and Watercourses Regulations of the Town of Mansfield, which define non-regulated uses in wetlands and watercourses.
MOTION PASSED UNANIMOUSLY.

W1459-Baker-109 Thornbush Road- work in Flood Hazard Zone
Holt MOVED, Beal seconded, to receive the application submitted by Stephen Baker (IWA file W1459) under the Wetlands and Watercourses Regulations of the Town of Mansfield for a front porch addition and stairway into an existing home to be elevated above the flood zone, located at 109 Thornbush Road, on property owned by the applicant, as shown on a map dated 7/6/10 and as described in other application submissions, and to refer the application to the staff and Conservation Commission for review and comment. MOTION PASSED UNANIMOUSLY.

Reports of Officers and Committees:
Chairman Favretti set a 7/13/10 Field Trip at 1 p.m.

Other Communications and Bills:
Noted.

Adjournment:
Favretti declared the meeting adjourned at 7:22 p.m.

Respectfully submitted,

Katherine Holt, Secretary

MINUTES

MANSFIELD INLAND WETLAND AGENCY/PLANNING AND ZONING COMMISSION
FIELD TRIP
Special Meeting
Tuesday, July 13, 2010

Members present: R. Favretti, M. Beal, K. Rawn, K. Holt, P. Plante
Staff present: G. Meitzler (Wetlands Agent, Assistant Town Engineer), G. Padick (Director of Planning)

The field trip began at 1:10 p.m.

1. BAKER PROPERTY, 109 Thornbush Road, IWA File #1459
   Members were met by S. Baker and F. Raiola, Deputy Fire Marshal. Plans for house alterations were briefly reviewed. Site and neighborhood characteristics were observed. No decisions were made.

2. HAWTHORNE PARK SUBDIVISION, Hawthorne Lane, PZC File #1177
   Members were met by W. Hawthorne and two other neighboring property owners. Alternative routes for new overhead electrical power lines were observed. Site and neighborhood characteristics were observed. No decisions were made.

The field trip ended at approximately 2:00 p.m.

Respectfully submitted,

K. Holt, Secretary

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Town of Mansfield
CONSERVATION COMMISSION
Meeting of 21 July 2010
Conference B, Audrey P. Beck Building
(DRAFT) MINUTES

Members present: Joan Buck (Alt.), Robert Dahn (from 7:50p), Neil Faccinetti (Alt.), Quentin Kessel, Scott Lehmann. *Members absent*: Peter Drzewiecki, John Silander, Joan Stevenson, Frank Trainor.. *Others present:* Grant Meitzler (Wetlands Agent); Stephen Baker (homeowner) and Fran Raiola (Fire Marshall's office) regarding W1459.

1. The meeting was **called to order** at 7:32p by Chair Quentin Kessel.

2. The draft **minutes of the 19 May meeting** were approved as written; the draft **minutes of the 16 June meeting** were approved with minor editorial changes.

3. IWA referral: W1459 (Baker, Thornbush Rd.) Mr. Baker's house is in the Willimantic River flood zone and has had a history of insurance claims for water damage. He has received a FEMA 90:10 grant to raise the finished level of the house 3′ above the 100-year flood level. This will be done by jacking up the existing house and pouring a new foundation underneath. Its walls will have openings, allowing flood-water to flow into (and out of) empty basement space to counteract buoyancy.

The IWA referral covers a proposed 60′ × 10′ porch on the front of the house (which is within 150′ of wetlands), supported by 6×6 posts anchored to concrete pilings. The Commission agreed that this project was unlikely to have any significant wetlands impact (motion: Faccinetti, Buck; all but Dahn – who was not yet present – voting affirmatively). Mssrs. Baker and Raiola left the meeting.

4. Committee on Committees meeting. On 19 July, Kessel and Lehmann met with the Committee on Committees regarding the Town Council's "Policy regarding advisory committees' communications with outside agencies." This policy requests that comments from advisory committees on issues of "town-wide importance" be communicated to "the Town Council or Town Manager and not to State or private parties."

The Committee appeared to concede that the stated rationale for the policy – to eliminate "confusion over the Town's position" – would be served by a less onerous requirement that communications with outside agencies state that the views expressed were those of the advisory committee and not necessarily the Town. However, the Commission was unable to secure any relief from the policy. Kessel argued that it hampers the Commission's ability to respond in a timely way to issues of concern, but the Committee didn't see why a letter to the DEP (say) couldn't be quickly cleared with the Town Manager or Town Planner before being sent. Kessel agreed to do give this a try.

5. CL&P Interstate Reliability Project. The PZC has been asked by residents of Hawthorne Lane to relocate CL&P's right-of-way (ROW) closer to Bassetts Bridge Road so that trees on their properties would not be cleared to make way for CL&P's proposed new 345 kV line. The new ROW would include the Hawthorne Lane cul-de-sac and 0.35 acres of conservation easement. After some discussion, the Commission unanimously agreed (motion: Kessel, Lehmann) to offer the following comments:

- The Commission does not understand why the Town should give up a 0.35 acre

conservation easement to provide approximately 2.5 acres of easement-free land to the Hawthorne Lane homeowners. Accordingly, the Commission suggests that a conservation easement be granted to the Town on land removed from the present ROW as a condition of approving its relocation.

- The Commission observes that this proposal to relocate the ROW comes from those with the most to gain from it, and hopes that the PZC will solicit opinion from other nearby landowners before making a decision.
- The Commission is disappointed that CL&P continues to prefer this route through northeast Connecticut to less environmentally costly alternatives and to prefer a second line of poles to a single pylon installation requiring no additional tree-clearing.
- It is unclear to the Commission why the ROW through Mansfield Hollow State Park need extend beyond the currently cleared area shown on the map.

6. Swan Lake discharge. DPH has granted a discharge permit for erosion-control enhancements at the Swan Lake outfall above Valentine Meadow. These improvements could enable the outfall to handle increased storm flows from UConn's proposed diversion of runoff from 44 acres in the Eagleville Brook watershed to the Fenton River watershed. However, this diversion would require a DPH permit, and it's hard to see how one could legally be granted, since it would approve discharging polluted water into a public water supply watershed.

7. Agronomy Farm. Residents of Storrs Heights participated in a productive Q&A session on turf research at the UConn Agronomy Farm during the 8 June Town-Gown Committee meeting. They are preparing follow-up questions for the Committee's 10 August meeting.

8. Adjourned at 8:55p. Next meeting: 7:30p, Wednesday, 18 August 2010

Scott Lehmann, Secretary, 26 July 2010

Memorandum: July 29, 2010
To: Inland Wetland Agency
From: Grant Meitzler, Inland Wetland Agent
Re: Monthly Business

W1419 - Chernushek - hearing on Order

3.10.09: The hearing on the Order remains open and should continue until the permit application under consideration is acted upon.
(The Order was dropped on approval of the application required in the Order.)

4.30.09: Former rye grass seeding is beginning to show green. I spoke with Mr. Chernushek this afternoon who indicated health problems that delayed his starting but indicated he will be working this weekend. I will update on this Monday evening.

5.26.09: A light cover of grass growth has come in. Mr. Chernushek indicates health problems and two related deaths have delayed his start of work since the permit approval was granted. It appears that some light work has started. He has further indicated that he will start a vacation on June 22, 2009 to finish the work.

6.13.09: Work is underway.

6.21.09: Bulldozer work has been completed - finish work remains. The additional silt fencing has been placed along the northerly wetlands crossing, and the additional pipe under the southerly crossing has been installed. Remaining work includes finish grading along edges, spreading stockpiled topsoil, and establishing grass growth.

7.01.09: I spoke with Mr. Chernushek who indicated he expects work to be completed by September 1, 2009. (Site photo attached).

9.03.09: Mr. Chernushek has been working on levelling and grading. The formerly seeded areas have become fairly thick growth surrounding the central wet areas. He has further indicated that with the combination of weather and the slower moving of earth with the payloader compared to the earlier rented bulldozer has led him to contact contractors for earth moving estimates which have not yet been received. The site is not yet finished but has remained quite stable.

9.12.09: I met with Mr. Chernushek today and discussed again what his plans are for stabilizing this work site.

10.01.09: Mr. Chernushek indicated he has not heard back from the contractor he had spoken with about removing material, and is in progress of contacting others. In discussion is removal of material from the site either within the 100 cubic yard limit or obtaining a permit for such removal.

10.28.09: Mr. Chernushek has indicated he has made arrangements with DeSiato Sand & Gravel to remove 750 cubic yards of material. Staff is in the process of clarifying permit requirements.

W1445 - Chernushek - application for gravel removal from site

11.30.09: Packet of information representing submissions by Mr. Chernushek, Mr. DeSiato and myself is in this agenda packet as Mr. Chernusheks's request for modification.

12.29.09: Preparation of required information for PZC special permit application is in progress. Tabling any action until the February 1, 2010 meeting is recommended.

1.12.10: 65 day extension of time received.

2.18.10: No new information has been received.
2.25.10: This application has been **withdrawn.**
6.30.10: As viewed from the adjacent property, the upstream and downstream areas have grown to a decent protected surface. I did not see indication of sediment movement.

Mansfield Auto Parts - Route 32
6.10.09: Inspection - no vehicles are within 25' of wetlands.
7.16.09: Inspection - no vehicles are within 25' of wetlands.
8.12.09: Inspection - no vehicles are within 25' of wetlands.
9.14.09: Inspection - no vehicles are within 25' of wetlands.
10.27.09: Inspection - no vehicles are within 25' of wetlands.
11.30.09: Inspection - no vehicles are within 25' of wetlands.
12.28.09: There are two cars that need to be moved. Mr. Bednarczyk indicates their payloader is down for repairs and the cars will be moved as soon as it is repaired.
1.27.10: No change - the payloader is apart with parts on order to complete repairs. It is of 1986 vontage and finding parts is a major proposition.
2.18.10: Same - they are in the process of rebuilding the engine on the payloader.
3.30.10: Same - Mr. Bednarczyk indicates a contuing problem finding engine parts.
4.13.10: Owner indicates the payloader is operating again.
4.15.10: Owner indicates he will have the cars moved this week.
4.23.10: No vehicles are within 25' of wetlands.
5.17.10: Inspection - no vehicles are within 25' of wetlands.
6.02.10: Inspection - no vehicles are within 25' of wetlands.
6.23.10: Inspection - no vehicles are within 25' of wetlands.
7.15.10: Inspection - no vehicles are within 25' of wetlands.

Memorandum: July 26, 2010

To: Inland Wetlands Agency
From: Grant Meitzler, Inland Wetland Agent
Re: W1459 - Baker - Thornbush Rd - deck, stairs, flood proofing

plan reference: dated 7-06-2010

This application requests approval for a deck and stairs attached to a house that is being flood proofed through the federal FEMA program.

The existing house is to be raised 6' over the present top of foundation leaving it 3' above the flood elevation. This will leave the door entries inaccessible so the work includes stairway construction. A porch is to be added along the full front face of the house.

On the existing foundation the house will be raised by jacking and a new foundation will be poured. This will be a vertical extension of the existing foundation and should not require excavation. Inside, the present basement will be backfilled to the present ground level and a new concrete slab will be poured. The new foundation walls will be provided with openings totalling 800 square inches to allow inside and outside water levels to find the same elevation. Other interior work will move utilities that water would damage to the higher levels.

Outside, the new veranda will be supported by 17 posts. Each post will require 0.18 cubic yards of excavation for a total volume of 3.06 cubic yards.

There is a small addition on the west end of the house that will also be raised and is to be finished with a carport space underneath providing minimal obstruction to future flood flows.

This works represents a sizeable project that consists of only a very small amount of ground disturbance - 3 cubic yards. The work will:

- protect against future flood damage claims for FEMA
- eliminate Willimantic River pollution resulting from the house flooding (this includes heating oil contamination)

The potential for impact here would be worst if nothing is done. The potential for impact occurring will be during the short term construction period. Such impact might occur as a result of vehicle operation and maintenance. Impact from the post hole excavations will most likely go into the basement areas being filled avoiding even short term impacts.

The house is located approximately 140 feet away from the bank of the Willimantic River. The area surrounding the house is presently wooded (and yard) floodplain. There are wetlands a similar distance away - towards the railroad tracks. There should be no impact on these wetland areas from the proposed work.

Wetlands DRAFT Motion for: Baker

Holt moves and _____ seconds to grant/~~deny~~ an Inland Wetlands License under Section 5 of the Wetlands and Watercourses Regulations of the Town of Mansfield to Stephen Baker

(file W 1459) for a front porch addition and stairway into an existing home to be elevated above the flood zone.

on property owned by the applicant

located at 109 Thornbush Road

as shown on a map dated 7/6/10, ~~revised through~~ _____,

and as described in other application submissions, and ~~as heard at Public Hearing(s) on~~ _____.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned upon the following provisions being met:

1) Appropriate erosion and sedimentation controls (as shown on the plans) shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized;

~~2) Maps shall not be signed until all DEP permit requirements have been addressed;~~

2) All excavated material shall be placed either in the present yard or in the basement fill area. It is not to be placed in the nearby wetland.

Baker

August 6, 2015

(last) This approval is valid for a period of five years (until 7/6/15), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this agency for further review and comment.

Memorandum: July 26, 2010

To: Inland Wetlands Agency
From: Grant Meitzler, Inland Wetland Agent
Re: W1460 - Lambert - 1491 Stafford Rd - shed in regulated area

plan reference: dated 7-16-2010

This is an agent approval item. Copies of the zoning application, plan showing location, the required legal notice are attached.

This house is opposite the Chuck's Margarita-ville location on Rte 32 near Forest Road. The mapping submitted is from the time of the original subdivision and clearly locates the watercourse. This is a very distinct watercourse with llittle wetland area next to it. The brook scales as 90+ feet away from the proposed shed location. The 75' distance requirement for agent approval is met.

The applicant has indicated the shed will be placed on timber supports. I take this to mean horizontal timber supports that will mean minimal disturbance.

The legal notice appeared in the Willimantic Chronicle on July 19, 2010.
The time period for an appeal to be submitted expires August 3, 2010.

"Mansfield Inland Wetlands Agency

The Wetlands Agent has issued an administrative approval to David lambert, 1491 Stafford Rd, for a 12'x 16' shed in the upland review area. Information on the application may be seen in the Planning Office at 4 South Eagleville Rd.

July 16, 2010

Grant Meitzler
Wetlands Agent

file: Agent Approval

Legal Notice
The Mansfield Wetlands Agent has issued an administrative approval to David Lambert, 1491 Stafford Rd. for a 12x16 shed in the upland review area. Information on the application may be seen in the Planning Office at 4 South Eagleville Rd.
R. Favreau, Chair
K. Holt, Secretary

The Chronicle
7-19-10

Memorandum: July 28, 2010

To: Inland Wetlands Agency
From: Grant Meitzler, Inland Wetland Agent
Re: W1441 - Kleinfelder - 7 Storrs Rd - permit modification

plan reference: Plan 1, dated 12-14-2009

REQUEST FOR MODIFICATION

This is a modification request for file #1441 which dealt with groundwater sampling at this 7 Storrs Rd site.

The previous application submission was for borings and sampling discharges being done to establish the contamination levels present. This modification is for an oxygenation treatment that should bring the site into line with the DEP required levels. This does not involve direct or continual discharge of groundwater. It involves addition of oxygen to the groundwater to encourage natural processes to take place.

What is expected will be an application of chemical into new borings that will take approximately one week. This is followed by monitoring. The monitoring may show less than the desired reduction of contaminants in which case a second application would be applied. Discussion with John Liddon indicates that if the treatment is not successful in lowering contaminant levels to acceptable limits after two treatments then alternative treatment along the lines of the current work at the former Esso station at the Four Corners would follow.

Mr. Liddon from Kleinfelder has indicated he would be present for Monday's meeting.

Wetlands Draft Approval Motion for:

W1441 - Kleinfelder

(for modification to file W1441)

_____ moves and _____ seconds, to approve modifications to an Inland Wetlands License pursuant to the Wetlands and Watercourses Regulations of the Town of Mansfield granted to **John Liddon of Kleinfelder (file no. W1441)**, for modifications to approval of permit **W1441** previously issued to **John Liddon of Kleinfelder** for investigation of wetlands surface water and sediment sampling on property of Eugene S. Mittelman, located at 7 Storrs Road, as shown on a plan dated 12-14-2010 and as described in other application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned upon the following provisions being met:

1. The conditions of the previous approval are to remain in effect.

This modified approval is valid until **April 3, 2016,** at which time a new permit will be required if work has not been completed. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment.

KLEINFELDER
Bright People. Right Solutions.

July 23, 2010

Grant Meitzler
Inland Wetlands Agent
Town of Mansfield Connecticut
4 South Eagleville Road
Mansfield, CT 06268

Re: Inland Wetlands Permit Modification
Former Mobil Service Station No. 01-G1P
7 Storrs Road
Willimantic, Connecticut

Dear Mr. Meitzler:

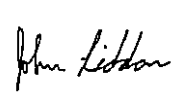
Kleinfelder Inc. is seeking a modification to a Town of Mansfield Inland Wetland Permit application (Attachment A) originally submitted in September 2009 and subsequently approved by the town's wetland commission. The proposed modification will include the completion of a pilot test study, in an upland review area, to examine the effectiveness of in-situ chemical oxidation (ISCO) and an oxygen releasing compound (ORC) to remediate petroleum impacted soil and groundwater at the above referenced site. A grid of injections points, throughout two target areas, will be used to deliver the ORC to the subsurface in accordance with an approved Connecticut Department of Environmental Protection (CT DEP) Temporary Discharge Authorization permit (Attachment B). Target area 1 is proposed for the area beneath and immediately southeast of the existing canopy, while target area 2 is proposed for the area beneath the station building and immediately north. The remedial products will be introduced to the subsurface using industry standard techniques which include; advancing 2-inch steel rods with direct push technology followed by pumping the ORC in one-foot lifts from thirteen feet below ground surface (bgs) to three feet bgs. During application activities, Kleinfelder technicians will be continuously monitoring soil vapor and groundwater at previously installed monitoring wells within the target areas.

A detailed explanation of the proposed work and site map identifying existing site features, monitoring points and target areas is provided in Attachment B.

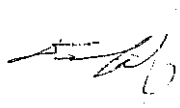
If you have any questions please feel free to contact either of the undersigned at 860-683-4200.

 99 Lamberton Road, Suite201, Windsor, CT 06095 p | 860.683.4200 f | 860.683.4206

Sincerely,
Kleinfelder


Digitally signed by John Liddon
Date: 2010.07.23 11:03:12 -04'00'

John J. Liddon
Environmental Scientist


Digitally signed by Dan Hunter
Date: 2010.07.23 11:03:37 -04'00'

Daniel M. Hunter, P.G.
Project Manager

Enclosures

C: Mary Caruso, Quantum Management Inc.

Certified Mail Return Receipt
#91 7108 2133 3934 5228 0476

TOWN OF MANSFIELD
INLAND WETLAND AGENCY

AUDREY P. BECK BUILDING
FOUR SOUTH EAGLEVILL ROAD
STORRS, CT 06268
(860) 429-3330

FILE

Tuesday, November 03, 2009

Kleinfelder
Attn: John Liddon
99 Lamberton Road, Suite 201
Windsor, CT 06095

Re: Mansfield's IWA Approval
IWA file #1441

Dear Mr. Liddon,

At a meeting held on 11/2/09, the Mansfield Inland Wetlands Agency adopted the following motion:

"To grant an Inland Wetlands License under Section 5 of the Wetlands and Watercourses Regulations of the Town of Mansfield to John Liddon of Kleinfelder (file # W1441) for investigation of wetland surface water and sediment sampling, on property owned by Eugene S. Mittelman, located at 7 Storrs Road, as shown on a map dated 9/18/09 and a letter dated 9/24/09, and as described in other application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned upon the following provisions being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to construction and maintained during construction and removed when disturbed areas are completely stabilized;

This approval is valid for a period of five years (until 11/2/2014), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this agency for further review and comment".

If you have any questions regarding this action, please call the Planning Office at 429-3330.

This letter constitutes your license.

Very truly yours,

Katherine K. Holt, Secretary
Mansfield Inland Wetlands Agency

Cc: Eugene S. Mittelman

PAGE
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APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
TEL: 860-429-3334 OR 429-3331
FAX: 860-429-6863

FOR OFFICE USE ONLY

File #
W_____
Fee Paid _____
Official Date of Receipt_____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact Grant Meitzler, Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name John Liddon of Kleinfelder

Mailing Address 99 Lamberton Road, Suite 201

Windsor, CT Zip 06095

Telephone-Home_____ Telephone-Business 860-683-4200 ext 139

Title and Brief Description of Project

Delineation Investigation and Wetland Surface Water/Sediment sampling

Location of Project 7 Storrs Road, Willimantic, CT

Intended Start Date Upon wetland permit approval

Part B - Property Owner (if applicant is the owner, just write "same")

Name Eugene S. Mittelman

Mailing Address 3400 South Ocean Boulevard

Palm Beach, FL Zip 33480

Telephone-Home_____ Telephone-Business_____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature see attached_____ date_____

Applicant's interest in the land: (if other than owner) Environmental Monitoring

Part C - Project Description (attach extra pages, if necessary)

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
TEL: 860-429-3334 OR 429-3331
FAX: 860-429-6863

FOR OFFICE USE ONLY
File #
W_____
Fee Paid_____
Official Date of Receipt:_____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact Grant Meitzler, Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name John Liddon or Kleinfelder

Mailing Address 99 Lamberton Road, Suite 201

Windsor, CT Zip 06095

Telephone-Home_____ Telephone-Business_____

Title and Brief Description of Project

Delineation investigation and Wetland Surface Water/Sediment sampling

Location of Project 7 Storrs Road, Willimantic, CT

Intended Start Date Upon wetland permit approval

Part B - Property Owner (If applicant is the owner, just write "same")

Name Eugene S. Mittelman

Mailing Address 3400 South Ocean Boulevard

Palm Beach, FL Zip 33480

Telephone-Home 802-297-1591 Telephone-Business_____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature Eugene S. Mittelman date 9/22/09

Applicant's interest in the land: (if other than owner) Environmental Monitoring

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. **(See guidelines at end of application – page 6.)**
Please include a description of all activity or construction or disturbance:
a) ***in*** the wetland/watercourse
b) ***in*** the area ***adjacent*** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is ***off*** your property

See attached scope of work

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):
a) ***in*** the wetland/watercourse
b) ***in*** the area ***adjacent*** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

Kleinfelder staff will enter a topographically depressed area within 150 feet from the wetland area. Kleinfelder will enter the area by foot and use only hand tools to remove approximately two liters of soil from four locations at depths between 1 -15 feet below ground surface. Additionally, Kleinfelder will remove two liters of surface water and two liters of surface sediment. See attached SOW for details.

3) Describe the type of materials you are using for the project:
Hand auger, hand geoprobe, garden spade and sampling collection jars.

a) include ***type*** of material used as fill or to be excavated Surface water, soil and sediment
b) include ***volume*** of material to be filled or excavated Approximately eight liters of soil/sediment and two liters of surface water.

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

A single foot path will be used to enter and exit the highly vegetated area adjacent to the wetland area.

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Generally flat with a gentle slope downward from west to east.

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

N/A

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application – page 6.)**

2) Applicant's map date and date of last revision 9/18/09

3) Zone Classification PB-1 (Planned Business 1 zone)

4) Is your property in a flood zone? _____Yes _☑_No _____ Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) List the names and addresses of abutting property owners

Name	Address
Colonial BT LLC	145 I Foster Drive Willimantic, CT 06226-1527
Paul Kozelka Republic Oil Co.	PO Box 436 Willimantic, CT 06226
Connecticut DOT	2800 Berlin Turnpike Newington, CT 06131-7546

2) **Written Notice to Abutters** . You must notify abutting property owners by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. ***Postal receipts of your notice to abutters must accompany your application.*** (This is not needed for exemptions).

Part I - Additional Notices, if necessary

1) Notice to Windham Water Works is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

2) Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to

the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

3) The Statewide Reporting Form (attached) shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site?___Yes[✓]No___Don't Know

2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality?____ Yes [✓] No ____ Don't Know

3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality?____ Yes [✓] No ____Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. (*Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

Submit the appropriate filing fee. (Consult Wetlands Agent for the fee schedule available in the Mansfield Inland Wetlands and Watercourses Regulations.)

____ $365. _____ $110. ____ $60. ____ $25. [✓] $155.00

Note: The Agency may require you to provide additional information about the regulated area which is the subject of the application, or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by members and agents of the Inland Wetlands Agency, at reasonable times, both before and after the permit in question has been granted by the Agency.

2009.09.24 12:02:24 -04'00'

Applicant's Signature _____ Date _____

KLEINFELDER
Bright People. Right Solutions.

ATTACHMENTS F AND G
APPLICATION FOR EMERGENCY OR TEMPORARY DISCHARGE AUTHORIZATION

Former Mobil Service Station No. 01-G1P
7 Storrs Road
Willimantic, Connecticut

FEBRUARY 2010

INTRODUCTION

Kleinfelder Inc. (KFG) has prepared this work plan for pilot study of in-situ chemical oxidation (ISCO) and enhanced bioremediation at former Mobil Service Station No. 01-G1P located at 7 Storrs Road in Willimantic, Connecticut. The pilot study will evaluate the use of RegenOx™ and Advanced Oxygen Release Compound (ORC Advanced®) to treat vadose and saturated zone soils impacted with petroleum-related contaminants as shown on the attached site plan. This work plan has been prepared by KFG to satisfy the requirements of Attachments F and G of the Connecticut Department of Environmental Protection (CTDEP) Application for Emergency or Temporary Discharge Authorization Permit, DEP-WD/REM-APP-200.

SITE DESCRIPTION

The station building is a single-story, 1,872 square foot, brick/concrete structure with a convenience store, two automotive service bays, and restrooms. The service station is currently inactive. The service station formerly operated five underground storage tanks (USTs) as follows: two 10,000-gallon gasoline tanks, one 12,000-gallon gasoline tank, one 550-gallon fuel-oil tank, and one 550-gallon used-oil tank. These USTs were installed in 1987 and removed in March 2008. The service station formerly dispensed gasoline from four multi-product dispensers (MPDs); these MPDs and associated piping were also removed in March 2008. The current and former site features are depicted on Attachment A.

The site is an approximately two acre parcel (Attachment B). According to CTDEP records, the site operated as a Mobil-branded gasoline service station and convenience store from 1970 through 2008

Area Land Use

According to the *Zoning Map of the Town of Mansfield, Connecticut*, the site is located within a designated Planned Business 1 zone. The site is bordered by Conantville Road No. 2 and beyond that by Colonial Apartments to the west, by a wooded area, Sawmill Brook, and associated wetlands to the north, by Storrs Road (Connecticut Route 195) and beyond that New Alliance Bank to the east, and Foster Drive and beyond that Alex Caisse Park to the south.

Site Utilities

Willimantic Water Works of Connecticut provides public water to the site and the surrounding properties. Willimantic Reservoir serves as the public water resource for the area and is located approximately 5,300 feet northeast of the site. The water service lateral generally runs north-south from the intersection of Conantville Road No. 2 and Foster Drive to the southern portion of the station building.

Sewer service is provided by the Town of Willimantic Public Works Sewer Division. No maps showing the actual location of the service lateral could be obtained from town

records. A limited portion of the sewer lateral to the site building was encountered during tank removal activities. The exposed lateral was buried approximately 6 feet below grade and appeared to run north to south.

The site slopes gently from west to east. Storm run-off is directed to two, interconnected catch basins located in the eastern portion of the site. These catch basins discharge storm water to the Sawmill Brook associated wetlands north of the site for recharge.

Telephone services (Verizon) are supplied to the site via a sub-grade conduit located west of the site building. This burial depth of this service lateral is presumed to be relatively shallow thus preferential flow along this conduit is unlikely. Electricity is provided via overhead service by Connecticut Light and Power. Electrical service to the various on-site improvements (e.g. sign, lights, MPDs, tanks, etc.) is supplied via sub-grade conduits. The burial depths of these service conduits is presumed to be relatively shallow thus preferential flow is unlikely.

Heating oil was stored on-site in a 550-gallon UST formerly located west of the station building. This UST was removed in March 2008.

ENVIRONMENTAL SETTING

Topography

The site slopes gently downward from west to east as depicted on the United States Geological Survey (USGS) 7.5 Minute Topographic map of the Willimantic, Connecticut quadrangle. The relevant portion of the quadrangle is depicted on the Site Locus (Plate 1).

Groundwater Classification

The site is located within a GA groundwater area. The GA classification is designated for groundwater within the area of existing private water supply wells or an area with the potential to provide water to public or private water supply wells. The CTDEP presumes that groundwater in such an area is suitable for drinking or other domestic uses without treatment.

Surface Water Classification

An unnamed pond (Alex Caisse Park) is located approximately 50 meters south of the site. Sawmill Brook borders the property to the northeast and flows in a southeasterly direction, to the Natchaug River. The Natchaug River is located approximately 250 meters east of the site and flows in a southeasterly direction toward the Shetucket River, located approximately 6,500 feet southeast of the site. According to the CTDEP *Water Quality Classifications Map of the Housatonic River, Hudson River and Southwest Coastal Basins,* Sheet 2 of 3, the Natchaug River is a class B surface water body which is designated as habitat for fish and aquatic life and wildlife, recreation, navigation, and industrial and agricultural water supply. According to the

Connecticut GIS database, an unnamed wetland is located approximately 50 meters east of the site, in between Storrs Road and the Natchaug River.

Geology

Surficial geology in the vicinity of the site is described on the *Surficial Materials Map of Connecticut* (Stone, et al, 1992) as a mix of sand and gravel overlying sand and alluvium. Sand and gravel is generally defined as less than 20 feet thick, horizontally bedded, and overlies inclined layers of sand (deltaic deposits). Alluvium is described as overlying fines. Geology observed during drilling is consistent with published descriptions. In general, medium to fine sand with lesser amounts of fine gravel, coarse sand, and silt were encountered overlying fine sand and silt. Increasing silt content was observed with increasing depth. To date, maximum exploration depth is approximately 12 feet (ft) below surface grade.

The underlying bedrock is identified on the *Bedrock Geological Map of Connecticut* (J. Rodgers, 1985) as Hope Valley Alaskite Gneiss (Proterzoic Z), comprised of a light-pink to gray, medium to course-grained, locally porphyritic, variably lineated and foliated alaskitic gneiss. Bedrock was not encountered during subsurface investigation activities conducted at the site.

Hydrogeology

Groundwater monitoring was conducted at the site in January, September, and December 2008 and in April 2009. Water level data collected during these events was used to model the potentiometric surface and estimate groundwater flow direction. Groundwater flow direction was consistently eastward across the site and thus, for purposes of this report, west is considered to be hydraulically up-gradient, east is considered to be hydraulically down-gradient, and north and south considered to be hydraulically cross-gradient.

During the recent April 2009 sampling event, depth to groundwater ranged from 1.99 feet below well casing at well MW-5 to 11.15 feet below well casing at well OS-1. Data indicate that the seasonal groundwater elevation fluctuation is as much as 1.43 feet seasonally. To date, the lowest groundwater elevations were observed in September (Fall) and the highest groundwater elevations were observed in April (Spring). Hydraulic gradient is seasonally consistent, ranging from approximately 0.03 ft/ft in February 2008 to 0.05 ft/ft in April 2009.

Potential Sensitive Receptors

The following potential sensitive receptors were identified in the vicinity of the site:

- A public drinking water supply (Alex Caisse Park Spring) is located approximately 100 meters south (cross-gradient) of the site.
- Sub-grade utilities including the water and sewer laterals in the southern portion of the site and the storm water system in the eastern portion of the site
- A utility vault located in Foster Drive south of the site

- Sawmill Brook and associated wetlands located north of the site
- Natchaug River and associated wetlands located east of the site
- An unnamed pond (Alex Caisse Park) located 50 meters south of the site

INJECTION WORK PLAN

KFG proposes to study the use of Regenesis chemical oxidation and oxygen enhancement products to remediate soil and groundwater at the site. RegenOx™ is a sodium percarbonate based oxidant that will treat residual petroleum contaminants while producing minimal heat and remain reactive for a period of up to 30 days following injection. ORC Advanced® will then provide a long term source of oxygen for aerobic bio-treatment of residual hydrocarbons in the dissolved phase. The work plan and rationale is summarized below.

Target Areas

Based on the observed nature and extent of the residual contaminants, two target areas were defined for pilot study. Target Area #1 is located in the vicinity of the former product piping and dispensers (AOC-2). Soil and groundwater in this area are impacted with gasoline-related VOCs. Target Area #1 covers approximately 2,000 square feet (ft^2) and spans approximately ten vertical feet, e.g., from three to 13 feet below the ground surface (bgs), encompassing a total volume of approximately 750 cubic yards (yds^3). Target Area #2 is located in the vicinity of the former garage (AOC-3) and used oil UST area (AOC-4). Soil and groundwater in this target area are impacted with ETPH. Target Area #2 covers approximately 2,200 ft^2 and spans approximately ten vertical feet, e.g., from three to 13 feet bgs, encompassing a total volume of approximately 800 yds^3.

RegenOx™

RegenOx™ is effective at treating a wide range of organic contaminants including aromatic and aliphatic VOCs, polycyclic aromatic hydrocarbons (PAHs), and oxygenates. The RegenOx™ oxidant technology uses two parts, an oxidizer and an activator. The oxidizer is a mixture of sodium percarbonate, sodium carbonate, sodium silicate, and silica gel. The activator is a mixture of sodium silicate solution, silica gel and ferrous sulfate. The application process involves combining the two parts in the field then injecting the aqueous mixture into the zone of contamination. Sodium percarbonate is the active oxidant. Once in the subsurface, the RegenOx™ product produces various oxidation reactions including: surface mediated oxidation, a vendor patent-pending process whereby the soil particle is coated with an activator then the oxidant and contaminant react with the activator on the surface of the soil particle, direct oxidation and free radical oxidation. Regenesis has indicated that minimal heat is produced and that the oxidation reactions can last for periods of up to 30 days following injection. Material safety data sheets (MSDS) for RegenOx™ are provided in Appendix A.

ORC Advanced®

ORC Advanced® is a proprietary formulation of food-grade, calcium oxy-hydroxide that produces a controlled-release of molecular oxygen for period of up to 12 months upon hydration. It is designed to accelerate the rate of naturally occurring aerobic contaminant biodegradation in groundwater and saturated soils. A MSDS for ORC Advanced® is provided in Appendix A.

Chemical Dosage

Regenesis of San Clemente, CA (www.regenesis.com) completed the chemical dosage calculations based on information provided by KFG on site geology, hydrogeology, and the nature, degreem and extent of contaminants. Regenesis has estimated that 7,260 pounds of RegenOx™ and 1,625 pounds of ORC Advanced® will be required. Chemical dosage calculations are provided as Appendix B.

Permits

This *Application for an Emergency or Temporary Discharge Authorization* (DEP-WD/REM-APP-200) has been completed and submitted for CTDEP approval.

Chemical Injections

KFG plans to inject a liquid/slurry mixture of RegenOx™ and ORC Advanced® at a total of thirty-five (35) locations, e.g., 15 locations at Target Area #1 and 20 locations at Target Area #2, using the Geoprobe® drilling techniques. The injections will be spaced on 12½ foot centers as shown on the attached site plan. The injections will be completed at a maximum depth of thirteen (13) feet bgs. Approximately one foot of clean sand will be placed over the liquid/slurry mixture followed by approximately one foot of hydrated bentonite chips. Quick-set concrete (approximately one foot thickness) will be used to cap the boring to surface grade. Chemicals will be applied to the subsurface through using high pressure grout injection machine directly through the Geoprobe® tools. The actual injection pressures will be dictated by the geology and thus determined during field application activities. Chemicals will be mixed and injected in accordance with the Regenesis procedures provided as Appendix C.

Health and Safety

Prior to the initiation of the injections, KFG will develop a site specific health and safety plan (HASP). The HASP will identify hazards which can be expected, as well as outline emergency procedures, contacts, and mitigation measures. Additional activities to ensure the health and safety of employees, the general public, and the environment are outlined below.

Site Control

Access to the site will be restricted to authorized personnel during the injections. All personnel will enter and exit the area through specific work zones. Prior to the start of work, a safety officer will establish specific work zones to reduce the transport and exposure of contaminants at the site. The following work zones will be established.

- Exclusion Zone: The Exclusion Zone is an area centered on (at least a 20-foot radius, if possible) the point of activity. All personnel in the exclusion zone will be required to wear the level of personal protective equipment (PPE) specified by the site safety officer. Entry and exit to the exclusion zone will be regulated and will be permitted only in a pre-specified area.
- Support Zone: The Support Zone is established in a clean or non-contaminated area away from (and upwind when possible) from the Exclusion Zone. This area will contain support facilities and areas for potable water, first aid, and eating and changing. Normal work clothes are permitted in this area.

Safety Meetings

Prior to the start of work each day, the site safety officer will instruct field personnel and others that will be on-site during the injections of the following:

- The anticipated scope of work
- Location of nearest medical facility
- Review of the site-specific health and safety plan (HASP)
- Review the Job Safety Analysis (JSA) for each task
- Review known potential hazards with the work/chemicals

Safety meetings will also be conducted to address site-specific potential hazards prior to the start of work on a daily basis.

MONITORING PROGRAM

The objectives of the monitoring program are to demonstrate that the remediation process is protective of human health, safety, and the environment and to assess the effectiveness of the chemical injections. The program will consist of groundwater and vapor monitoring before, during, and after the oxidant/ORC injection activities to achieve these objectives.

Baseline Monitoring

Approximately one week prior to the injections, low-flow groundwater sampling of existing monitoring wells MW-3, MW-4, MW-102, MW-103S, MW-103D, MW-105, MW-106, MW-107, MW-110, and MW-112 will be conducted. Wells will be monitored for the following parameters:

- Depth to water
- Dissolved oxygen (DO_2)
- Oxidation-reduction potential (ORP)
- pH
- Specific conductivity
- Temperature
- Dissolved carbon dioxide (DCO_2)

The groundwater samples collected from the monitoring wells associated with Target Area #1 (e.g., MW-102, MW-103S, MW-103D, MW-105, and MW-112) will be analyzed for VOCs including methyl tertiary butyl ether (MTBE), Resource Conservation Recovery Act (RCRA) metals, biological oxygen demand (BOD), chemical oxygen demand (COD), alkalinity, and iron. The groundwater samples collected from the monitoring wells associated with Target Area #2 (e.g., MW-3, MW-4, MW-106, MW-107, and MW-110) will be analyzed for VOCs, ETPH, polycyclic aromatic hydrocarbons (PAHs), RCRA metals, BOD, COD, alkalinity, and iron.

Vapor monitoring of wells MW-3, MW-4, MW-102, MW-103S, MW-103D, MW-105, MW-106, MW-107, MW-110, and MW-112 and the two on-site storm water catch basins will be conducted. Wells will be monitored for the following parameters:

- Oxygen (O_2)
- Total volatile organic vapors (TVOVs) using a photo-ionization detector (PID)
- Lower explosive limit (LEL)
- Carbon dioxide (CO_2)

Injection Monitoring

Injections pressures and uptake will be monitored by the selected drilling contractor in accordance with Regenesis guidance. During the injection activities, groundwater and vapor at existing monitoring wells MW-3, MW-4, MW-102, MW-103S, MW-103D, MW-105, MW-106, MW-107, MW-110, and MW-112 will be monitored periodically for the following parameters:

- Depth to water
- DO_2
- Oxidation-reduction potential (ORP)
- pH
- Specific conductivity
- Temperature
- DCO_2
- Hydrogen peroxide (H_2O_2)
- O_2
- TVOVs
- LEL
- CO_2

The two on-site catch basins will also be screened for O_2, TVOVs, LEL, and CO_2.

Post-Injection Monitoring

Approximately one month, three months, and six months following the injections, low-flow groundwater sampling of existing monitoring wells MW-3, MW-4, MW-102, MW-103S, MW-103D, MW-105, MW-106, MW-107, MW-110, and MW-112 will be conducted. Wells will be monitored for the following parameters:

- Depth to water

- DO_2
- ORP
- pH
- Specific conductivity
- Temperature
- DCO_2

The groundwater samples collected from the monitoring wells associated with Target Area #1 (e.g., MW-102, MW-103S, MW-103D, MW-105, and MW-112) will be analyzed for VOCs, MTBE, RCRA metals, BOD, COD, alkalinity, and iron. The groundwater samples collected from the monitoring wells associated with Target Area #2 (e.g., MW-3, MW-4, MW-106, MW-107, MW-110) will be analyzed for VOCs, ETPH, PAHs, RCRA metals, BOD, COD, alkalinity, and iron.

Vapor monitoring of wells MW-3, MW-4, MW-102, MW-103S, MW-103D, MW-105, MW-106, MW-107, MW-110, and MW-112 and the two on-site storm water catch basins will be conducted. Wells will be monitored for the following parameters:

- O_2
- TVOVs
- LEL
- CO_2

EVALUATION OF PILOT STUDY

The effectiveness of ISCO and enhanced bioremediation will be based on groundwater measurements. Decreases in primary indicators such as VOCs and ETPH and secondary indicators such as DCO_2 and increases in secondary indicators such as DO_2 and ORP would indicate that the injections were effective. An *In-situ Chemical Oxidation and Enhanced Bioremediation Pilot Study Report* will be prepared summarizing the methods and results of the pilot study following the groundwater monitoring.

APPENDICES

Plate 1, Site Plan with Proposed RegenOx/ORC Injection
Appendix A, MSDS for RegenOx™ and ORC Advanced®
Appendix B, Chemical Dosage Calculations
Appendix C, Chemical Mixing and Injection Procedures

Memorandum: July 26, 2010
To: Inland Wetland Agency
From: Grant Meitzler, Inland Wetland Agent
Re: New Business for the August 2, 2010 meeting

New Application:

W1461 - Elshakhs - 23 Bundy Lane - above ground pool in buffer

	yes	no
fee paid	X	
certified receipts	X	
map dated	7.12.2010	

This application requests approval for an above ground pool in the rear yard of the house at 23 Bundy Lane. This is the second house in coming from Gurleyville Rd.

The brook coming from Valentine Meadows and Mirror Lake flows across the rear of the lot and there is a wide wetland adjacent to the brook.

Receipt and referral to the Conservation Commission is appropriate.

PAGE
BREAK

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
TEL: 860-429-3334 OR 429-3331
FAX: 860-429-6863

FOR OFFICE USE ONLY
File # W 1461
Fee Paid yes
Official Date of Receipt 8-02

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact Grant Meitzler, Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Hisham Elshakhs

Mailing Address 23 Bundy Lane

Storrs, CT Zip 06268

Telephone-Home 860-429-2401 Telephone-Business

Title and Brief Description of Project

Install 21' Aboveground pool

Location of Project SAME

Intended Start Date ASAP

Part B - Property Owner (if applicant is the owner, just write "same")

Name Same

Mailing Address

Zip

Telephone-Home Telephone-Business

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature X [signature] date 7/26/10

Applicant's interest in the land: (if other than owner) Installer of 21' Pool

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (**See guidelines at end of application – page 6.**)
Please include a description of all activity or construction or disturbance:

a) ***in*** the wetland/watercourse
b) ***in*** the area ***adjacent*** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is ***off*** your property

Excavation and leveling to install 21'Rd Aboveground pool. Use of Bobcat to remove sod and level area for base of pool. Pool will be installed By hand with use of a small cement mixer. Silt fence to be installe Before using Bobcat to prevent Dirt from washing into Brook which is 100+ feet from pool location. No other location will work as the well is located in the front right, septic and leach fields are located in rear and front left of property. Excavated area will not exceed 900 sqft this provides a placement for pool and pump/filter equiptment. Electrical to be done by seperate Contractor

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

a) ***in*** the wetland/watercourse
b) ***in*** the area ***adjacent*** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

900 SQFT.

3) Describe the type of materials you are using for the project: 21 ABOVE GROUND POOL

a) include ***type*** of material used as fill or to be excavated
b) include ***volume*** of material to be filled or excavated 5 YD

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

SILT FENCE

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Slight slop grade Towards the Brook

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

NO OTHER AREA FOR POOL

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application – page 6.)**

2) Applicant's map date and date of last revision 7/12/10

3) Zone Classification RAR 90

4) Is your property in a flood zone? ____Yes X No ____Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) List the names and addresses of abutting property owners

Name	Address
Mark Magayzel	15 Bundy Ln, Storrs CT
RMEA Kelly Family LLC	29 Bundy Ln, Storrs CT
Timothy Tolokan	11 Holly Dr, Storrs CT

2) **Written Notice to Abutters** . You must notify abutting property owners by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. ***Postal receipts of your notice to abutters must accompany your application.*** (This is not needed for exemptions).

Part I - Additional Notices, if necessary

1) Notice to Windham Water Works is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW of your project within 7 days of sending the application to Mansfield–sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

2) Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

3) The Statewide Reporting Form (attached) shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site?___Yes_X_No___Don't Know

2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality?____ Yes _X_ No ____ Don't Know

3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality?____ Yes _X_ No ____Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. (*Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

Submit the appropriate filing fee. (Consult Wetlands Agent for the fee schedule available in the Mansfield Inland Wetlands and Watercourses Regulations.)

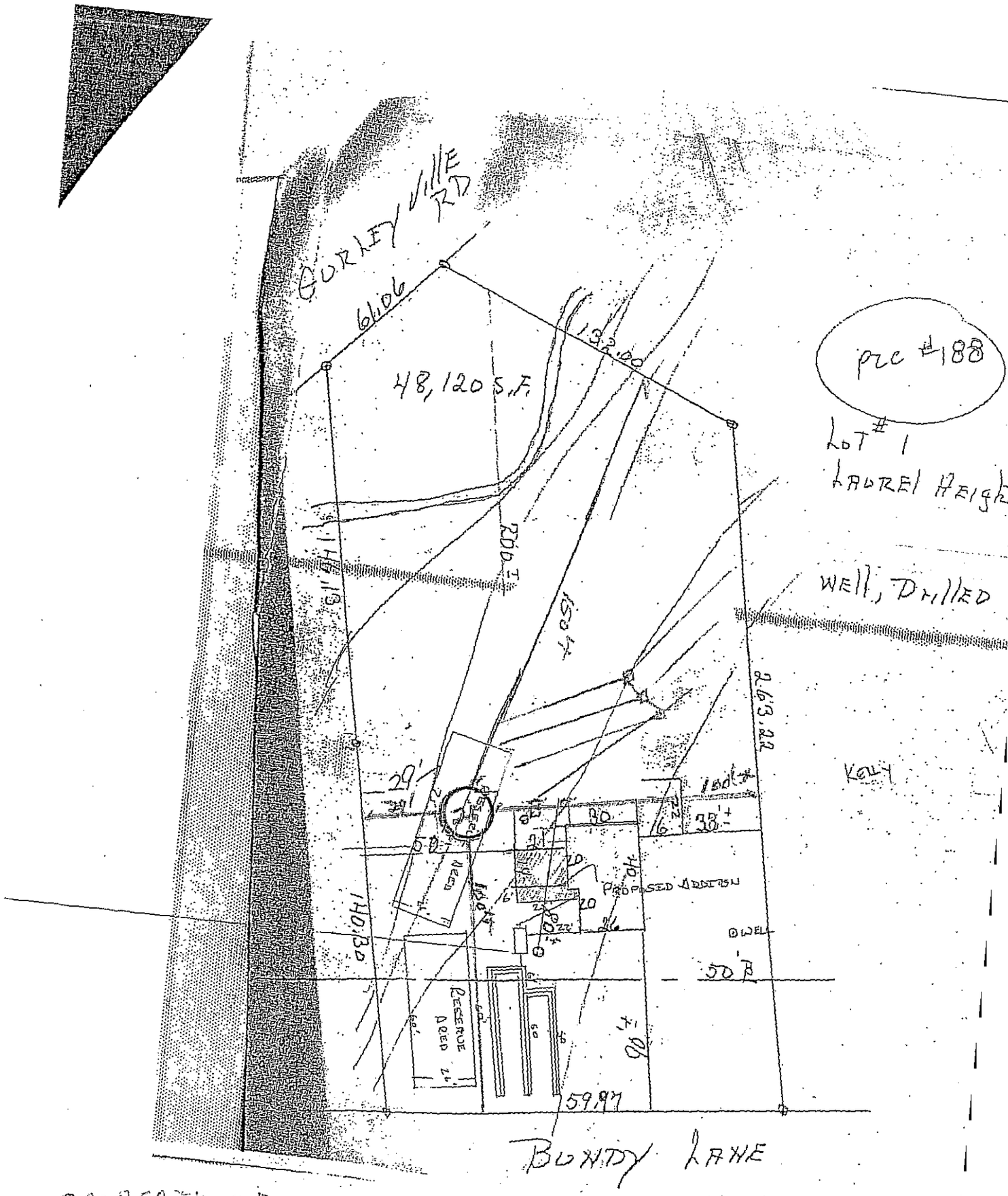
____ $385. _____ $110. ____ $60. ____ $25. $185 paid

Note: The Agency may require you to provide additional information about the regulated area which is the subject of the application, or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by members and agents of the Inland Wetlands Agency, at reasonable times, both before and after the permit in question has been granted by the Agency.

X _____ 7-24-18

Applicant's Signature Date

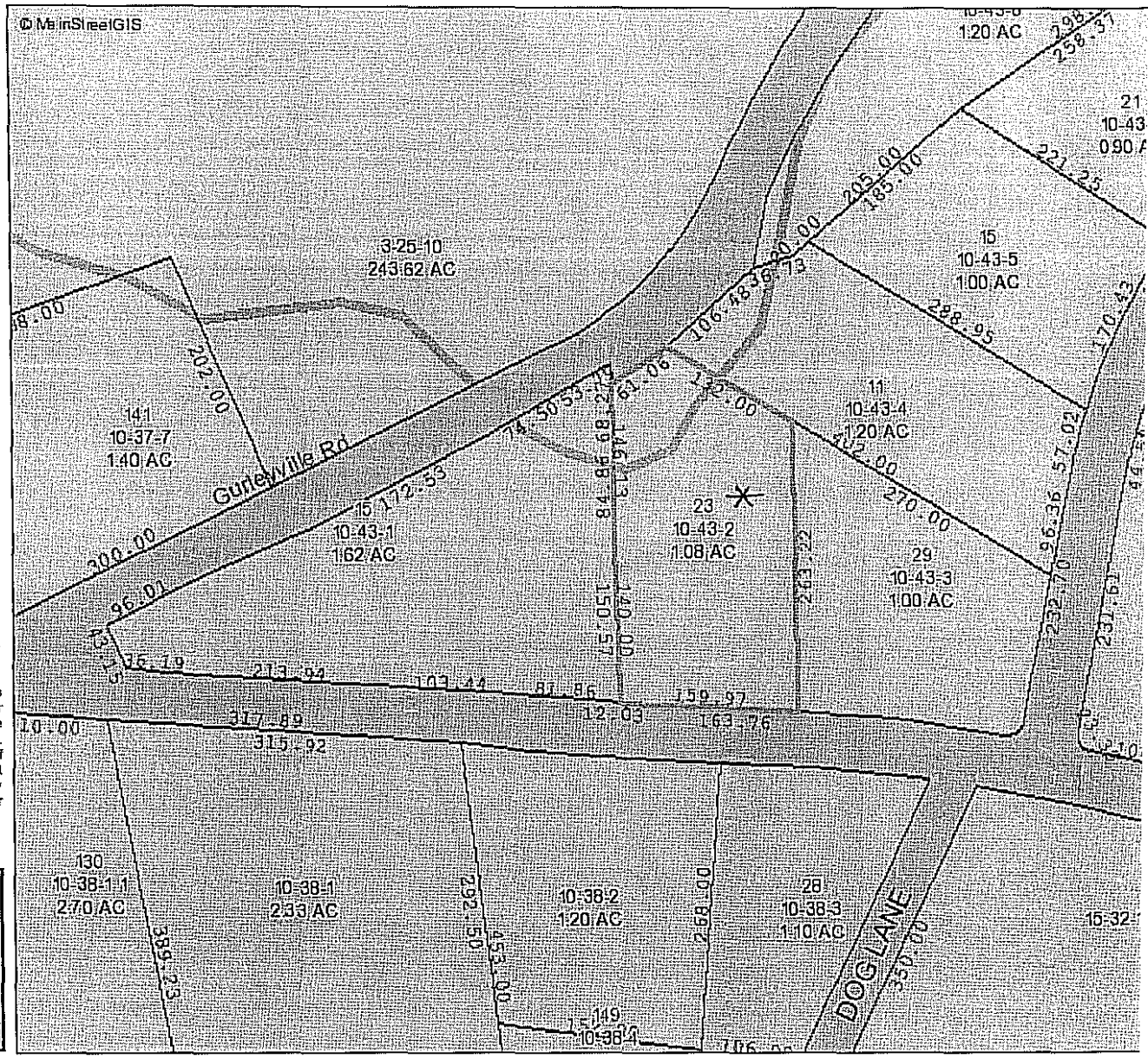


PROPERTY OF
HISHAM + JENNIFER ELSHAKES FRUEH Job
23 BUNDY LN. 23 Bundy Lane
STORRS MANSFIELD CT 06268

1" = 50'

Above ground pool
7-12-10

Town of Mansfield, Connecticut



- A Address No.
- A Parcel ID
- A Parcel Area
- A Lot Dimensions
- A Road Names
- Zoning
- Roadway
- Roads
- Streams
- Water
- Parcels

MainStreetGIS

www.mainstreetgis.com

1 in = 149.76 ft

1 : 1797.12

Data Currency: Property Records 10/8/2009 GIS Parcel Lines 10/1/2009

SUMMER 2010
Volume 22
Number 2

THE HABITAT

A newsletter of the Connecticut Association of Conservation and Inland Wetlands Commissions, Inc.

FOREST STEWARDSHIP PLANS FOR MUNICIPAL WOODLANDS

by Thomas Worthley, Assistant Extension Professor, UCONN Cooperative Extension

Local officials, conservation commissioners, inland-wetland agency members and others all have a role in the stewardship of local forest resources. Whether through the direct oversight and management of town-owned woodlands, indirectly on privately-owned forested properties through planning and regulatory processes or even through opportunities to provide information and guidance to private landowners in the community, local officials can have a high degree of influence on the health, productivity and condition of the forest resources in the community.

Public officials should take an interest in the stewardship of forest resources in their communities because of the myriad public services and benefits that flow from forests, both publicly and privately owned, services and benefits on which all citizens depend and that many people take for granted. For example:

- Virtually all the water available for Connecticut residents to use, whether from reservoir or well, begins as precipitation that falls in the forest. The intact forest floor (and to a lesser degree shrubland and natural grassland) is the primary land-use type on which precipitation can be captured, absorbed, stored and slowly released to subsurface aquifers and well sources. Intact open forest/open space areas are essential for this purpose.

- Forests provide the main habitat areas for native pollinators – critical to our food supplies.

Forest, continued on page 12

SAVE THE DATE - Saturday November 13, 2010

CACIWC 33rd Annual Meeting & Environmental Conference

MountainRidge - Wallingford, Connecticut

The CACIWC Annual Meeting Committee plans to continue the Earth Day 40 celebration by honoring Connecticut Conservation and Inland Wetlands Commissions that were formed within the first decade of the original Earth Day. The Committee is scheduling a series of informative speakers and workshops on a host of relevant topics for both experienced and new conservation and inland wetlands commissioners and staff.

Watch the www.caciwc.org 2010 Annual Meeting and Environmental Conference page for more information and award nomination forms.

No Increase in CACIWC Membership Fees!

At their May 26, 2010 meeting, the CACIWC Board of Directors voted to hold membership fees for the July 1, 2010-June 30, 2011 year at the 2009-2010 level:

One Commission $50; One Commission (Sustaining) $75
Two Commissions $100; Two Commissions (Sustaining) $150

Please watch www.caciwc.org for the new membership form and other information.

CACIWC's Board of Directors continues to encourage individuals and corporations to consider making a donation to CACIWC or joining in one of the supporting membership categories. Please see www.caciwc.org/pages/support/index.html for more information.

Inside ★

The Habitat is the newsletter of the Connecticut Association of Conservation and Inland Wetlands Commissions (CACIWC). Materials from *The Habitat* may be reprinted with credit given. The content of *The Habitat* is solely the responsibility of CACIWC and is not influenced by sponsors or advertisers.

Editor: Tom ODell
Associate Editor: Ann Letendre

Correspondence to the editor, manuscripts, inquiries, etc. should be addressed to *The Habitat*, c/o Tom ODell, 9 Cherry St., Westbrook, CT 06498. Phone & fax 860.399.1807 or e-mail todell@snet.net.

Reminder

Dues for fiscal year July 1, 2010 - June 30, 2011 are due.

Editor's Note: CACIWC has been a member of CLCC since it was created in 2006 by the merger of the Land Trust Service Bureau (LTSB), which provided technical support to land trusts, and the Land Conservation Coalition of Connecticut (LCCC). Tom ODell represents CACIWC on the CLCC's Steering Committee. For more information go to http://www.ctconservation.org/.

CT Land Conservation Council Hires First Executive Director

Amy Blaymore Paterson has been hired as the first Executive Director for the Connecticut Land Conservation Council (CLCC). The CLCC works with land trusts, conservation commissions, and other state wide conservation organizations to achieve its mission "to ensure the long-term strength and viability of the land conservation community of Connecticut". It has a Steering Committee with statewide representation and shares its headquarters with the Connecticut Forest & Park Association (CFPA) in the Rockfall section of Middlefield.

Kevin Case, Chair of the CLCCC Steering Committee, noted "This is a momentous occasion for the land conservation movement in the state. There are over 120 land trusts working with Connecticut's communities to ensure everyone has access to clean water, local food, healthy forests and places for people of all ages to enjoy the great outdoors. Amy brings great energy and a breadth of experience that will allow CLCC to provide the support, guidance and vision needed to accelerate the pace and enhance the quality of land conservation across the state."

Before joining CLCC, Amy served as a Project Manager for The Trust for Public Land (TPL), a national non-profit dedicated to conserving land as parks, farms, and natural places for people to enjoy. While at TPL, Amy oversaw several complex conservation transactions, working closely with private landowners, government officials and land trust representatives seeking to preserve thousands of acres of farmland, working forests and open space.

Prior to TPL, Amy worked for over twenty years as an attorney, concentrating her practice in land preservation and environmental protection. Her clients included landowners, municipalities, land trusts and other non-profits. Amy provided a range of legal assistance to these entities, from handling their initial organization as a non-profit, to transactional, grant and legislative work, to representation in administrative and court proceedings. She received her law degree from the University of Denver and, prior to moving to Vernon in 1988, was an attorney with the United States Department of Justice. Amy has served as counsel to the Vernon Hockanum River Linear Park Committee and was a member of the town's Inland Wetlands Commission and Open Space Task Force.

Amy may be reached directly at 860-685-0785 or at abpaterson@ctconservation.org.

Editor's Note: The following article was, in part, a presentation by David Roach at the 2010 Annual Meeting of the CT Association of Wetland Scientists, February 23, 2010.

Practical Prescriptions for Managing Invasive Vegetation in Wetland Settings

by David Roach, General Manager, All Habitat Services, LLC

Almost everyone can remember a favorite pond or wetland that was once cattails and perhaps open water that has been overrun by common reed (*Phragmites australis)* or purple loosestrife (*Lythrum spp.*). Most of us have realized that if we ignore the problem of invasive species, they don't go away. We have also realized that sometimes our best efforts to mow or hand pull the offenders doesn't make them go away either, in fact it often makes them more aggressive. The conundrum faced by managers is often how to find the balance between defending native ecosystems from alien invaders without doing more damage to the areas we seek to protect.

In the search for management techniques to control invasive species the options must be scientifically defensible, economically viable and socially acceptable. Within the toolbox of control techniques there are four primary categories to choose from: cultural, physical/mechanical, biological, and chemical controls.

> ***"They don't just compete with or consume native species, they change the rules of the game."***
>
> ***-Peter Vitousek***

Cultural controls may be the most desirable of all. By not planting invasive species in the first place we avoid the problem, native plants remain healthy and viable, and the ecosystem continues to function in balance. Invasive species are opportunists. If habitats are not disturbed the opportunity for new species to become established is minimized. If a site is disturbed remediation of the site using native plants and seeding will help to restore the area to its original undisturbed state. Sometimes understanding the characteristics of the plant we are trying to control makes modification of the habitat a viable control method. Habitat modification may include manipulating the water or light levels in favor of desirable species, to the detriment of invaders.

Biological controls rely on species-specific mechanisms to control certain invasive plant infestations by introducing pathogens or insects to the site. Examples include the milfoil weevil (*Euthrychiopsis lecontei*) which feeds exclusively on Eurasian watermilfoil (*Myriophyllum spicatum*), loosestrife beetles (*Galerucella spp.)* that feed on purple loosestrife and water star grass (Heteranthera dubia) which may help to suppress Eurasian watermilfoil. However, while this method can be extremely effective, it should be used with caution as there is always the possibility of unintended consequences. Multiflora rose (*Rosa multiflora)* and Japanese knotweed (*Polygonum cuspidatum)* were both endorsed by a variety of government agencies for their ability to stabilize soils and stream banks before we realized the implications of introducing those species into the ecosystem.

The use of physical and mechanical control such as pulling, cutting or mowing is another option. Pulling is most effective on young shoots, plants with shallow root systems and/or when the ground is relatively soft (such as spring). Varying degrees of success can be achieved through cutting. It will often depend on the characteristics of the target species. Mowing may be used to reduce the overall height to allow more effective follow up treatments. Girdling is useful for larger shrubs and trees. Often this technique may be accompanied by an herbicide application.

For many, chemical control is seen as a last resort. However, anyone who has tried hand pulling Mile-A-Minute Weed (*Persicaria perfoliata*), or mowing Japanese knotweed only to have it come back even more vigorously, starts to recognize that herbicides may represent the *only* chance at control. Fortunately, the composition and application of herbicides has reached new levels of sophistication that go beyond simply spraying from the first jug in the tool shed with the skull and crossbones on the label. The tools are available to target individual plants for foliar applications (wipe on, wick applicators). Tools also are available to inject chemicals onto the stem of the target species. Specialized saws allow herbicides to be applied while the stem is cut. Understanding how the chemicals work in the plant and careful adherence to the label instructions make chemicals another possible tool.

Invasives, continued on page 4

Invasives, continued from page 3

The battle may not be lost if we understand the common traits of invasive plants and use that information to make educated decisions about the timing and application of control mechanisms. **Phenology** is the study of periodic plant and animal life cycle events and how they are influenced by seasonal and annual variations in climate. In general the phenology of invasive plants presents opportunities for control. Invasives tend to show early expression in spring, and have often greened up while native plants are still dormant. This allows the plant to take advantage of reduced competition for light from the tree canopy but it also highlights their presence in the ecosystem making them easier to target. This is followed by rapid growth, quick maturation and the formation of dense shade and root mass. Their success may be attributed to prolific seed and fruit production, as well as efficient dispersal mechanisms, enabling them to colonize available growing space and out-compete native vegetation. Invasive species also tend to have a high degree of plasticity which allows them to adapt quickly to cutting, mowing, or other manipulations of the habitat. They often display some form of allelopathy which allows them to suppress competition from neighboring plants by releasing chemicals to inhibit growth of competition. Other important lifecycle information includes knowing these points: Is it an annual, biannual or perennial? What is the main mode of reproduction (sexual, asexual or vegetative)? What organ(s) or life cycle stage are the over-wintering stages?

Understanding the invasive plant's physical and lifecycle characteristics provide a framework for determining the best and most targeted control that will have the least impact on the native species we are trying to protect. When all of these factors are taken together it turns out that chemical control is often the most effective method for controlling aggressive invasive species. It is also cost effective in that it offers the greatest control with the least amount of effort. New "reduced risk" formulations using plant specific amino acids offer low toxicity with favorable environmental fate profiles. By selecting the proper formulations, wise use and strict adherence to label instructions unintended consequences can be avoided.

Once the decision has been made to use a chemical control there are a variety of options available to suit the particular needs of each individual site. Understanding how these herbicides work helps to tailor their use to the appropriate plant during the appropriate time of year.

- Glyphosate (N-(phosphonomethyl) glycine, isopropylamine salt) commonly available under the Roundup® label for terrestrial sites and Aquamaster® for aquatic sites. Glyphosate functions as a metabolic disruptor that blocks the synthesis of critical plant amino acids, inhibits growth and causes chlorosis (yellowing of the leaves). It's translocation ability is plant dependant. It is a non-selective treatment for woody or herbaceous plants. It can be applied to the foliage, cut stump, evergreen plants, and invasives like garlic mustard (Alliaria petiolata) or Japanese honeysuckle (Lonicera spp.) that leaf out before other desirable species. In its concentrated form it is used in frill, girdle and cut stump treatments.

- Triclopyr (3,5,6-trichloro-2-pyridyloxyacetic acid) is the primary ingredient in Garlon® and Brush-B-Gone®. It functions as a growth regulator which mimics the plant hormone auxin. It weakens the cell walls and causes uncontrolled epinastic growth (resulting in leaves that bend downwards). The rapid growth depletes stored food, disrupts the photosynthetic cycle and prevents transport of nutrients to roots. It translocates readily affecting all parts of the plant. It is selective and will not harm monocot species such as cattails and grasses. It is available in ester (oil soluble) and amine (water soluble) formulations as Garlon 4®and Garlon 3A® respectively.

- Imazapyr Isopropylamine salt is a branch chain amino acid inhibitor found in Habitat®, Arsenal®, Chopper®, and Assault®. Imazapyr is a potent growth inhibitor that is very effective at low concentrations. It enters through the meristematic tissue and blocks the synthesis of critical plant amino acids. It translocates readily. The slow action depletes stored food, disrupts the photosynthetic cycle and prevents transport of nutrients to roots. It may take eight or more weeks before the onset of chlorosis is visible. It is generally non-selective although certain grasses and forbs exhibit tolerance. It is foliar and soil active so care must be exercised around the root zones of non-target vegetation.

- Krenite® or fosamine ammonium ethyl carbamoylphosphonate is a growth regulator that prevents cell mitosis. A foliar application allows the active ingredients to migrate to the apical meristematic tissue where it inhibits foliar expression the following spring. There are no visible effects to the plant in the year of application allowing control of tree and woody brush species without unsightly discoloration. It is selective to woody plant species will not injure grasses and forbs.

Invasives, continued on page 6

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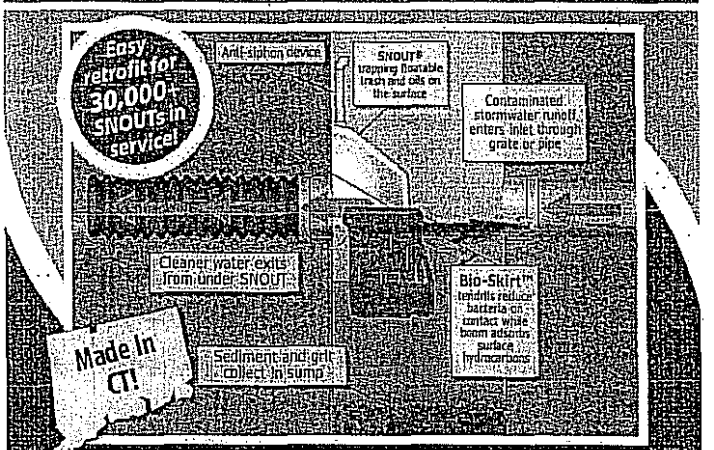

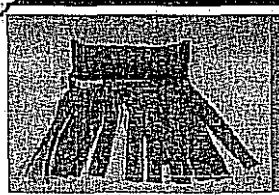

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Invasives, continued from page 4

- Some herbicides carry an aquatic, wetland or upland edge label for control in site specific conditions.

Understanding the phenology of an aggressive invasive provides insight into why that plant is so successful and the windows of opportunity that exist to maximize control measures. Each species and each site is a little different and will require a customized approach to restore the ecological balance. Understanding the tools that are available and the most effective ways to apply those tools will help to ensure success. With a careful application of the suite of available management techniques that can be supported with scientific research, they are more likely to be acceptable to all interested parties and can be effectively accomplished within budgetary limitations.

The Rogues Gallery of Common Invasive Plants Found in Wetlands and Some Practical Methods for Managing Them

Invasive	Physical/Mechanical	*Biological*	*Chemical*
Japanese Knotweed *Polygonum cuspidatum*	Cutting increases stem density. Repeated cutting may weaken. Cut material is viable. Root fragmentation will result in re-sprouting.		Triclopyr or Imazapyr foliar during early growth. Glyphosate injection with sufficient stem diameter or foliar after flowering.
Purple Loosestrife *Lythrum salacaria*	Cutting ineffective. Pulling may be effective for young plants. Medium plants may be Weed-Wrenched. Root fragments are viable.	*Galerucella* beetles can defoliate stands of Loosestrife. Beetles must be maintained once Loosestrife population is reduced to biennial rosettes.	Triclopyr foliar during early growth. Glyphosate over-wintering rosettes.
Japanese Barberry *Berberis thunbergii*	Cutting may be effective for widely scattered plants. Pull with Weed-Wrench when ground is soft.		Triclopyr foliar/basal during early growth (one of the first plants to leaf out in spring).
Asiatic Bittersweet Celastrus orbiculatus	Frequent cutting may be effective for small infestations. Vines entangled in trees should ***not*** be pulled. Hand pull light infestations and/or early growth.		Triclopyr foliar during early spring or to regrowth of cut vines, basal treatment to mature vines.
Garlic Mustard Alliaria petiolata	Cutting close to ground at onset of flowering can achieve 99% mortality. Repeat process to deplete seed bank. Hand pull when soil is soft, must remove upper ½ of root to prevent resprouting.		Triclopyr foliar during early growth. Glyphosate over-wintering rosettes.

Invasives, continued next page

Invasives, continued from page 6

Invasive	Physical/Mechanical	*Biological*	*Chemical*
Multi-flora Rose *Rosa multiflora*	Frequent cutting may control growth but will not eradicate. Weed-Wrench small to medium plants (larger plants should be trimmed for accessibility).		Triclopyr foliar during early spring or to regrowth of cut stems. Basal treatment to fresh cut stems.
Autumn Olive *Elaeagnus umbellata*	Cutting alone is ineffective. Will sprout from stumps. Seedlings and very young plants can be pulled when ground is soft. Saplings can be pulled with Weed-Wrench.		Triclopyr, Glyphosate or Imazapyr foliar to small/ medium scattered shrubs. Basal bark or cut stump treatment.
Winged Euonymus *Euonymus alatus*	Cutting alone is ineffective. Will sprout from stumps. Seedlings and very young plants can be pulled when ground is soft. Large plants can be Weed-Wrenched.		Triclopyr or Glyphosate foliar to small/medium scattered shrubs. Basal bark or cut stump treatment.
Tree of Heaven *Ailanthus altissima*	Cutting alone is ineffective. Will sprout vigorously from stumps and root zone. Seedlings and very young plants can be pulled when ground is soft. Large number of seedlings may make this impractical.		Triclopyr foliar to small/ medium scattered shrubs. Basal bark or cut stump treatment in late winter/early spring.
Poison Ivy* *Toxicodendron radicans*	Cutting alone is ineffective. Will sprout vigorously from stumps. Pulling NOT RECOMMENDED – All parts of plant contain volatile oils which may cause allergic rash at all times of year.		Triclopyr or Glyphosate foliar to low growing vines and shrubs. Basal bark or cut stump treatment with Pathfinder II to aerial vines.

*Although Poison Ivy is not an invasive species it is included here because of its noxious characteristics.

Additional Resources:

All Habitat Services, LLC, www.allhabitat.com ; University of Connecticut, College of Agricultural and Natural Resources, Integrated Pest Management Program, www.hort.uconn.edu/IPM/index.htm ; Invasive Plant Atlas New England, www.invasives.eeb.uconn.edu/ipane/ ; USDA NRCS Plant Database, http://plants.usda.gov ; Dow Agro Sciences Invasive Plant Resource Library, www.dowagro.com/ivm/invasive/.

David Roach is the General Manager of All Habitat Services, LLC, an innovator in the field of aquatic, wetland and upland habitat management. He has 15 years experience in both vegetation management and public health mosquito management programs and holds commercial supervisory pesticide applicator licenses for categories of Aquatic Pest, Right of Way, Bird, Mosquitoes and Biting Flies, and Public Health in Connecticut, Rhode Island, Massachusetts and New York.

JOURNEY TO THE LEGAL HORIZON *by Attorney Janet P. Brooks*

The Greatest Hits of the First Decade of the 21st Century

The Editor of The Habitat *has asked me to write an article based on my blog entries "Countdown to 2010: Five Most Significant Acts in the Past Decade" (December 27 - 31, 2009). I included a DEP act (Model Regulations), court cases, and a legislative response to a court case.*

I don't intend to look backward into the details of each case. If you are new to this job or want to understand the details of those cases, you can check out the blog posts (see URL listed at end of article) or articles in previous *Habitat* issues (available at caciwc.org.) This article will focus on how you will go about your duties, informed by the cases and the statutory sections list in the article. These cases, in the order listed below, will guide you in thinking about: jurisdiction over regulated activities; denials to permit applications; consideration of wildlife; denials based on lack of adequate information.

Prestige Builders, LLC v. Inland Wetlands Commission,
79 Conn. App. 710 (2003), cert. denied,
269 Conn. 909 (2004):

You need to be very familiar with your agency's definition of "regulated activity." The first thing I do when representing a client before a wetlands agency that I haven't previously appeared before is look for a copy of the agency's wetlands regulations online and go straight to the definition of "regulated activity." How large is the upland review area, and has the agency reserved its authority, *in a regulation,* to examine effects on wetlands and watercourses from activities outside the upland review area. *Has your agency reserved its right to examine the effects on wetlands and watercourses from activities outside the upland review area? You need to know that answer.* If the answer is yes, you will be fully prepared when an applicant or should-be applicant contests your agency's authority to inquire about activities occurring beyond the upland review area. If the answer is no, you will proceed cautiously. Even if the applicant doesn't challenge, at a wetlands meeting, your (lack of) authority to examine these upland activities, it doesn't mean the applicant won't raise it in a court appeal.

There are court appeals pending currently that seek to overturn the holding that an agency must first adopt a regulation reserving its authority to regulate activities beyond the upland review area. The Supreme Court, which can overrule the Appellate Court, hasn't weighed in on this issue and the Appellate Court says you need the regulation. The Appellate Court case is binding on all wetlands agencies. (Now, a reminder from my article in the last issue: has your agency considered amending its regulation to regulate activities wherever they occur?)

River Bend Associates, Inc. v.
Conservation & Inland Wetlands Commission,
269 Conn. 57 (2004)

Once you are grounded as to your agency's jurisdiction, you will consider the strength of the factual, scientific evidence when contemplating voting to deny a permit. The "possibility" or "potential" to harm a wetlands or watercourse is simply not sufficient, or in the lingo, doesn't constitute "substantial evidence" to deny a permit. Members of the public or even members of your agency can be *concerned* about the potential impact on a wetland. But the agency's concern alone, is not a valid basis to deny a permit.

Your agency review of an application is looking to determine whether the proposed activity will cause an adverse impact to a wetland or watercourse. It will also not be sufficient to rely on a scientific opinion that concludes, for instance, that pollutants in the stormwater, will pollute wetlands or a watercourse. There will have to be further scientific opinion that the specific pollutants in that quantity will have an *actual* adverse impact on the resource. Scientific studies about the Mississippi River, on their own, will not be sufficient. You will always be looking for the experts who connect the dots: pollution, in general [how the pollution control is designed to work] + expert opinion based on the site [what the effect on the wetlands will be when x amount of pollution is received in the rain water] = actual adverse impact.

Legal, continued on page 10

Legal, continued from page 5

AvalonBay Communities, Inc. v. Inland Wetlands Commission, 266 Conn. 150 (2003); Legislative enactment creating General Statutes § 22a-41(c) and § 22a-41(d):

The decade soon saw seemingly seismic upheavals by the Supreme Court in 2003 in its pronouncement about consideration of wildlife. By 2004 the legislature had calmed the waters by enacting § 22a-41(c) which expressly states that wetlands and watercourses "includes aquatic, plant or animal life and habitats in wetlands or watercourses." When you are considering impacts on wildlife your focus will be on where the proposed activity is occurring. Why? Because your authority to base a permit denial or permit condition from wildlife impact depends on it. That's different from how you otherwise evaluate applications. You get to impose permit conditions to protect the resources whether the activity will occur in the wetlands or in the upland review area. But not with wildlife. You must first determine where the activity is occurring (wetlands vs. upland review area). Next, if occurring in the upland review area, in order to deny an application or impose a condition based on wildlife, you will first have to find an impact on the physical characteristics of the wetlands or watercourse.

If you are new to your agency, it's more important to focus on the language in the statute, enacted in 2004, than understand what the Supreme Court said in 2003 about wildlife and how the legislature, in part, overturned the decision and, in part, affirmed it. The statutory language on wildlife controls your agency's actions -- *whether your agency has incorporated those changes into your regulations or not.* Why do I point this out? Because I have appeared before two agencies in the past year which have not changed their regulations to reflect the changes in the law.

Unistar Properties, LLC v. Conservation & Inland Wetlands Commission, 293 Conn. 93 (2009):

As you consider what impact a proposed activity will have on wetlands and watercourses, you can require the submission of information on the impact to plant and animal life *even outside the wetlands.* That preliminary information will shape your determination of whether the application will have an adverse impact on wetlands and watercourses. The applicant won't be able to rely on its own assessment that the activities pose no impact and refuse to submit wildlife information.

Concluding thoughts

I think there is a consensus that agency denials underwent far more scrutiny and were overturned more often in the 2000s than in previous decades. It would be mistaken, however, to look at the smack down by the Supreme Court of the denial in the *River Bend* case in 2004 and see a different trend emerging from the victory awarded by the Supreme Court to the agency in 2009 in the *Unistar* case. The *RiverBend* case was a denial based on the merits -- all of the expert reports and opinions. The *Unistar* case was a denial based on the applicant's refusal to submit information requested by the agency. The next phase will be for agencies to take the *Unistar* data, once it is submitted, and craft a denial, when warranted, by carefully connecting the dots between the necessary expert opinions.

Janet P. Brooks practices law in East Berlin. You can read her blog at: www.ctwetlandslaw.com.

Forest, continued from page 1

- Forests are key habitat areas for songbirds and other animals that are the primary control agents for insect and rodent pests.

- Forests sequester carbon and provide other localized climate stabilizing functions.

- Forests are an essential backdrop for tourism and recreational activities and can provide numerous other social, spiritual and economic benefits for a community.

Whether undertaking the active management of town-owned forest land, guiding local private woodland owners to reliable sources of assistance, or forming a basis for proper policy at the local level, it can greatly benefit local officials and decision makers to have an understanding of forest resource management and the principles associated with forest stewardship planning. These basic principles can apply to both individual private parcels and publicly owned woodlands.

"...it is important to understand that benefits and services provided by forests accrue primarily to those in closest proximity to the forest resource, so the protection and care of community woodlands and forest resources need to be a key consideration for local land-use decision-makers."

Forest Stewardship Plans are forest management guiding documents prepared for individual landowners and/or specific parcels of forest land. Generally, Forest Stewardship Plans embody several interrelated sustainability concepts and ideas, according a conceptual framework that will do the following:

- *Identify forest values, benefits and services to be sustained or enhanced* in or from the place or parcel under consideration. Landowners often wish to sustain or enhance certain benefits from their woods, and these wishes are often referred to as ***ownership goals.***

- *Specify indicators and desired future status for forest values and benefits.* Future conditions can be specified for particular locations on a property that will satisfy landownership goals, and these are often called ***management objectives.***

- *Examine relationships between existing conditions, natural processes, and forest benefits/values.* A detailed assessment of current forest vegetation and other features provides a basis for examining and prioritizing management options, often referred to as ***forest resource inventory.***

- *Consider whether human intervention can enhance identified forest values/benefits.* Is the forest in its present conditions providing the optimum balance of benefits to the owner or the public? Just as one takes action to manage the vegetation in their yard or garden to achieve desired results, certain interventions with forest vegetation may be appropriate to ultimately achieve a ***desired future condition*** (DFC) in a forest stand.

- *Manage forests/landscape to maintain and enhance identified forest values/benefits.* Specific actions or activities to undertake and the schedule to accomplish them are referred to as ***recommendations.***

- *Monitor and evaluate indicators.* Adapting, or revising a management plan periodically as conditions or objectives change will help to maintain its usefulness.

More specifically, Forest Stewardship Plans adhere to certain content guidelines and contain certain components to be useful and complete. While there may exist a variety of content formats, Forest Stewardship Plans generally accomplish *(and contain)* the following:

- Identify a specific forested tract
(Map and description)

- Describe the forest tract spatially and contextually
(Maps and aerial photos)

- Describe existing conditions of the forest resources
  Qualitatively
  Quantitatively
  (Stand map, inventory data, field observations)

- Specify long term goals and objectives for the forest *(Landowner input)*

- State a DFC for each forest stand
(Objective statements)

Forest, continued on page 12

Forest, continued from page 11

- Identify changes to be made to achieve the DFC *(Silvicultural recommendations)*

- Specify activities to be accomplished to affect those changes *(Action steps)*

- Provide economic data where appropriate *(Cost and/or income estimates)*

- Outline a time schedule for those activities.

Preparing forest management or stewardship plans, and more specifically, prescribing silvicultural recommendations, are activities reserved by statute in CT for professional forest practitioners that are licensed, or certified, by CT-DEP at the level of Forester. Certified Foresters have the necessary educational background, and have demonstrated competence by passing a written exam administered by CT-DEP. For communities interested in a more proactive approach to managing their forests, it is highly advisable to establish a good working relationship with a Certified Forester. While a town may ultimately engage the services of a private or consulting Forester, a good place to begin is with a visit from the Public Service Forester for your area. The CT DEP Forestry Division provides sound and unbiased professional forestry advice to towns and private landowners through the Service Forestry Program. The Service Forester is a knowledgeable and experienced professional state employee who can provide reliable information and technical assistance, and can help a community to a good solid start on the forest stewardship planning process. Service Forester contact information is provided below.

Upon acquiring open space or forest land, town decision-makers may ask, "Now what?" What are some ways a town can put these management planning principles to work?

Usually woodland property has been acquired or protected for the public good and for the benefit of the citizens of the town, and citizens will likely expect that the property is open for their use and enjoyment. Such expectations are reasonable and can be addressed by means of the model described above. For example, in addition to other reasons for woodland acquisition, the town may recognize a potential recreational benefit for residents on the property as an ownership goal and want to develop that potential. To satisfy this goal a management objective for a portion of to property might be expressed as follows: "Provide controlled public access by establishing [xx feet or miles] of walking path or hiking trail from Location A to Scenic Viewpoint B." The forest resource inventory may reveal soil types that are not sensitive and most suitable for a trail, topographic features a trail can use to advantage or avoid, unique habitat features to protect or leave undisturbed and perhaps other vegetative features to enhance or reveal. Analysis of this information in light of the goal will reveal some specifics, or desired future conditions, such as the ultimate location of the trail itself, the maximum steepness the trail may allow, the features of the property the trail will utilize, accommodations for rest stops, benches or other features as desired, daylighting or view enhancements and trail surface conditions. Recommendations for actions to take then follow, such as how to establish signage and a safe parking area at the trail head, what soil protection and erosion control methods to apply on slopes, guidelines for decisions about what stems and branches to clear and which to leave for the trail right-of-way and views, and how to accomplish other enhancements. Finally, the plan will outline a proposed time schedule for

Forest, continued on page 14

Forest, continued from page 12

executing the tasks outlined and suggest appropriate means for long-term maintenance.

Another example of management planning principles can be drawn from the interest in wildlife habitat held by many communities and landowners. As a general land ownership goal, developing or maintaining high quality wildlife habitat is commendable, but the manner in which that goal is achieved depends on the habitat needs of the species or group of species that are being encouraged and the nature of the existing forest conditions on the property. In this case wildlife habitat enhancement is the land ownership goal and attracting or encouraging a population of certain species on some portion of the property is the management objective. Specific vegetative requirements or habitat features essential to the survival of the species in question is the desired future condition. An examination of forest inventory information will tell us whether the conditions are right, or whether some action is recommended or needed to change the existing condition to the desired one. If this is the case, then the plan will describe what action to take and on what schedule, and will include logistical information along with cost or income estimates. If, for example, in a middle-age stand of mixed hardwoods a patch opening with a dense, young thicket of growth is created to enhance or restore habitat for ruffed grouse (a species of special concern in CT) cord wood produced from that activity could be sold to help pay for the work.

These are just a couple examples of ways in which forest management planning principles can be put to use in communities. Local commissioners can consider the advantages of proactive forest stewardship on town-owned woodlands or share these ideas with private landowners in their communities. Either way, it is important to understand that benefits and services provided by forests accrue primarily to those in closest proximity to the forest resource, so the protection and care of community woodlands and forest resources need to be a key consideration for local land-use decision-makers. Also, virtually any benefits or services forest lands provide can be enhanced and optimized through the proper application of management techniques. Professional assistance from a Certified Forester is key to successful management, and a great way to get started on forest stewardship is guidance from a public forester.

CONTACTS:

Western CT: Larry Rousseau, CT DEP Western District HQ, 230 Plymouth Rd., Harwinton CT 06791, 860-485-0226, Lawrence.Rousseau@ct.gov.

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Program Leader: Douglas Emmerthal, CT DEP Forestry, 79 Elm St. Hartford, CT 06106, 860-424-3630, Douglas.Emmerthal@ct.gov.

UCONN Extension Forestry: Thomas Worthley, Middlesex County Extension Center, 1066 Saybrook Rd. Haddam, CT 06438, 860-345-5232, thomas.worthley@uconn.edu.

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Summer 2010

OR Current Occupant

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CACWIC JOINS CONNECTICUT EARTH DAY 40 CELEBRATION

Representatives of the CACIWC Board of Directors provided information on the important roles of municipal Conservation and Inland Wetlands Commissions at the Earth Day 40 celebration, held April 22, 2010 in Hartford. CACIWC along with many environmental organizations, was invited to participate in the day-long event held at the various locations within the State Capital and Legislative Office Building.

"On April 22, 1970, millions of Americans showed their support for the environment on the first Earth Day," Governor M. Jodi Rell said in an announcement a few days before the ceremony. "This April 22, on the 40th anniversary of Earth Day, we will celebrate the progress we have made in cleaning our air, water and land while acknowledging the environmental challenges that remain."

To continue the Earth Day 40 celebration CACIWC's Annual Meeting Committee is seeking stories on early efforts of Connecticut Conservation and Inland Wetlands Commissions that were formed within the first decade of the original Earth Day. A series of special lifetime achievement awards are planned for this year's conference. See www.caciwc.org 2010 Annual Meeting and Environmental Conference page for more information and nomination forms.