

Tom Wells

Town of East Hampton

20 EAST HIGH STREET

February 8, 1996 EAST HAMPTON, CONNECTICUT 06424

MEMORANDUM

To: Town Council Members
From: Donald Markham, Council Chairman
Re: Blue Ribbon Panel (Lake Pocotopaug)

Submitted for your information and review is the entire record of the Lake Pocotopaug Blue Ribbon Panel. This panel was created on April 25, 1995 by the East Hampton Town Council with the express purpose of looking at and recommending action upon all the information and data gathered concerning studies and protection of Lake Pocotopaug. The organizational meeting was held on May 18, 1995.

The panel consisted of the five land use board chairmen, which boards ultimately have the statutory authority to implement specific recommendations gathered over the years to further the protection of the lake. The chairmen who participated are:

Fred Hansen, Planning & Zoning (succeeded by Jacqueline Fantasia January 26, 1996)
Charles Nichols, Zoning Board of Appeals
Jeffrey Foran, Inland Wetlands
Ralph Urban, Conservation Commission (Preceded by Tom Wells May - June 1995)
George White, Sewer Commission

The Chairman of the Town Council was designated the moderator of this panel. (Enclosed you will find the original authorization setting up the Blue Ribbon Panel.)

Numerous recommendations have been made by the panel to evaluate and set direction on all studies, analyses and recommendations. The Blue Ribbon Panel was conceived as a panel that would assist the town in implementing those recommendations that were determined to be prudent, cost-effective and necessary for the protection of the lake.

The Town Council has, through its own responsibilities, addressed updates to the East Hampton Road Standards, a document adopted by the Town Council. Additional recommendations have been sent to the land use boards, as necessary, for implementation. Some suggestions have been for the Capital Improvement Program. The panel reviewed the lake study prepared by the firm of Fugro-McClelland (Dave Worden, Limnologist); the engineering study prepared by WMC Engineers, and the Lake Advisory Committee reports. As you review the minutes, you will see that the panel addressed all of these areas and highlighted specific steps that need to be taken for the protection of the lake.

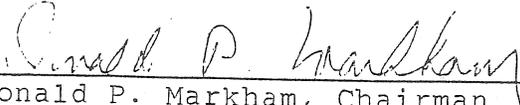
At this time, the Blue Ribbon Panel considers its work to be complete and has requested that the panel be dissolved. The Town Council now has the future responsibility to enact, adopt or assign any outstanding items to be carried out as recommended by the Blue Ribbon Panel.

It should be recognized that former Council Chairman Robert Heidel served as moderator of this panel when it was organized in April of 1995, until November of 1995, when I, as Council Chairman, became moderator. On behalf of the Town Council I thank Mr. Heidel for his service.

I take this opportunity to acknowledge the dedicated efforts of the panel members, and our professional town staff as well as the boards, commissions, agencies and committees that have, over the years, gathered or prepared information for ultimate consideration by this panel.

Each Council member should take the opportunity to carefully review the minutes contained herein and the executive summary of specific recommendations that follow.

Respectfully submitted,



Donald P. Markham, Chairman
East Hampton Town Council
and Moderator, Ex Officio, Blue Ribbon Panel

Town of East Hampton

20 EAST HIGH STREET

EAST HAMPTON, CONNECTICUT 06424

BLUE RIBBON PANEL

On Lake Pocotopaug

Summary of Recommendations

*Amendments to Street Standards (Appendix) Recommended to
Town Council 7/17/95 - Accepted by Town Council 8/1/95

*Testing With Volunteers under direction of the Health
Department, recommended to Town Council 7/17/95, Accepted
by Town Council 8/1/95

*Planner's Report Re: W.M.C. Engineers Report and P&Z
Subdivision 7.12 proposed regulation. Recommended to
Town Council 10/16/95

*Dredging O'Neill's Cove and additional dredging at Hale's
Brook prioritized. Recommended to Town Council 12/18/95

*Letter to private property owners around the lake to be
sent regarding as it applies to W.M.C. Engineering report.
Recommended to Town Council 12/18/95

*Review of Lake Pocotopaug management recommendations report
1/22/96 with observations and recommended action to Town
Council

Town of East Hampton

PROPOSAL

That the Town Council create a Blue Ribbon Panel" to review and evaluate the various reports prepared by W.M.C. Engineers, Fugro-McClelland, and the previous Ad Hoc Lake Advisory Committee and to make recommendations to the Council for implementing those deemed feasible by a majority of this panel.

The panel shall consist of the Chairmen of the following Boards:

1. Planning and Zoning
2. Inland Wetlands
3. Zoning Board of Appeals
4. Conservation Commission
5. W.P.C.A.

The Town Council Chairman shall moderate this panel which will meet monthly, but shall not have a vote except to break a tie.

The Manager shall assign staff assistance of the following personnel:

1. James Carey, Planning Administrator
2. Thad King, Health Director
3. Robert Drewry, Supt. of Public Works
4. Brad Kargl, Public Utilities Administrator

The panel may confer with the consultants as necessary regarding their specific recommendations. This proposal provides for the natural transition from the study stage to actual implementation stage of lake protection and enhancement.

The panel shall report its activities to the Town Council on a quarterly basis.

APPROVED / ADOPTED

By The East Hampton Town Council

Date: 4 / 25 / 2011

BLUE RIBBON PANEL
MINUTES
JANUARY 22, 1996

Present: Moderator Don Markham, Members Charles Nichols, George White, Jeff Foran, Ralph Urban, Fred Hansen, Jacqueline Fantasia, Building Planning Zoning Administrator Jim Carey and members of the public.

Moderator Don Markham called the meeting to order at 7:30 PM in the WPCA Meeting Room.

MOTION by Jeff Foran and seconded by Charles Nichols to accept the minutes of December 18, 1996. **VOTE: Unanimous.**

Review of the LAKE POCOTOPAUG MANAGEMENT RECOMMENDATIONS REPORT

SUMMARY OF RECOMMENDATIONS (section 2, page 3)

Objective I - This objective is covered under the seventy-six items listed in the Field Reconnaissance of Lake Pocotopaug Watershed Report.

Objective II - Item #4 concerning the operation of motor boat and jet-skis is under review for a new ordinance. The other areas of concern have been addressed at previous meetings.

Objective III - Item #2 regarding the Phosphorus Management Method (PMM) is not included in 7.12. Regulation is questionable. Items #4 and 10 will be discussed at Open Space Workshop.

NARRATIVE (section 3, page 6) No Discussion.

RECOMMENDATIONS (section 4, page 16)

Objective I

- Recommendation #1 - Creating a permanent Lake Advisory Committee, this item does not have the support of the Town Council. Duties are handled by the various town agencies.
- Recommendation #2 - Under Capital Improvement.
- Recommendation #3 - Handled by the Health Department and is an ongoing process.
- Recommendation #4 - The various town boards control this recommendation.
- Recommendation #5 - This is an ongoing project of the Conservation Commission.

- Recommendation #6 - We have a town planner already. Engineering and legal concerns can be taken care of with the many resources that are available to the town.
- Recommendation #7 - Ongoing.

Objective II

- Recommendation #1 - Addressed in the WMC Report.
- Recommendation #2 - Copper Sulfate is budgeted for and could be used if deemed necessary. However, considering the location and the water supply wells, the DEP may not allow copper sulfate to be used. A State permit is required for its application.
- Recommendation #3 - A dialog between the town and Mr. Bevin is being maintained. The DEP has notified Mr. Bevin about the maintenance of the dam. The concerns should be addressed by Mr. Bevin.
- Recommendation #5 - Ongoing for Inland/Wetland Commission.
- Recommendation #6 - A couple of areas have continual problems, some are private property and some public-private.
- Recommendation #7 - Discussed at the last meeting.
- Recommendation #8 - This issue is being addressed in the new regulations.
- Recommendation #9 - Discussed at the previous meeting.
- Recommendation #10 - No plans to expand system, most expansion is being done by developers.
- Recommendation #11 - This recommendation is already in place.
- Recommendation #12 - This issue is being addressed by building codes and at a much higher level.
- Recommendation #13 - No money is available for this recommendation.
- Recommendation #14 - Inland/wetland agency handles this.
- Recommendation #15 - Ongoing.
- Recommendation #16 - The biggest concern is the swans and to educate the public about them.

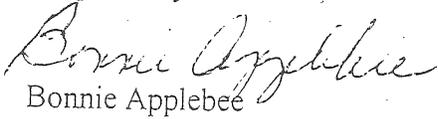
Objective III

- Recommendation #1 - This recommendation was addressed at the previous meeting.
- Recommendation #2 - PMM - This is a controversial issue, other towns are not using the Phosphorus Management Method.
- Recommendation #3 - Ongoing.
- Recommendation #4 - Ongoing.
- Recommendation #5 - Planning and Zoning, Inland/Wetlands.
- Recommendation #6 - Addressed in the WMC Report, changes made to the Road Standards regulation.
- Recommendation #7 - Provision under regulations being proposed would come from a public hearing.
- Recommendation #8 - Handled by the P & Z and I/W agencies and enhanced by 7.12.

- Recommendation #9 - Inland/Wetlands primary responsibility.
- Recommendation #10 - Ongoing with the P&Z.
- Recommendation #11 - Language is already in place.
- Recommendation #12 - If 7.12 goes through, subdivision is by special permit.
- Recommendation #13 - This is the function of different groups.
- Recommendation #14 - This is controlled by the Zoning Board of Appeals.

MOTION by Charlie Nichols and seconded by Jeff Foran to advise the Town Council that the job is completed and the panel wishes to disband. **VOTE: Unanimous.**

Respectfully submitted,


Bonnie Applebee

Town of East Hampton

20 EAST HIGH STREET

EAST HAMPTON, CONNECTICUT 06424

BLUE RIBBON COMMITTEE MEETING

THURSDAY, MAY 18, 1995

7:30PM TOWN HALL MEETING ROOM

The Blue Ribbon Committee will hold its organizational meeting at the above date and time.

**BLUE RIBBON PANEL
MEETING NOTES
MAY 18, 1995**

Present: Moderator, Robert Heidel; Members Jeff Foran, Charles Nichols, Tom Wells, Frederick Hansen, and George White; Building Inspector, Jim Carey.

Moderator Robert Heidel Called the meeting to order at 7:31 p.m. in the town hall meeting room. Mr. Heidel presented to the panel a discussion outline (see attached outline) as a jumping off point. Mr. Heidel noted that one aspect that needed to be addressed is watershed management and from there stormwater management.

Input of panelists:

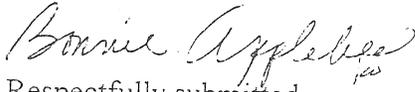
- Long range water system in town, possible location: Clark Hill, including a discussion about the impact this would have on the drainage area of the lake
- Two reports appear to mesh and are saying the same thing - much of the data in them could be listed in one place
- Documentation as to how to go about this lake management plan
- Group dynamics uncertain, maybe a plan will evolve out of decisions
- Review and evaluate the various reports - consider improving water quality first.
- Explore the effectiveness and cost effectiveness of the different techniques used in lake management (\$20,000 set aside) for long range treatment of the lake.

Decisions that need to be addressed at the next meeting:

1. Monitoring plan - The Conservation Commission and the Health Department must come together to coordinate and formalize a monitoring plan. Thad will attend the June 1, 1995 meeting to discuss what his proposals are and to see if they are consistent with what the panel wants.
2. Education - Funds are set aside in the Conservation Commission budget to fund various educational efforts that were recommended by the Lake Study Report. The Conservation Commission is waiting for approval from Town Council. Mr. Heidel will seek a resolution from the Town Council.
3. Funding - Watershed projects have been included in the Public Works agenda for the year. Moneys are available to have dissolve oxygen meter repaired. Tom Wells will check out prices on a mixing device to put on the meter. Funds may be encumbered by June 30, 1995 for purchase or repair after July 1, 1995.

4. In-lake and Watershed Management - More discussion needed on questions raised regarding the possibility of creating new zones or revising existing zones and regulations. Clarity and specificity would be needed if zones are created or revised. Jim Carey will bring these issues to the attention of Planning and Zoning workshop and will report back to the Blue Ribbon Panel at July's meeting.
5. Public Works Superintendent, Robert Drewry will be invited to discuss road plan.

The next meeting of the Blue Ribbon Panel will be Thursday, June 1, 1995 at 7:30 p.m.
Meeting adjourned 9:00 p.m.


Respectfully submitted,

Bonnie Applebee, recording clerk

BLUE RIBBON COMMITTEE
MONDAY, JUNE 5, 1995
7:30pm
WPCA MEETING ROOM
Gildersleeve Drive, East Hampton.

A G E N D A

1. Discussion of Road Standards and Engineering Criteria for Associated Public Works Projects Pertaining to Watershed Area

BLUE RIBBON PANEL

Meeting Notes

June 5, 1995

Present: Moderator, Robert Heidel; Members: Charles Nichols, Tom Wells, Jeff Foran, George White, Frederick Hansen.
Others: Jim Carey, Administrator of Planning, Public Works Director Bob Drewry, Tom Cummings, Town Engineer, George Pfaffenbach.

Moderator Robert Heidel called the meeting to order at 7:33 p.m. in the WPCA Meeting Room on Gildersleeve Drive. Mr. Heidel decided that since the May 18, 1995 minutes were not previously received that they be considered at the next scheduled meeting.

AGENDA

1. Discussion of Road Standards and Engineering Criteria for Associated Public Works Projects pertaining to Watershed Area.

Tonight we will discuss the recommendations of the WMC Drainage Study report regarding amendments to the Road Standards made to assist in an overall Lake Watershed Management Plan as both Mr. Drewry and Engineer Cummings are present. Fifteen general recommendations and revisions were suggested.

Mr. Carey stated the Road Standards are an instrument of the Town Council and portions are incorporated into the Zoning and Subdivision Regulations, but it is a stand alone technical document. Mr. Wells feels they should be consistent with the Zoning Regulations.

Attached is a copy of the comments of the WMC Study. Some items discussed in detail were:

New Street Construction drainage design. During the construction of new roads, the Town tries to incorporate the use of drainage swales where appropriate, double sumps catch basins, sedimentation basins and detention basins, grassed swales, rip rap etc. Mr. Cummings stated that each of these devices are considered for use in individual situations in order to get the stormwater into the ground.

Intersections - Shared driveways are encouraged for interior lots. We do not have a cluster subdivision regulation at this time. We encourage drainage of streets by sheet flow into roadside vegetated swales where possible.

Mr. Carey advised our road standards are performance based instead of only being specified standards.

Side Slopes - Mr. Cummings agrees that if there is a high slope area (greater than 15 ft.), they bench (terrace) the areas to control the drainage down the slopes. For example, Spice Hill should have been benched on the down slope facing the pond.

Driveways - Most driveways are private. We do have standards regarding the installation of driveway aprons. Driveways in excess of a 15% slope must be paved. We do not specify porous bituminous concrete because we do not know about the availability. We also do not suggest using process material (gravel and

stone) because it washes into the roadway and ultimately into the lake.

Design General Requirements - Mr. Cummings agrees that pipes should be installed as far down the slopes as possible to prevent leak off over the slopes.

Energy Dissipaters - Mr. Cummings advised we use plunge pools as energy dissipaters to prevent erosion, which is shown in the road standards. We use them as needed. WMC is asking that they be required.

Use of Channels - Public Works has had problems with the maintenance of channels. Sometimes it is better to use a pipe, but when it is appropriate, we use the channels (grassed swales) because it is cheaper and we want to increase ground water infiltration. Mr. Drewry stated many times people don't want swales next to their homes. They overgrow too.

Mr. Wells stated using swales is the state of the art way of dealing with stormwater to reduce nutrients and phosphorous, and if we don't use this way we have to utilize another way, and this should be encouraged. He also suggested the use of vegetative dams to reduce water velocity.

Design of open channels - Cummings stated it could be made part of the specifications on a job.

Mr. Wells commented the design of open channels should be made in a way to reduce sediment and nutrient transport and increase infiltration by the installation of vegetative (check) dams.

Detention Basins - Cummings advised detentions basin are part of the road standards. When you build a road, stormwater flows are increased and the detention basin is intended to attenuate the stormwater flows in accordance with the downstream conditions. Sediment basins are meant to hold water for a long period of time so that the sediments can collect, and they must be cleaned periodically. Sediment basins are usually two and one-half times larger than detention basins. In Connecticut it takes five acres of development before the need of a sediment basin is considered. Sediment basins are used during construction and then they are filled in. There is liability with them, and sometimes when they are really large, they have to be fenced because they can become an attractive nuisance. WMC is asking that the installation of sediment basins be required. Mr. Heidel felt there are too many variable to require sediment basins as a matter of standard.

Mr. Wells stated sediment basins are a very effective way to reduce nutrients for water quality control.

Catch Basins - Mr. Cummings does not like hooded catch basins because when they fail; big problem with maintenance. They use them at shopping centers. These catch basins act like a septic system by reducing floatables, organic materials and oils, from being discharged.

Mr. Drewry advised we are presently using double sumps to catch more materials.

There was a lengthy discussion about maintenance of catch basins, gross particle separators, sediment basins, swales, etc., and the specialized equipment needed to clean them. Public Works presently has a clam shell to clean catch basins. WMC stated the Town should consider the use of a vacuum type catch basin cleaner

in place of the clam shell as a more effective method of removing the sediments and organics from basin sumps. WMC suggested the Town could decide to remove sediments from the lake by the acquisition of a hydraulic dredge. Also, a small articulated backhoe is useful for maintaining sediment basins and swales.

Mr. Drewry stated he has approximately 400 catch basins to clean at this point.

Robert Drewry stated the Road Standards are done for the entire Town, this WMC Report is for the Lake area. We haven't had a subdivision near the Lake in a long time. WMC is addressing the road standards for around the lake. If we make changes to the road standards, we are making them for the whole town. It was suggested that an addendum to the road standards for the watershed area may be what is needed.

After some discussion, it was decided that Town Engineer Cummings and Bob Drewry would submit recommendations to this committee at the next scheduled meeting regarding the WMC's study on road standards.

Mr. Heidel asked Mr. George White what would be the chance of Public Works being able to use the WPCA vacuum truck to clean basins. Mr. White said he would bring this up at the next WPCA meeting, June 20th.

NORTH MAIN STREET PROJECT

Mr. Cummings advised because of the funding available, they hope to extend the North Main Street road project, approximately 1,000 ft., up to Bobby Road. They will be extending the sidewalk on the lake side, and relocating some of the road inlets. Another letter will be going to CL&P about relocating the light poles. The roadway is 24 ft. wide, the lake side will be curbed, and oversized catch basins installed.

Mr. Wells stated a priority list of proposed drainage problems should be made. This would help prevent erosion problems by finding the source of potential pollution. Maybe a cooperative effort between the Town and some private land owners could be considered in order to have some of these road paved to prevent runoff into the lake.

Mr. Heidel stated he would ask Karen to call everyone to set up the next meeting date.

Items to be Discussed Next Meeting

1. Recommendations of Town Engineer and Bob Drewry Re: Road Standards
2. Monitoring Plan - Thad King should be invited.

The meeting adjourned at 9:10 p.m.

Respectfully submitted,


Carol Micek

As the check list suggests, inspections of the regulated activity would be conducted weekly and prior to and after major rainfall runoff events. For example, inspections could be conducted after an inch or more of rainfall has occurred during any single storm event. Storm events typically occur over a 24 hour period and may be intensive during only a portion of the rainfall period.

III. Road Standards and Road Study

The Town of East Hampton Street Standards are detailed and should only require minor revisions to reflect future amendments to Zoning, Planning and Wetlands Regulations made to assist in an overall Lake Watershed Management Plan.

General recommendations and revisions to the Standards are as follows:

- Incorporate Planning & Zoning, Wetlands Regulations recommended amendments and goals in the Road Standards.
- Section 04.01.3 - New Street Construction (Ref. 2 page 04-02), drainage designs should provide for a reduction of sediment, phosphorous and nitrogen imported to the lake and should include calculations to determine present, future and future with stormwater treatment estimates of sediment and nutrient loadings expected. This should be applicable to new roadway designs as well as reconstruction and rehabilitation of existing roadways.
- Section 05.02.03 - Intersections (Ref. 2 page 05-02), The spacing of intersections requirements could be increased to encourage the use of shared driveways and cluster type developments. This would also necessitate the revision of the block dimensions, Section 05.02.04.
- Drainage of streets should, where possible, be by sheet flow to roadside vegetated swales with catchments, i.e. small berms to slow stormwater and permit sediment deposition and stormwater infiltration.
- Section 05.02.06 - Side Slopes (Ref. 2 page 05-05), slope grading limits not steeper than 2' horizontal to 1' vertical are typical maximums. Requirements for reverse slope benching should be required for slopes adjacent to sensitive areas (near wetlands or watercourses, or within buffer zones) or whenever the vertical interval of any 2 to 1 through 5 to 1 slope exceeds 15 feet. Benches should be located so as to divide the slope face as equally as possible and should convey stormwater runoff or other waters to a stable outlet. Drainage and other water should be directed away from the slope or carried to a lower elevation by the use of storm drainage piping (cmp with concrete anchors works well)⁸.
- Section 05.02.08.2 - Driveways (Ref. 2 page 05-06), driveway surfaces should be defined, specified as porous bituminous concrete pavement or stable processed aggregate surface.

- Section 06.02.01.4 & 8 - Design General Requirements (Ref. 2 page 06-03), the placement of pipes section should specify additional criteria for placement of pipes near slopes. Drainage pipes should extend beyond the toe of the fill slopes and not terminate at or on a slope. Likewise, stormwater runoff should not be permitted to leak off over slopes, a design which will fail in most applications resulting in erosion.
- Section 06.02.01.8 (Ref. 2 page 06-03), energy dissipaters should be required at all outlet structures to prevent scour erosion and future failure of the outlet structure.
- Section 06.02.01.11 (Ref. 2 page 06-04), the use of channels should be encouraged, vegetated roadside swales, vegetated channels with designed catchments and elevation drop structures (earth and riprap or gabions) all could result in the reduction of sediments and nutrient transport to the lake. These types of channels or swales should also result in increase ground water infiltration and peak flow discharge attenuation.
- Section 06.02.03.3 (Ref. 2 page 06-08), the design of open channels should require the attenuation of peak flow, retain sediment, reduce nutrient transport, and increase infiltration.
- Section 06.02.04. Detention Basins (Ref. 2 page 06-04), this section should be replaced or require the installation of sediment and stormwater renovation basins. Sediment basin design should be based on the "Connecticut Guidelines for Soil Erosion and Sediment Control"⁸.
- Section 06.03.05 Catch Basins (Ref. 2 page 06-14), catch basins should be required to have outlet hoods to reduce floatables (organic materials and oils) from being discharged. The use of a gross particle separator with a catch basin top should be required where heavy sediment loads can be expected. Heavy loadings may occur at areas such as low points in roads, intersections and near some types of land uses like new construction areas, farming areas, timber harvesting areas, gravel roads and parking areas.
- The maintenance of catch basins, gross particle separators, sediment basins, swales etc. may require the use of somewhat specialized equipment. The Town should consider the use of equipment specifically design for the maintenance of these structures mentioned. The use of a vacuum type catch basin cleaner in place of the clam shell type now used by the Town is more effective in removing accumulated sediments and organics from basin sumps. A small articulated excavator/back hoe is useful for maintaining sediment basins and swales. If the Town decides to remove sediments from the lake it should consider the acquisition of a hydraulic dredge.
- Section 06.03.08.2 (Ref. 2 page 06-14), channel stabilization should require the use of geotextile fabrics and erosion control blankets, flexible non-structural channel linings and structural interlocking concrete pavers.
- Section 06.04.04 (Ref. 2 page 06-16), dewatering of excavations should be discharged to previously constructed and approved temporary sediment basins designed to handle the anticipated maximum flow rates and sediment loads.

Town of East Hampton

20 EAST HIGH STREET

EAST HAMPTON, CONNECTICUT 06424

BLUE RIBBON PANEL
MONDAY, JULY 17, 1995
WPCA MEETING ROOM 7:30PM
Gildersleeve Drive, East Hampton

A G E N D A

1. Road Standards Discussion
2. Lake Testing Program

cc: J. Carey
T. King
R. Drewry

**BLUE RIBBON PANEL
MINUTES
July 17, 1995**

Present: Moderator, Robert Heidel; Members Jeff Foran, Charles Nichols, Julie Pearce, Frederick Hansen, and George White.

Others in attendance: Building Inspector Jim Carey, Town Engineer Tom Cummings and George Pfaffebach.

Moderator Robert Heidel called the meeting to order at 7:28 p.m. in the WPCA meeting room.

A **motion** was made by Jeff Foran and seconded by Frederick Hansen to accept the notes and minutes of the two previous meetings of May 18 and June 5, 1995. **All in favor.**

AGENDA ITEM # 1: Road Standards

Mr. Tom Cummings presented to the Panel in detail (see: attached letter) his recommendations as to what should or should not be incorporated into the current Street Standards.

Mr. Heidel noted the appendix at the end of the letter - apparently this would be the modifications that we would make to the Road Standards for those streets within the watershed area.

Mr. Cummings noted that the items listed with the bullets are just a description of each recommendation. The actual appendix shows what recommendations be added to the Road Standards or the changes along with the watershed map for roads within the lake area. Mr. Cummings discussed briefly specific items noted on page 7 and 8 in the Lake Report (see: bullets on page 2 and 3 of attached letter).

Mr. Foran noted that the Street Standard would be adopted by the Town Council to incorporate into document.

Mr. Foran moved that the Town Council adopt the appendix as presented by Mr. Cummings in his report for the lake watershed area and ask them to consider adopting the appendix for other applicable areas. **Mr. Hansen seconded the motion.**

Discussion - Ms. Pearce noted that the purchase of a basin vacuum be explored in the near future. This equipment is a high priced and high maintenance item and perhaps a sinking fund should be started for a future purchase.

Vote - all in favor to bring motion forward to the Town Council.

AGENDA ITEM # 2 - Lake Testing Program

Mr. Thad King, Town Sanitarian was present to discuss the Lake Testing Program. Since the end of the advisory group, there hasn't been any place to allocate money for testing. Mr. King has put aside \$500.00 on a contingency basis to carry through costs. No money budgeted to do inlet sampling. At present, the Health Department utilizes the state lab. As long as it's a public health issue, these samples are tested at no cost to us.

Inlake testing is done once a month and inlet sampling is taken at 20-29 different locations - streams, storm drains identified within the phosphorate report. Inlet testing is best done right after a storm event and is done at least twice a year. After capturing the greatest concentration - samples could be sent to the state lab. Testing is more consistent when same lab is used.

Under what auspices should the Lake Testing Program be carried out?

- Continue with the volunteers under Mr. Kings direction.
- Hire it out - costly.
- Continue with CEL and wrap it into Health Department.

Accountability should lie with the Health Department. If Mr. King is comfortable working with the volunteers, that would be the way to go. Schedule of testing - when, what tests, etc. would have to be worked out.

Mr. Heidel expressed appreciation to the volunteers for their work.

A discussion was held concerning the testing equipment i.e., D.O.Meter, probe requires work, probe extension and a Van Doren bottle. The Van Doren bottle grabs samples and is more consistent with the way samples were taken in 1991. Cost of this piece of equipment would be approximately \$300.00.

Jeff Foran made a motion for the panel to recommend to the Town Council that the testing be continued with volunteers under the direction of the Health Department and that a Van Doren bottle be purchased. **Motion seconded by Mr. Frederick Hansen.**

A brief discussion was held regarding the need of an oxygen meter and retrofitting the probe with an agitator. This agitator may not fit the probe, someone should find out about it.

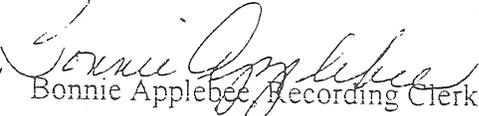
VOTE: All in favor to bring motion forward to the Town Council.

Agenda for the next meeting:

- P & Z Regulations to be discussed.
- Plan of development.

Motion by Jeff Foran and seconded by Mr. Nichols to adjourn. Meeting adjourned 8:55 PM. The next meeting will be held August 21, 1995 at 7:30 PM. at the WPCA.

Respectfully submitted,


Bonnie Applebee, Recording Clerk

CLA Engineers, Inc.

Civil • Structural • Survey

317 MAIN STREET • NORWICH, CT 06360 • (203) 886-1966 • (203) 886-9165 FAX

July 6, 1995

Mr. Robert Heidel, Moderator
Lake Pocotopaug Panel
20 East High Street
East Hampton, CT 06424

RE: Street Standards
CL-95-1327G

Dear Bob:

The Street Standards provide a guide describing roadway construction practices in East Hampton in accordance with appropriate design parameters, available materials and proper workmanship. The Standards strike a balance between safety, long term use, maintenance requirements and construction costs. Within the document, erosion and sedimentation controls, drainage inlet and outlet structures, and other measures attempt to provide stable surface conditions associated directly with roadways. The Standards have not considered roadways as a line of defense against upland or off-road sedimentation. The reduction of downstream sediments can be costly due to structures, land use and maintenance requirements. The practicality of such measures must be weighted against their benefits.

East Hampton has a particular situation in regard to Lake Pocotopaug. It may be prudent to enhance the Street Standards for roadway work within the Lake's watershed in order to better protect the Lake from sediments. Any measures or structures installed to reduce sediments must be properly maintained; and once sediments become concentrated, their collection and disposal must be properly performed.

The Stormwater Renovation and Management Plan for the Lake Pocotopaug watershed offered several items which could be revised within the Street Standards "to assist in an overall Lake Watershed Management Plan". The attached Appendix revises certain sections of the Street Standards for roadway construction work within the watershed area shown on the map.

Regarding the specific items noted on pages 7 and 8 in the Lake report:

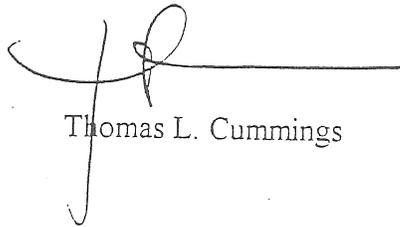
- The Appendix requires sedimentation controls as part of all roadway construction within Lake Pocotopaug watershed.
- Sec. 04.01.3 Calculations must be provided as recommended.
- Sec. 05.02.03 The spacing of intersections is a safety issue and cluster development is not allowed, thus no revision is proposed.
- Roadside swales are included in Section 06.01.02.5.
- Sec. 05.02.06 The sideslope considerations have been added as recommended.
- Sec. 05.02.08.2 Only driveways over 15% slope are required to be paved due to sediment considerations onto the roadways. Beyond that, driveways are on private property and not part of the Street Standard.
- Sec. 06.02.01.4 Placement of drainage outlets at the toe of slopes has been added as recommended.
- Sec. 06.02.01.8 The word may has been substituted with the word "shall".

- Sec. 06.02.03.11 Channel use is encouraged as recommended, in a case by case basis.
- Sec. 06.02.03.3 Open channel design shall consider several sedimentation factors as recommended.
- Sec. 06.02.04 Detention basins are not deleted since they may be appropriate in particular situations. Retention basins may also be appropriate, as well as sedimentation basins, or some combination of these structures. Because sedimentation calculations are required under Sec. 04.01.3, then the need for certain collection methods can be evaluated in conjunction with storm flows.
- Sec. 06.03.05 The outlet hoods in catch basins will not allow for the proper functioning of the catch basins. The drainage systems in East Hampton are basin to basin design with increasing culvert sizes, thus precluding hood installation. There are potential clogging problems and flushing in a severe storm. East Hampton does not have the equipment needed to properly clean basins with hoods. Gross particle separators with basin tops require equipment not owned by the Town.
- Should the Town acquire road maintenance equipment, then the Street Standards could be reviewed at that time.

- Sec. 06.03.08.2 Stabilization materials have been added as recommended.
- Sec. 06.04.04 Sedimentation basins as part of dewatering consideration have been added as recommended.

If you have any questions please call me.

Very truly yours,

A handwritten signature in black ink, consisting of a stylized 'T' and 'C' followed by a horizontal line extending to the right.

Thomas L. Cummings

TLC:bab

APPENDIX
STREETS WITHIN THE
LAKE POCOTOPAUG WATERSHED

Any roadwork within the Lake Pocotopaug watershed as shown on the watershed area map shall be subject to the following:

Section 04.01.3 add the following paragraph:

j. Drainage designs should provide for a reduction of sediments, phosphorous and nitrogen imported to the Lake. Calculations to determine present and future estimates of sediment and nutrient loading following roadway construction and adjacent development shall be completed in the report. The estimated effect of the proposed stormwater treatment on these loading must be included.

Section 05.02.06 add the following to paragraph 1 after the last sentence:

Reverse slope benching shall be provided for any slopes with grades between 2 to 1 through 5 to 1 that exceed 15 feet in height. Benches shall be located so that the slope face is as equally divided as possible and they shall convey stormwater runoff or other waters to a stable outlet. Drainage and other water shall be directed away from the slope and carried to a lower elevation by use of storm culverts.

Section 06.01.02 add the following paragraph:

5. Drainage shall, where possible, be by street flow to roadside vegetated swales with catchment. Measures to allow sediment deposition and stormwater infiltration shall be considered in drainage designs.

Section 06.02.01.4 add the following after the last sentence:

Drainage culverts shall extend to and beyond the toe of fill slopes. Discharges to the top of or within fill slopes shall be avoided and allowed only upon approval of the Town Engineer.

Section 06.02.01.8 revise as follows:

The word may in the last sentence shall be changed to "shall".

Section 06.02.01.11 delete the first sentence and substitute the following:

The use of channels, vegetated roadside swales, vegetated channels with catchments and elevation drop sections shall be used to carry storm water to natural water courses or outlet areas. Channels near proposed homes will be given special attention and must be approved by the Town Engineer.

Section 06.02.03.3:a add the following after the last sentence:

The design of the open channel shall consider attenuation of peak flows, retention of sediments, reduction of nutrient transport and increase infiltration.

Section 06.02.04 delete the entire section and substitute the following:

06.02.04 Sedimentation, Retention and Detention Basins

1. Requirements: Special attention shall be given to the control of quantity and quality of surface water runoff. It intended that particular structures be installed as necessary to limit sediment loading and peak discharges from the storm system so that adverse effects shall be mitigated on receiving streams, storm systems or Lake Pocotopaug.

2. Procedures: The design of the structures shall be based on the latest edition of Connecticut Guidelines for Soil Erosion and Sediment Control and the following shall be performed:

- a. Analyze watershed drainage and loading data and determine potential structures required.
- b. Identify potential sites
- c. Select design recurrence intervals
- d. Select design particle size and settling efficiency
- e. Perform hydrologic and hydraulic design
- f. Determine flows and volume
- g. Design basin dimensions, inlet and outlet structures

3. Maintenance: Access roads and easements shall be provided for all sediment, detention and detention facilities.

4. Safety: Fencing and buffering shall be provided as prescribed by the Town.

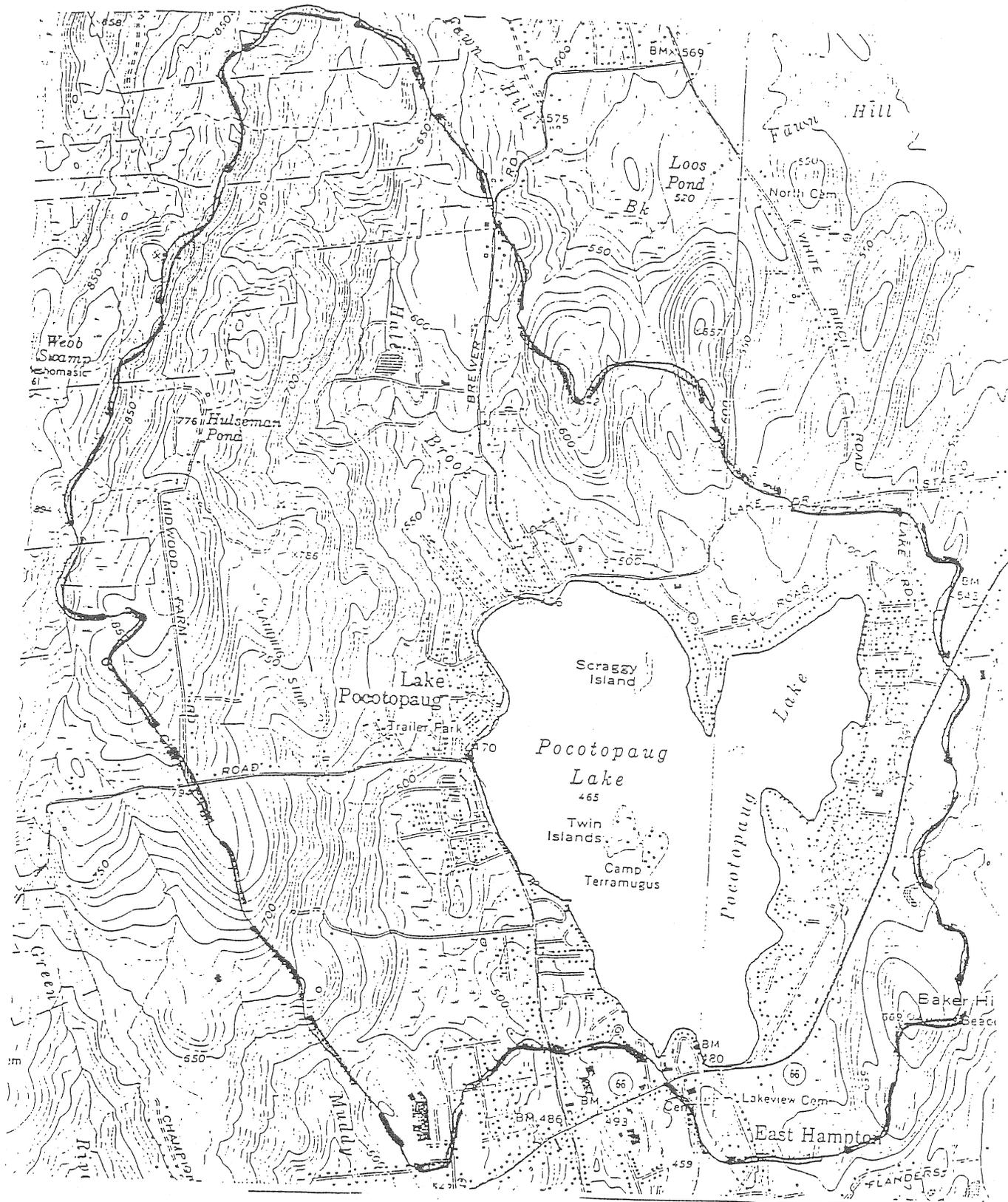
Section 06.03.08.2 add the following after the first sentence:

Channel stabilization shall be geotextile fabrics and erosion control blankets, flexible non-structural linings and structural interlocking concrete paver or other appropriate material as approved by the Town Engineer.

Section 06.04.04.3 add the following after the first sentence:

The design shall consider temporary sediment basins to accept anticipated maximum flow rates and sediment loads due to dewatering operations.

APPENDIX



LAKE POCOTOPAUG
WATERSHED AREA MAP

Town of East Hampton

20 EAST HIGH STREET

EAST HAMPTON, CONNECTICUT 06424

BLUE RIBBON PANEL
WPCA
Gildersleeve Drive

AUGUST 21, 1995
7:30PM

A G E N D A

1. P & Z Regulations To Be Discussed
2. Plan of Development
3. Adjourn

**BLUE RIBBON PANEL
MINUTES
August 21, 1995**

Present: Moderator, Robert Heidel, Members Jeff Foran, Charles Nichols, Fred Hansen, George White, Ralph Urban, Building Planning Zoning Administrator Jim Carey, George Pfaffebach, Tom Wells.

Moderator Robert Heidel called the meeting to order at 7:33 p.m. in the WPCA meeting room.

Motion was made by Jeff Foran and seconded by Fred Hansen to accept the minutes of the July 17, 1995 meeting. Motion carried.

The handout of the Town Council Special Meeting of August 1, 1995 indicated that both of the recommendations made by this panel were accepted.

1. Road Standards was accepted by a 4-2 vote.
2. Lake testing protocol voted through by a 5-1 vote.

Jim Carey reviewed the Planning & Zoning & Subdivision Regulations as presented in the Stormwater Renovation and Management Plan for the Lake Pocotopaug Watershed (pg 2-4). See attached excerpt of items reviewed.

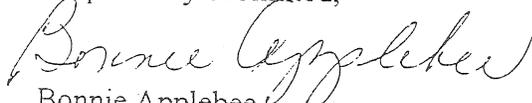
- Buffers - expansion of the definition of buffer - regulating buffers, that is areas outside of wetlands is a very controversial issue in Connecticut at this time. The State is trying to work out a buffer handbook to give advice to inland wetland agencies. The Town of East Hampton has declared that all activities within 100 ft of a wetlands would be regulated through special permit by the Planning and Zoning Commission. Planning and Zoning has authority to regulate all land use within the Town of East Hampton. We have a required referral of all activities, to the Inland Wetland agencies, Conservation Commission, and to the Planning & Zoning Commission. Commissions involved wanted regulations to stay in place. No applicants have complained about the process. If what WMC means is a 100 ft. exclusion buffer, Mr. Carey would recommend against this action.
- Required Referral - Not sure exactly what WMC is looking for - virtually all activities do go to Inland Wetlands Agency now. It would be difficult to implement the zoning regulation that required a referral to Inland Wetlands for regulation for all uses.

- Specific Regulation Revisions - Jim Carey referred to page 6 of WMC Report - these check lists are very helpful, but based on resources we have available right now, requiring this check lists be used and submitted is highly impractical and counterproductive. At present, our regulations are reflective of the State guidelines.
- Conditions of Approval - The suggestion is good and there should be a methodology. This is an administrative situation rather than a regulatory situation. There may come a time when the Town of East Hampton needs to codify administrative procedure to provide for continuity. Mr. Carey does not see this as a regulatory affair.
- Section B.2 General - Best suited in the Watershed Overlay Regulations - There could be an entire section devoted to the watershed area that gives direction to developers that says in these areas, specifically, we want to see these type of things. It would apply to all uses and activities within the watershed.
- Section B.3.j Outlet Structures - We do require energy dissipaters, we do encourage indigenous vegetation at the outfall, this could be strengthened within the Zoning Regulations and Road Standards. Second paragraph is simply a comment - when you are working within a watershed, this is a known area of sensitivity, you will take into consideration these things and just describe what these things are.
- Section B.3.m - Swales - Many places where swales are not appropriate and existing roads are such where swales won't work. Open swales are discussed in Road Standards. The concept could be strengthened in the WMZ regulation, the burden would be on the applicant to prove why it could be done or shouldn't be done - let the applicant do the analysis.
- Section B.5 - Detention Basins are used to detain water and the sedimentation basins hold standing water. Sedimentation basins are not practical on smaller uses but are more practical on larger cases where there is considerable drainage. Manpower to maintain could be costly and is rarely recommended for public land or property. GPS's could be encouraged in private developments and maintained by owner. This should be considered in relation to the Road Standards and part of appendix.
- Section E - Site Access and Parking - no argument at all, the only thing the Planning and Zoning Commission should be concerned with is the scope of where that would be required. It might be difficult to employ in a single family home. Maintenance bond on public improvements (things that are dedicated to the town) from one to three years at ten percent. We don't have the ability to take care of private lands in this manner. If environmental problems occur then enforcement action would be insight of zoning violations and Inland Wetlands.

- Section 29 - Special Permits - Everything within the watershed area would be by special permit, this is a far more comprehensive suggestion than Mr. Carey thinks is workable or reasonable.
- Zoning - Item #1 and 2 are fine with the exception of cluster developments. Unable to reach consensus amongst commissions as to what a good cluster might be, where appropriate, or how it might work. At present no regulations exist. Best way to regulate is to take into account a specific land area, topography, and environmental concerns. The public is not receptive to the idea of cluster housing.

Meeting adjourned 9:00 p.m. At the next meeting, September 11, 1995, Mr. Carey will continue his review of the Planning and Zoning Regulations.

Respectfully submitted,


Bonnie Applebee

2. Evaluation of Existing Information, Land Use and Stormwater Drainage Policies

I. Planning & Zoning & Subdivision Regulations

The Planning, Zoning & Subdivision Regulations, in general, provide adequate regulations pertinent to the protection of a watershed. Only minor additions would be in order as follows:

- The regulations should expand on the definition of a buffer to include a wetlands buffer zone as explained in the next section of this report.
- The regulations should include a required referral to the Wetlands Commission for any activity proposed in a wetlands buffer zone, or a Watershed Management Zone (not a separate zone, but an overlay zone, with specific regulatory requirements).
- There are specific regulation revisions or additions that could be made to reduce potential impacts to the lake. For example, Requirements for Certification/Approval of Erosion and Sedimentation Control Plan (Reference 1 - Zoning Regulations page 68, Section 27.3.1) - Plan Requirements, subsection E "The operation and maintenance program for proposed soil erosion and sedimentation control measures", should also include a description of a detailed checklist such as that provided in section 2.II of this report.
- Conditions of Approval (Ref. 1 page 69,70), should include specific requirements for maintenance and the required response time to make erosion and sediment controls effective. Additional "teeth" or clarification should be given to the enforcement section that follows; namely, in addition to any stop work order, a required time to respond, actions by the Town to repair/remedy the problem, and the required back charging or reduction in the performance bond amount to be returned to the individual, should be detailed.
- Section B.2 - General (Ref. 1 page 72), section b, should also include a requirement for design of sediment removal and stormwater renovation for present and for future 100 percent upstream development per Zoning, stormwater runoff flows.
- Section B.3.j outlet structures, (Ref. 1 page 74), should require a design check of, and/or a designed stable outlet and stable discharge channel with recommended improvements to downstream areas. The design should require field investigation, and design and checks of the entire downstream flow path.

Typically, closed storm drainage systems function as intended up to the point of discharge. Most fail at the discharge due to erosion of the outfall area and progressive channel scour due to the inability of the stream channel to resist the erosive force of increased flows and higher velocity. Both are undesirable for a number of reasons, but mainly due to sedimentation and increased turbid conditions downstream of the outfall.

- Section B.3.m (Ref. 1 page 75), should include a requirement for use of specially designed vegetated swales/channels within a Lake Watershed Management Zone (Lake WMZ).

The channels should provide catchments (small berms to collect sediment and slow water velocity to around 1 f.p.s.) and drops to aerate stormwater. Increased sediment, organic and nutrient removal with grassed waterways is well documented. An additional requirement for grassed waterways should be the estimation of effectiveness of the sediment traps and a schedule of maintenance. The Universal Soil Loss Equation (USLE) could be utilized for this estimate⁸.

- Section B.5 - Detention Basins, (Ref. 1 page 75), the use of sedimentation basins in place of detention basins should be required for developments when within the Lake WMZ. The sediment basins should be required along with, or in place of the use of Gross Particle Separators (GPS).

Sedimentation basins should be planted with various wetland plantings if the plantings would be sustainable. Sustainable conditions for wetland plantings would require the sediment basin to be a wet type basin, having a year round ground water after construction to within 18 inches of the surface to ensure survival of the plantings.

The use of stormwater recharge basins or subsurface recharge should be encouraged where feasible⁶. Feasibility would depend upon such factors as surficial geology and land area availability. Additional consideration should be given to small developments or individual developments without sufficient land area requiring them to contribute to funding of a regional Town constructed and maintained sediment basin or other local watershed management project.

- Section E - Site Access and Parking, (Ref. 1 page 79), the use of porous type pavement designs should be required in the Lake WMZ where subsurface conditions are favorable to stormwater recharge. Subsurface conditions should provide for a moderate permeability greater than 0.27 in/hr. and the depth to the water table or bedrock of 2 to 4 feet. The porous pavements should be utilized on low volume roads, parking areas and road shoulders where grades are very gentle to flat¹⁴. In addition, parking areas should be designed to discharge, as a minimum, the first flush of stormwater runoff to a combination of the following:

1. Vegetated swales.
2. Catch basins with sumps and outlet hoods.
3. Gross Particle Separators (GPS).
4. Sediment basins.
5. Recharge basins.

The design of these stormwater renovation measures should include an operation and maintenance schedule along with an estimated cost to maintain, in order to allow for an appropriate maintenance bond, per section 28 of the Zoning Regulations.

- Section 29 - Special Permits (Ref. 1 page 86), special permits should be required of all development within the newly established Lake WMZ.

- Zoning should be revised within a new established Lake WMZ to, in general,:
 1. Encourage and require the retention of natural impervious surfaces (Contiguous Open Spaces, Open space wetland and watercourses corridors).
 2. Minimize removal of natural vegetation (Cluster Developments).
 3. Promote infiltration of stormwater runoff.
 4. Minimize impervious surfaces, required maximum impervious areas.
 5. Reduced density zoning; Lake WMZ maximum density independent of sewers and other utilities, dependent on proximity to wetlands and watercourses.
 6. Prohibit development on steep slopes (in excess of 15 percent, for example).
 7. Require frequent inspections of new developments and compliance with regulations.
 8. Encourage land acquisition by the Town of environmentally sensitive areas.
 9. Require land use deed restrictions within the WMZ, such as restriction of use of fertilizers and pesticides, required maintenance of septic systems, etc..
- Section II.3 - Application Procedures (Ref. 13 page 2), require the design of all septic systems be by a Connecticut Registered Professional Engineer. The design should incorporate evaluation of phosphorus and nitrogen removal or renovation to drinking water standards prior to leaving the property limits or reaching a wetland or watercourse within the Lake WMZ. In lieu of a septic design meeting these requirements, the design of a sewage system connection and/or extension of the Town's sewer system should be required. This should also be required in Section IV.7.
- Section IV.6 - General Requirements for the Subdivision of Land (Ref. 13 page 8), no exception to the minimum usable land required should be permitted if the lot is to be serviced by a sewer system. This would be consistent with the preceding recommendations.
- Section V.6.NN (Ref. 13 page 13), the Commission should require impact statements for developments within the Lake WMZ. Additional information that should be included in the impact statement: sediment, phosphorous, nitrogen loadings for present, proposed, and proposed with treatment (renovation) to be utilized.
- Section VI.7 - Open Space Objectives and Section VI.8 - "Waivers of Open Space" (Ref. 13 page 15), the objectives of the open space regulation should be revised to be consistent with the previous recommended revisions to the Zoning Regulations.

Town of East Hampton

20 EAST HIGH STREET

EAST HAMPTON, CONNECTICUT 06424

BLUE RIBBON PANEL
WPCA
Gildersleeve Drive

SEPTEMBER 18, 1995
7:30 PM

A G E N D A

1. P & Z Regulations To Be Discussed.
2. Plan of Development.
3. Adjourn.

**BLUE RIBBON PANEL
MINUTES
September 18, 1995**

Present: Moderator Robert Heidel, Members Jeff Foran, Charles Nichols, Fred Hansen, George White, Ralph Urban, and Building Planning Zoning Administrator Jim Carey. Others present: Tom Wells and Peter Aarrstead.

Moderator Robert Heidel called the meeting to order at 7:31 PM in the WPCA meeting room.

Motion was made by Fred Hansen and seconded by Jeff Foran to accept the minutes of the August 21, 1995 meeting. Motion carried.

AGENDA ITEM #1 - Jim Carey continued his review of the Planning & Zoning & Subdivision Regulations as presented in the Stormwater Renovation & Management Plan for the Lake Pocopaug Watershed. See attached excerpts of items reviewed (pg. 4 & 5).

Zoning - Item # 2 (Cluster Developments)

A brief discussion was held regarding the negative view the public holds of cluster housing. The use of public sewers or community septic systems, which historically the town has been against. Many members of the P & Z would like to explore Cluster Housing more fully, but the major road block concerning the town as a whole, is how to handle the complex issues of sewers.

Zoning - Items # 3 & 4 (Infiltration and Impervious Surfaces)

Promote infiltration of stormwater runoff, very recently some Road Standards that have been put into place do do that. In the lake watershed itself, language could be put into place to indicate that we promote stormwater infiltration where applicable, (site plan approvals and special permits etc.) like we did in the Road Standards.

Zoning - Item # 5 (Density zoning)

A long discussion was held concerning incentives, density zoning, sewers, and septic systems. R1, R2, & R3 Zoning do provide a density incentive for installation of sewers. If we follow Item #5 recommendation, we won't get sewers where we need them.

Zoning - Item # 6 (Steep Slopes)

A short discussion was held regarding steep slopes. Mr. Carey would not recommend Item # 6. We don't encourage going up on steep slopes, but a blanket prohibition on almost anything on private property can be troublesome.

Zoning - Item #7 (Inspections)

We do require inspections, however staff availability is poor right now - unenforceable at present staff levels. This seems to be more of an administrative issue as opposed to a regulatory problem.

Zoning - Item # 8 (Land Acquisition)

A very short discussion was held - consensus is that this is an ongoing process brought to the attention of the Town Council.

Zoning - Item # 9 (Restrictions)

Mr. Carey strongly advises town against trying to set restrictions (as written in Item #9). There are checks and balances built into the State Health Codes, that Thad King could explain more clearly. Mr. Carey will refer this issue over to Thad King.

Section II.3 - Application Procedures (Ref. 13 page 2), require the design of all septic systems be by a Connecticut Registered Professional Engineer.

Connecticut Health Code describes carefully when a professional system is required and the Town is responsible for the enforcing of the State Health Code. Mr. Carey will refer this over to Thad and will report back at next meeting.

Section IV.6 - General requirements for the Subdivision of Land (Ref.13 page 8)

Basically a recap of Item #5.

Section V.6.NN (Ref. 13 page 13) Impact Statements

A lengthy discussion was held concerning this issue. Impact statement fitting into some federal perimeter, Level One, Level Two (that would be on contaminated property), would be an overstatement of what's required. We have provisions already in our regulations that could be strengthened. Mr. Carey will draft something for consideration of this group and if approved could be passed on to the P. & Z.

Section VI.7 Open Space Objectives and Section VI.8 "Waivers of Open Space"

Mr. Carey agrees completely that Open Space Objectives need to be overhauled and we are in the process of doing that now.

Section IX - Soil Erosion/Sediment Control (Ref 13 page 20)

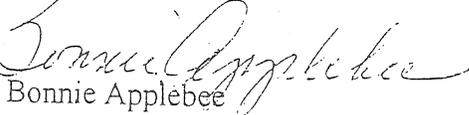
Regulations work hand-in-hand, not as completely crafted as zoning, but consistent with zoning regulations (our regulations follow State Statutes). Mr. Carey agrees that these regulations should be rewritten as soon as the subdivision regulations are revised.

AGENDA ITEM # 2 - PLAN OF DEVELOPMENT

A long discussion ensued. Mr. Carey reminded the Panel that the "Plan of Development" acts as a guiding document to say, "go look at these issues," and hopefully when they point you at the issue, either an administrative policy or regulation will follow. Many of these things we have already talked about tonight. Mr. Carey will submit a skeletal proposal at the next meeting.

Meeting adjourned 9:00 P.M. The next meeting, October 16, 1995, we will decide to accept or reject modifications.

Respectfully submitted,


Bonnie Applebee

- Zoning should be revised within a new established Lake WMZ to, in general,;
 1. Encourage and require the retention of natural impervious surfaces (Contiguous Open Spaces, Open space wetland and watercourses corridors).
 2. Minimize removal of natural vegetation (Cluster Developments).
 3. Promote infiltration of stormwater runoff.
 4. Minimize impervious surfaces, required maximum impervious areas. 16% 25% 30%
 5. Reduced density zoning; Lake WMZ maximum density independent of sewers and other utilities, dependent on proximity to wetlands and watercourses.
 6. Prohibit development on steep slopes (in excess of 15 percent, for example).
 7. Require frequent inspections of new developments and compliance with regulations.
 8. Encourage land acquisition by the Town of environmentally sensitive areas.
 9. Require land use deed restrictions within the WMZ, such as restriction of use of fertilizers and pesticides, required maintenance of septic systems, etc..
- Section II.3 - Application Procedures (Ref. 13 page 2), require the design of all septic systems be by a Connecticut Registered Professional Engineer. The design should incorporate evaluation of phosphorus and nitrogen removal or renovation to drinking water standards prior to leaving the property limits or reaching a wetland or watercourse within the Lake WMZ. In lieu of a septic design meeting these requirements, the design of a sewage system connection and/or extension of the Town's sewer system should be required. This should also be required in Section IV.7.
- Section IV.6 - General Requirements for the Subdivision of Land (Ref. 13 page 8), no exception to the minimum usable land required should be permitted if the lot is to be serviced by a sewer system. This would be consistent with the preceding recommendations.
- Section V.6.NN (Ref. 13 page 13), the Commission should require impact statements for developments within the Lake WMZ. Additional information that should be included in the impact statement: sediment, phosphorous, nitrogen loadings for present, proposed, and proposed with treatment (renovation) to be utilized.
- Section VI.7 - Open Space Objectives and Section VI.8 - "Waivers of Open Space" (Ref. 13 page 15), the objectives of the open space regulation should be revised to be consistent with the previous recommended revisions to the Zoning Regulations.

- 7/8/05
P. Carey
- In General, the Subdivision regulations should be consistent with the Zoning and Wetlands regulations, if amended.
 - Section IX - Soil Erosion/Sediment Control (Ref 13 page 20), should permit no exceptions to comply with this regulation based on cumulative disturbed area. A less intensive requirement for small projects could be required, in which the owner or contractor certifies knowledge of proper erosion and sedimentation control and is required to install measures prior to construction based on a standard check list (see typical check list in section II of this report which could be developed into a standard list for small projects under the 1/2 acre limit), followed by notification to the Town and the Town issuing a certification to proceed, and follow-up inspections by town.

Regardless of the size of the project, the limits of proposed grading and clearing should be established prior to approval of the proposed activity and should be delineated in the field (orange surveyors flagging tape could be used for smaller projects while orange construction safety fence should be used for larger projects, especially in proximity to wetlands or watercourses) and approved by the Town prior to the installation of sediment control measures. The owner/contractor should also be required to post a bond.

II. Inland Wetlands & Watercourses Regulations

In general, the current Inland Wetlands & Watercourses Regulations are typical for the State. While these generally provide adequate protection to regulated areas, they are not specifically designed for a particular area or to protect a watershed or a lake environment from area runoff.

The regulations could be enhanced to provide additional protection and benefits to the Lake Pocotopaug watershed, if several items or regulations were amended to the current regulations in conjunction with Planning & Zoning changes. These changes are as follows:

- A special review, permit and regulation Zone within the Town - A Lake Pocotopaug Watershed Management Zone (Lake WMZ) - Inland Wetlands and Watercourses.
- Required Referral to the Planning & Zoning Commission, as well as compliance with all applicable Planning & Zoning Regulations.
- Creation of a buffer zone requirement in the lake watershed management zone. Certain land use activities in an area upslope of a wetland or watercourse could be permitted only by special permit. The primary benefit of the buffer zone is that, should erosion and sediment control measures fail, there is a buffer zone which can mitigate the effects of the failure. On the other hand the buffer zone concept should be researched for legality and enforceability.
- Require compensatory wetlands creation for altered or destroyed wetlands or watercourses.

Town of East Hampton

20 EAST HIGH STREET

EAST HAMPTON, CONNECTICUT 06424

BLUE RIBBON PANEL

WPCA

Gildersleeve Drive

OCTOBER 16, 1995

7:30 PM

A G E N D A

1. Action to be taken on the P & Z Regulations & Sub-division Regulations as presented in the Stormwater Renovation & Management Plan for the Lake Pocotopaug Watershed.
2. Plan of Development.
3. Adjourn.

**BLUE RIBBON PANEL
MINUTES
October 16, 1995**

Present: Moderator Robert Heidel, members Charles Nichols, Jeff Foran, Fred Hansen, George White, Ralph Urban, and Building Planning Zoning Administrator Jim Carey.

Moderator Robert Heidel called the meeting to order at 7:30 PM in the WPCA meeting room.

Motion made by Jeff Foran and seconded by Fred Hansen to accept the minutes of the September 18, 1995 meeting. Motion carried.

Mr. Carey submitted to the Panel a packet containing his recommendations, a memo covering Pages 2-6,9,10 of the Stormwater Renovation & Management Plan for the Lake Pocotopaug Watershed, and Thad King's memo addressing Item #9 and Section II.3. (see attached packet)

Mr. Carey began his presentation by reading his memo to the Blue Ribbon Panel and addressing (in order given) each item in the WMC Report (pg. 2-6,9,10). Mr. Carey read Thad King's memo covering Item #9 and II.3. Mr. Carey included and addressed the IWWCA Regulations, pg. 5 and Plan of Development.

In conclusion Mr. Carey read in full his recommendations commencing at Section 7.12 of the Lake Pocotopaug Protection Area (see attached).

Discussion followed with Mr. Urban suggesting that preservation of natural scenic ridgelines be included in the Special Provisions Section 7.12.3. The Panel agreed unanimously to include Mr. Urban's suggestion as Item #12 of Section 7.12.3.

Motion made by Jeff Foran and seconded by Fred Hansen to forward these recommendations to the Town Council, ask that the council look favorably on them, and then have the Council send them on to the P & Z. Motion carried.

Next meeting November 20, 1995 - Prioritize the 78 recommendations of the Lake Studies, Reports, and Recommendations and discuss objectives of the Lake Advisory.

Meeting adjourned 8:53 PM.

Respectfully submitted,


Bonnie Applebee

Town of East Hampton

20 EAST HIGH STREET

EAST HAMPTON, CONNECTICUT 06424

To: Blue Ribbon Task Force

RE: WMC Report/Response & Recommendations for Zoning and Subdivision Regulations

Date: October 16, 1995

From: James P. Carey, Administrator Planning/Zoning/Building

This memo is a response to the findings of WMC regarding present zoning and subdivision regulations for our town. It is important to note that the report declares that these regulations are adequate for watershed protection as they presently exist. I agree with that assessment.

Many of WMC's recommendations involve administrative matters such as checklists and bond reduction techniques. Regulation changes are not required in these cases. Administrative matters must be tailored to fit department's staff levels, time constraints, record keeping capabilities, legal budgets and like concerns. Administration and enforcement are tasks that involve dynamic and flexible factors and should be left those responsible and accountable for the success or failure of the specific methods employed.

Our regulations are a goal based performance code. This is in contrast to a specification type code in which the regulated party is told what to do, how to do it etc. We require that an applicant show the Commission how they plan to meet the goals of the regulations. This allows for the employment of new technologies and methods and gives a greater scope and range of issues than a "fill in the blanks" formula type approach.

Toward this end, I recommend that a section be put in the Zoning Regulations dealing with the Lake Pocotopaug Watershed. It will outline the goals of reduced erosion, enhanced stormwater handling capability, stormwater renovation, infiltration of runoff and like concerns in the watershed. It will act to highlight the Town's concern for the lake and will put a clear sense of focus on the importance of sensitive design in this area. It will act as an overlay regulation on all applications requiring subdivision approval, site plan approval and/or special permit approval in the watershed. I propose that it be placed in the regulations as Section 7.12. The section could be called Lake Pocotopaug Protection Area. I have enclosed the proposed regulation with this memo.

Specific responses to WMC's comments follow:

WMC report, page 2.

1. Buffers are presently regulated through Section 7.11 which has been found to work to complete satisfaction of the P&Z and the IWWCA. No changes are recommended.
2. This is already done and includes referral to Conservation.
3. This is an administrative matter as discussed above.
4. Same as 3.
5. This is included in proposed Section 7.12 (enclosed).
6. This is presently done with existing regulations.
7. This is addressed in proposed Section 7.12. We have and will continue to use (ULSE) when appropriate and or beneficial to the Town.
USLE
8. This is addressed in proposed Section 7.12.
9. Same as above. Maintenance bond comment incorrectly assumes the Town's ability to utilize such a technique.
10. All new development that requires a site plan or subdivision approval will require a public hearing under proposed Section 7.12.

WMC Report, page 4.

11. Items 1,2,3,4 are included in proposed Section 7.12. Item 5 cannot be recommended at this time because it is felt that without any incentive to install sewers, the Town would have to pay for them or would allow septic systems where sewers would serve the Town better. This issue could be revisited in the future if the WPCA provides input to the P&Z. Item 6, steep slopes are referred to in proposed Section 7.12 as areas of special concern but outright prohibition is very dangerous from a constitutional basis and is inadvisable. Item 7 is an administrative affair as discussed above. Item 8 is not regulatory. Item 9 cannot be recommended. Deed restrictions should not be used by the Town except in the rarest of cases. The regulations alone are the control mechanism authorized by statute to control the use of private property.
12. This issue is addressed by Thad King, Health Director, in an attached memo.
13. See Item 11.
14. This is addressed in proposed Section 7.12.
- 15/16. The Town's Open Space Policy is presently under review. When a consensus is reached on this issue, the entire Subdivision Regulation will be rewritten and adopted that is consistent with Zoning Regulations.
17. This recommendation for "no exceptions" is not consistent with State Statutes and should be ignored. E&S bonding is done now.

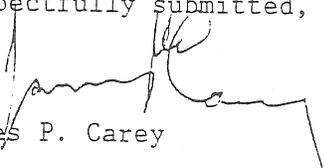
IWWCA Regulations, page 5.

1. This is not provided for by Statutes. Cannot recommend.
2. Not relevant to IWWCA or functions.
3. See Item 1, P&Z comments.
4. We can do this now, when appropriate with present regulations.
5. Administrative as discussed above.

Plan of Development, page 9.

WMC makes no recommendation. The Plan will be subject to revision May 1, 1999.

Respectfully submitted,


James P. Carey

To: Robert Heidel, Chairman - Blue Ribbon Panel

From: Thad King, Dir. of Health TK

Re: Item #9, Section II3, Discussion Minutes 9/18/95

Date: 9/27/95

Item #9 -

A Permit to Discharge is issued by the Health Department for each new or repaired septic system, per C.G.S. 22a-430(g), and P.H.C. 19-13-103(c). The permit states the required pumping frequency. Pumping at the proper frequency is the only maintenance required to assure proper function. All septic systems installed prior to these statutes are grandfathered and considered permitted. The proper pumping frequency is dependent upon use, but per 22a must be done at least every five years.

The Health Department is working with W.P.C.A. to verify pumping frequency and achieve better compliance through notification and education. Pumping at an interval longer than 5 years does not necessarily lead to failure, nor does a failure necessarily lead to detrimental water quality. Residents do have an incentive to pump their systems because of a desire to maintain their property, and avoid costly repairs.

In regard to fertilizers and pesticides, there is no basis at this time to conclude any detrimental water quality results from these applications. However, residents should be educated on their proper use and possible effects to water quality, including water supply wells.

Section II3 -

The P.H.C. 19-13-103d(e) specifies the conditions that require a P.E. to design the septic system. These conditions exist virtually throughout the watershed. The few locations that do not specifically require engineering are still subject to the conditions of the P.H.C. and technical standards which incorporates an installation accuracy to +/- one inch.

The purpose of siting and installing septic systems pursuant to the P.H.C. is to assure the effluent will not breakout to the ground surface or backup into the house, as well as, to rennovate the effluent to drinking water standards before leaving the lot. There are numerous environmental and use related factors that effect performance but what has been consistently demonstrated is that this level of performance is achieved and exceeded by onsite systems within a few feet of the system.

Nitrate is the only consituent not readily absorbed by the

immediate soil. Actively absorbed by flora as an essential nutrient, it has been found that even small vegetative buffers, as little as six feet, provide effective rennovation. However, on small lots where inadequate dilution with existing ground and infiltrative surface water occurs, nitrates can accumulate. If these are many, located close to a surface water body that water body can show increases in nitrates. There is no basis to conclude any detrimental water quality effects from the nitrates of onsite systems in the watershed.

Phosphorous is absorbed by the soil within several feet. Loamy, low pH, high iron soils such as those found in the watershed are well suited for removing P. It is sometimes argued that the soil will become saturated with P, such that a breakout occurs. However, the soil has a capacity for regeneration which is why theoretical studies have consistently overestimated travel distance and underestimated travel time when compared to field studies. Field studies have indicated P travels approximately 4 inches/year in sandy loams like those here. Systems located in the watershed are located approximately 1000 feet away due to the sanitary sewer system, therefore P, based on this estimated rate, is about 3000 years away.

Section 7.12 - Lake Pocotopaug Protection Area

7.12.1 - Purpose

This regulation is to provide special protection to all land included in the watershed of Lake Pocotopaug. It shall reduce the negative environmental effects of development in this area.

7.12.2 - Scope

All uses requiring Subdivision, Site Plan or Special Permit approval shall be subject to this regulation. A public hearing will be required for all applications under this section.

7.12.3 - Special Provisions

A. All proposals shall show that specific and adequate measures have been taken to:

1. Reduce erosion and sedimentation.
2. Promote the removal of sediments and nutrients in stormwater.
3. Limit the area of disturbance.
4. Avoid slopes in excess of 20%.
5. Protect native vegetation.
6. Ensure that no post development stormwater exceeds predevelopment levels.
7. Promote infiltration of stormwater.
8. Protect native wildlife.
9. Provide adequate open space.
10. Reduce the effort required to maintain systems proposed, (road drainage, septic systems, landscaping, etc.) to increase the likelihood of proper maintenance.
11. Ensure that the proposed development is compatible with the surrounding area.
12. *Preservation of natural scenic ridgelines.*

B. The following are some techniques recommended in the design of proposals in this zone.

1. Use of slotted or perforated pipe.
2. Use of vegetated swales in lieu of piped drainage.
3. Use of stormwater recharge basins.
4. Use of sediment basins.
5. Use of Unified Soil Loss equation.
6. Environmental Impact Statements.
7. Use of porous pavements.
8. Use of check dams, energy dissipaters.
9. Use of bioengineered mulches mats and rolls.
10. Avoidance of steep slopes.
11. Referral of proposal to SCS, DEP, etc.
12. Investigation of native wildlife.
13. Recreational impacts statement.
14. Rational for open space proposed.
15. Use of phasing to minimize disturbed areas.
16. Use of contract limit lines (plan & field).

7.12.4 - Additional requirements.

All proposals shall be subject to all provisions of Section 28 (site plan), and Section 29 (Special Permit) or Subdivision, as required, and all other relevant regulations, codes and laws. Approval under this section is required in addition to any permits issued by the East Hampton Inland Wetlands and Watercourses Agency.

7.11.3.B

The Planning and Zoning Commission may request any such information it deems necessary to make their determination regarding any application, in addition to and exclusive of materials submitted to the Inland Wetlands and Water Courses Agency and the Conservation Commission, or any other review entity.

2. Evaluation of Existing Information, Land Use and Stormwater Drainage Policies

I. Planning & Zoning & Subdivision Regulations

The Planning, Zoning & Subdivision Regulations, in general, provide adequate regulations pertinent to the protection of a watershed. Only minor additions would be in order as follows:

1. • The regulations should expand on the definition of a buffer to include a wetlands buffer zone as explained in the next section of this report.
2. • The regulations should include a required referral to the Wetlands Commission for any activity proposed in a wetlands buffer zone, or a Watershed Management Zone (not a separate zone, but an overlay zone, with specific regulatory requirements).
3. • There are specific regulation revisions or additions that could be made to reduce potential impacts to the lake. For example, Requirements for Certification/Approval of Erosion and Sedimentation Control Plan (Reference 1 - Zoning Regulations page 68, Section 27.3.1) - Plan Requirements, subsection E "The operation and maintenance program for proposed soil erosion and sedimentation control measures", should also include a description of a detailed checklist such as that provided in section 2.II of this report.
4. • Conditions of Approval (Ref. 1 page 69,70), should include specific requirements for maintenance and the required response time to make erosion and sediment controls effective. Additional "teeth" or clarification should be given to the enforcement section that follows; namely, in addition to any stop work order, a required time to respond, actions by the Town to repair/remedy the problem, and the required back charging or reduction in the performance bond amount to be returned to the individual, should be detailed.
5. • Section B.2 - General (Ref. 1 page 72), section b, should also include a requirement for design of sediment removal and stormwater renovation for present and for future 100 percent upstream development per Zoning, stormwater runoff flows.
6. • Section B.3.j outlet structures, (Ref. 1 page 74), should require a design check of, and/or a designed stable outlet and stable discharge channel with recommended improvements to downstream areas. The design should require field investigation, and design and checks of the entire downstream flow path. - *Presently done w/ existing regulation.*

Typically, closed storm drainage systems function as intended up to the point of discharge. Most fail at the discharge due to erosion of the outfall area and progressive channel scour due to the inability of the stream channel to resist the erosive force of increased flows and higher velocity. Both are undesirable for a number of reasons, but mainly due to sedimentation and increased turbid conditions downstream of the outfall.

7. • Section B.3.m (Ref. 1 page 75), should include a requirement for use of specially designed vegetated swales/channels within a Lake Watershed Management Zone (Lake WMZ).

The channels should provide catchments (small berms to collect sediment and slow water velocity to around 1 f.p.s.) and drops to aerate stormwater. Increased sediment, organic and nutrient removal with grassed waterways is well documented. An additional requirement for grassed waterways should be the estimation of effectiveness of the sediment traps and a schedule of maintenance. The Universal Soil Loss Equation (USLE) could be utilized for this estimate⁸.

- 8. • Section B.5 - Detention Basins, (Ref. 1 page 75), the use of sedimentation basins in place of detention basins should be required for developments when within the Lake WMZ. The sediment basins should be required along with, or in place of the use of Gross Particle Separators (GPS).

Sedimentation basins should be planted with various wetland plantings if the plantings would be sustainable. Sustainable conditions for wetland plantings would require the sediment basin to be a wet type basin, having a year round ground water after construction to within 18 inches of the surface to ensure survival of the plantings.

The use of stormwater recharge basins or subsurface recharge should be encouraged where feasible⁶. Feasibility would depend upon such factors as surficial geology and land area availability. Additional consideration should be given to small developments or individual developments without sufficient land area requiring them to contribute to funding of a regional Town constructed and maintained sediment basin or other local watershed management project.

- 9: • Section E - Site Access and Parking, (Ref. 1 page 79), the use of porous type pavement designs should be required in the Lake WMZ where subsurface conditions are favorable to stormwater recharge. Subsurface conditions should provide for a moderate permeability greater than 0.27 in/hr. and the depth to the water table or bedrock of 2 to 4 feet. The porous pavements should be utilized on low volume roads, parking areas and road shoulders where grades are very gentle to flat¹⁴. In addition, parking areas should be designed to discharge, as a minimum, the first flush of stormwater runoff to a combination of the following:

1. Vegetated swales.
2. Catch basins with sumps and outlet hoods.
3. Gross Particle Separators (GPS).
4. Sediment basins.
5. Recharge basins.

The design of these stormwater renovation measures should include an operation and maintenance schedule along with an estimated cost to maintain, in order to allow for an appropriate maintenance bond, per section 28 of the Zoning Regulations.

- 10. • Section 29 - Special Permits (Ref. 1 page 86), special permits should be required of all development within the newly established Lake WMZ.

11. • Zoning should be revised within a new established Lake WMZ to, in general,
 1. Encourage and require the retention of natural impervious surfaces (Contiguous Open Spaces, Open space wetland and watercourses corridors).
 2. Minimize removal of natural vegetation (Cluster Developments).
 3. Promote infiltration of stormwater runoff.
 4. Minimize impervious surfaces, required maximum impervious areas.
 5. Reduced density zoning; Lake WMZ maximum density independent of sewers and other utilities, dependent on proximity to wetlands and watercourses. *TOWN PROBLEM*
 6. Prohibit development on steep slopes (in excess of 15 percent, for example). —
 7. Require frequent inspections of new developments and compliance with regulations.
 8. Encourage land acquisition by the Town of environmentally sensitive areas.
 9. Require land use deed restrictions within the WMZ, such as restriction of use of fertilizers and pesticides, required maintenance of septic systems, etc.. —

Section II.3 - Application Procedures (Ref. 13 page 2), require the design of all septic systems be by a Connecticut Registered Professional Engineer. The design should incorporate evaluation of phosphorus and nitrogen removal or renovation to drinking water standards prior to leaving the property limits or reaching a wetland or watercourse within the Lake WMZ; In lieu of a septic design meeting these requirements, the design of a sewage system connection and/or extension of the Town's sewer system should be required. This should also be required in Section IV.7.

13. • Section IV.6 - General Requirements for the Subdivision of Land (Ref. 13 page 8), no exception to the minimum usable land required should be permitted if the lot is to be serviced by a sewer system. This would be consistent with the preceding recommendations.
14. • Section V.6.NN (Ref. 13 page 13), the Commission should require impact statements for developments within the Lake WMZ. Additional information that should be included in the impact statement: sediment, phosphorous, nitrogen loadings for present, proposed, and proposed with treatment (renovation) to be utilized.
15. • Section VI.7 - Open Space Objectives and Section VI.8 - "Waivers of Open Space" (Ref. 13 page 15), the objectives of the open space regulation should be revised to be consistent with the previous recommended revisions to the Zoning Regulations.

16. • In General, the Subdivision regulations should be consistent with the Zoning and Wetlands regulations, if amended.
17. • Section IX - Soil Erosion/Sediment Control (Ref 13 page 20), should permit no exceptions to comply with this regulation based on cumulative disturbed area. A less intensive requirement for small projects could be required, in which the owner or contractor certifies knowledge of proper erosion and sedimentation control and is required to install measures prior to construction based on a standard check list (see typical check list in section II of this report which could be developed into a standard list for small projects under the 1/2 acre limit), followed by notification to the Town and the Town issuing a certification to proceed, and follow-up inspections by town.

Regardless of the size of the project, the limits of proposed grading and clearing should be established prior to approval of the proposed activity and should be delineated in the field (orange surveyors flagging tape could be used for smaller projects while orange construction safety fence should be used for larger projects, especially in proximity to wetlands or watercourses) and approved by the Town prior to the installation of sediment control measures. The owner/contractor should also be required to post a bond.

II. Inland Wetlands & Watercourses Regulations

In general, the current Inland Wetlands & Watercourses Regulations are typical for the State. While these generally provide adequate protection to regulated areas, they are not specifically designed for a particular area or to protect a watershed or a lake environment from area runoff.

The regulations could be enhanced to provide additional protection and benefits to the Lake Pocotopaug watershed, if several items or regulations were amended to the current regulations in conjunction with Planning & Zoning changes. These changes are as follows:

1. • A special review, permit and regulation Zone within the Town - A Lake Pocotopaug Watershed Management Zone (Lake WMZ) - Inland Wetlands and Watercourses.
2. • Required Referral to the Planning & Zoning Commission, as well as compliance with all applicable Planning & Zoning Regulations.
3. • Creation of a buffer zone requirement in the lake watershed management zone. Certain land use activities in an area upslope of a wetland or watercourse could be permitted only by special permit. The primary benefit of the buffer zone is that, should erosion and sediment control measures fail, there is a buffer zone which can mitigate the effects of the failure. On the other hand the buffer zone concept should be researched for legality and enforceability.
4. • Require compensatory wetlands creation for altered or destroyed wetlands or watercourses.

- 5. • Development of an Erosion and Sedimentation Control Plan. This could be required for all new construction or land disturbances within the Lake WMZ. Practicality would limit oversight to only projects impacting more than a certain size area (1/2 acre is suggested) upslope of a wetland or watercourse, special concern projects and a project that lies within the new buffer zone. The E & S Plan should include engineering and architectural drawings and site specific sequences of construction. Additionally check lists such as the typical one that follows could be developed to aid in proper installation and functioning of erosion and sediment controls through out a proposed project duration. Construction should be phased so as to minimize the extent and time soils are exposed to erosion. The use of such a check list would require inspection and enforcement by the Town in order to be effective.

Typical Erosion and Sediment Control Checklist

EROSION AND SEDIMENT CONTROL CHECK LIST				
WORK DESCRIPTION, LOCATION AND EROSION & SEDIMENT CONTROL MEASURES	DATE INSTALLED	INITIALS	DATE REMOVED	INITIALS
a) LIMITED CLEARING.				
b) INSTALLATION OF FLORESCENT CONSTRUCTION FENCING.				
c) INSTALLATION OF EROSION AND SEDIMENT CONTROLS.				
d) CLEARING AND GRUBBING.				
e) INSTALLATION OF TEMPORARY DIVERSION PIPE.				
f) PLACE TEMPORARY OUTLET SPLASH PAD FOR TEMPORARY PIPE.				
g) DIVERT BROOK; PLACE SAND BAGS ACROSS BROOK TO CREATE DIVERSION DIKE.				
h) REMOVE EXISTING HEAD AND END WALLS, SAVE FOR REUSE.				
i) EXCAVATE, REMOVE EXISTING CULVERT.				
j) CONSTRUCT INLET AND OULET EROSION PROTECTION, PLACE NEW CULVERT.				
k) CONSTRUCT HEAD AND ENDWALLS, BACKFILL.				
l) REMOVE SAND BAG DIKE, REMOVE TEMPORARY DIVERSION SPLASH PAD AND PIPE.				
m) FINAL GRADE, LOAM, FERTILIZE, SEED, PLACE EROSION CONTROL BLANKETS.				
n) REMOVE CONSTRUCTION FENCING AND RESTORE ALL DISTURBED AREAS AS IN STEP (m).				
o) CONTINUOUS INSPECTION OF EROSION PRONE AREAS AFTER RAINFALL EVENTS IN EXCESS OF 1"HR INTENSITY OR A RAINFALL EVENT WITH A TOTAL PRECIPITATION OF 1/2" OR MORE (NOTE THIS WILL REQUIRE A RAIN GAUGE KEPT ON SITE AND RECORD OF RAINFALL KEPT FOR EACH RAINFALL EVENT. THE GAUGE SHALL BE SO LOCATED SUCH THAT THE GAUGE WILL REPRESENT THE DEPTH OF RAINFALL THAT MAY OCCUR OVER THE PROJECT SITE.).				
p) INSPECTION OF EROSION PRONE AREAS MONTHLY FOR A PERIOD OF ONE YEAR AFTER THE COMPLETION OF CONSTRUCTION.				
q) APPROPRIATE MEASURES TO CORRECT DEFICIENT ITEMS SHALL BE MADE UNTIL THOSE ITEMS ARE DEEMED STABLE AND NON-ERODING.				
NOTE:				
FOLLOW UP INSPECTIONS AND MAINTENANCE OF EROSION & SEDIMENT CONTROLS, REPAIR OF ERODED AREAS, PLACEMENT OF ADDITIONAL MEASURES, REMOVAL OF SEDIMENT FROM E&S MEASURES, ETC.				
INSPECTION DESCRIPTION				
ACTION REQUIRED				
ACTION TAKEN				
FOLLOW UP OF ACTION AND INSPECTION.				
INSPECTION DESCRIPTION				
ACTION REQUIRED				
ACTION TAKEN				
FOLLOW UP OF ACTION AND INSPECTION.				
INSPECTION DESCRIPTION				
ACTION REQUIRED				
ACTION TAKEN				
FOLLOW UP OF ACTION AND INSPECTION.				
NOTE:				
1) THIS FORM SHALL BE UPDATED WEEKLY AND REPORTS AND COPIES SENT TO THE APPROPRIATE TOWN AGENCY FOR APPROVAL WEEKLY UNTIL THE COMPLETION OF THE PROJECTS PHASES.				
2) CONSTRUCTION MAY NOT PROCEED UNTIL THE CHECK LIST IS APPROVED BY THE TOWN AND A PRECONSTRUCTION MEETING IS HELD WITH THE TOWN AND THE CONTRACTOR.				
3) BOTH THE TOWN'S WETLANDS AGENT AND THE CONTRACTOR MUST DATE AND INITIAL CHECK LIST.				
4) IF ITEMS ARE NOT INSTALLED PROPERLY OR NEED REPAIR NOTE IN LOWER HALF OF CHECK LIST, DATE AND INITIAL BY TOWN AND CONTRACTOR.				

IV. W.P.C.A. Ordinance and Sewer Maps

Generally, the WPCA ordinances are in conformance with good watershed management practices, and no comments are necessary.

V. Plan of Development

The "Plan of Development" Town of East Hampton, Connecticut May 1989 (reference 19) is, in general, consistent with recommendations made in this report. Several topics of the Plan of Development directly relate to Lake Pocotopaug and its water quality.

The Water Quality section of the Plan (p.18) classified Lake Pocotopaug as a mesotrophic lake, but reports classify the lake as eutrophic since 1992. The Plan also recommends the continued monitoring and management of the lake to maintain its current condition. This statement should also be revised to: In order to return the lake's water quality to previous conditions, lake management must be implemented. The Plan, (p.19) notes adverse impacts to the lake's water quality from lake over-use, discharges of oil and gas from motor boats, erosion and sedimentation and areas under development.

The Wetlands and Flood Plains section of the Plan (p.22) identifies inland wetlands and flood plains as important environmentally sensitive areas that should be preserved with boundaries (buffer zones) directly adjacent to wetlands. Further, the Plan states their significance as performing one or more of the following functions: water supply, flood control, sediment control, natural habitat for beneficial aquatic organisms, wildlife or vegetation, as well as aesthetic, recreational, historic and educational, and economic uses. The Pine Brook Wetlands, containing large and small wetlands and the Pine Brook - Pocotopaug Aquifer is also identified as a proposed public water supply source further emphasizing protection of the wetland areas to ensure quality of water.

The Groundwater section of the Plan (p.25) states that due to increased development in Town, the groundwater table has been lowered. This would apply to the Lake Pocotopaug watershed, resulting in less groundwater for dilution of nutrient input and flushing. This also relates to the importance of maintaining groundwater quality for public water supply.

The Land Use Control and Monitoring section of the Plan (p 26) indicates implementation of a groundwater protection strategy and providing comprehensive regulation of potential contaminating factors. (Public Act 82-279 "An Act Concerning the Protection of Public Water Supply" directs municipal planning and zoning commissions to protect present and future water supplies). Table VI "Potential Land Use Impacts To Ground Water" (p.27) of the Plan ranks land uses with potential adverse impacts to groundwater. The Plan recommends further protection of groundwater by amendment of zoning regulations in aquifer protection zones. Further, the plan identifies the need for more personnel to oversee and follow-up with inventory and monitoring to ensure protection.

The Plan states that maximum protection of groundwater occurs where land is left as open space or developed for recreational use. The Plan then concludes encouragement of open space and recreational use in aquifer protection zones and the implementation of a public water supply system. Water diversion away from the Lake, however, reduces nutrient dilution and lake flushing action by reducing groundwater quantities. Consideration should be given to development of a water supply system drawing from aquifers down gradient of the Lakes' water supply.

The Plan further recommends actions to preserve water quality (p.30). The Plan continually recommends, throughout the report, to continue public acquisition of environmentally sensitive areas and to seek State funds to acquire lands.

VI. Lake Studies, Reports, Recommendations

The lake studies and reports have concluded that Lake Pocotopaug will continue to experience severe nuisance algae blooms and decreased transparency due to cultural eutrophication of the lake without implementation of a watershed management plan. The reports (references 4,5,6, & 7) have further shown that lake quality is dependent upon watershed land use and development. These studies and reports determined that phosphorus is a limiting nutrient, however, one report determined that inorganic nitrogen (ammonia and nitrate) must also be addressed in a watershed management plan (ref. 6 p.8). Further, the studies and reports concluded that, in order to accomplish improved lake water quality, a watershed management plan must be developed and implemented.

Recommendations of the studies and reports, in general, identify actions to increase lake water transparency and reduce export of phosphorous and sediment from the watershed. The studies and reports recommend the following:

- Obtain funding to finance future lake watershed management projects.
- Public education of the causes of lake eutrophication.
- Use of non-phosphorus fertilizers and detergents and increased septic system maintenance.
- Increased use of vegetated buffer zones.
- Revised land use regulations and policy.
- Stormwater management in the watershed, reduce quantity and increased quality of runoff.
- Land acquisition of environmentally sensitive areas.
- Create incentives for creation and retention of undeveloped open spaces and buffer zones along wetlands and watercourses.
- Increase Town inspection and enforcement related to actions which may adversely impact lake water quality by qualified personnel.

These recommendations are consistent with our findings and observations. Further, our recommendations expand on these recommendations, which are repeated throughout the studies and reports.

BLUE RIBBON PANEL

WPCA

Gildersleeve Drive

December 18, 1995

7:30 P.M.

AGENDA

1. Prioritize recommendations of the Lake Studies and Reports.
2. Any other business to properly come before this meeting.
3. Adjourn.

**BLUE RIBBON PANEL
MINUTES
DECEMBER 18, 1995**

Present: Moderator Don Markham, Members Jeff Foran, Charles Nichols, Fred Hansen, Ralph Urban, and George White. Building Panning Zoning Administrator Jim Carey and Superintendent of Public Works Bob Drewry.

Moderator Don Markham called the meeting to order at 7:30 P.M. in the WPCA Meeting Room.

A motion was made by Jeff Foran and seconded by George White to accept the minutes of October 16, 1995. Vote: Unanimous.

The seventy-six items of the Field Reconnaissance of Lake Pocotopaug Watershed (page 29 from the Lake Watershed Report) were addressed at this meeting.

Mr. Carey pointed out that several of the items dealt with private property
Mr. Ralph Urban recommended that a letter be sent to the property owners to make them aware of the findings. The letter should include an insert of the section that is relevant to them and also indicate that the Town could provide technical support.

ITEMS: 1-76

1-6. PRIVATE PROPERTY

7-9. STATE PROPERTY

10-11. PRIVATE PROPERTY

12 -13. New construction subject to all new enforcement's, violations corrected.

14. PRIVATE PROPERTY

15. Cove at O'Neill Lane, O'Neill's Brook - This item should be budgeted for at some point. Recommended for Capital Improvement Plans for this year. Mr. Drewry would like to see this incorporated into doing a little more at Hale's Brook. He will have Town Engineers come up with quantities and estimates.

16. PRIVATE PROPERTY.

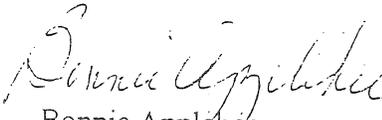
17 - 19. Old Marlborough Rd. - Major project - this item requires long range planning for the rebuilding of Old Marlborough Rd. It is not a major priority according to the Road Study.

- 20-21. Paul's and Sandy's - All the appropriate permitting processes were obtained by Mr. Peszynski. The pond has been monitored by the Town Sanitation Engineer and no nutrient rich water has been found.
22. PRIVATE PROPERTY.
23. Wangonk Tr. at pole #1533 - Mr. Drewry will check on easement and determine if this item is the Town's responsibility.
- 24-30A. PRIVATE PROPERTY.
- 30B. Rte. 66 near pole # 802 - A good planning item for Inland and Wetlands and the Planning and Zoning to take under advisement.
31. Terminus of Spellman Point Rd. - Drainage work done by the Town in the early 70's with HUD Funds. Mr. Drewry will check on this item.
- 32A. Bay Rd./Spellman Point Rd. - Pipes were replaced about 5 years ago, easements would be needed to do work.
- 33-39. PRIVATE PROPERTY.
40. New Construction subject to all new enforcement's, violations corrected.
41. Lake Dr. At West Blvd. - Major rebuilding - flooding problems. Mr. Drewry will double check this concern.
- 42-55. Lake Drive - This is a continuation of the major work that is being done on North Main St. and is being considered for the five year Capital Improvement Plan.
56. Mott Hill Rd. - This could be accomplished with Public Works Department and should be added into next years budget.
- 57-58. New construction subject to all new enforcement's, violations corrected.
59. Clark Hill Rd. - Public Works to do some time as maintenance.
60. Midwood Farm Rd. - The owner of the logging operation has gone through and obtained all the required permits.
- 61-64. Lake Dr. - same as items #42-55.
65. North Main St. At CL&P 914 - Mr. Drewry will check on this.

66. North Main St. At pole #905 across from Bobby's Rd. - this has been looked at and is in the design done this year.
- 67-68. North Main St. - In the design process right now.
69. North Main St. near Marine Boat Repair and Service - Just built it with double sumps, capacity enlarged.
70. North Main St. Near Marine Boat Repair and Service - Significant amounts of sediment, problem with dredging and accessibility. This is a high price tag item and a sinking fund should be started. The start of this next phase is approximately \$175,000.
- 71-72. PRIVATE PROPERTY.
- 73-74. Christopher Lane - Public Works maintenance item.
75. PRIVATE PROPERTY.
76. Lake St. - A new house draining into cross culvert, Mr. Carey will check pole number and public works can possibly take care of it.

A motion was made by Jeff Foran and seconded by Fred Hansen to recommend to the Town Council that letter be sent to all private property owners referencing section that pertains to them, and that the dredging at O'Neill's Cove and possibly more dredging at Hale's Brook be prioritized. This is the first and second choice of this commission and considerate it to be the most important. Vote: Unanimous.

Respectfully submitted,


Bonnie Applebee

BLUE RIBBON PANEL
MINUTES
JANUARY 22, 1996

Present: Moderator Don Markham, Members Charles Nichols, George White, Jeff Foran, Ralph Urban, Fred Hansen, Jacqueline Fantasia, Building Planning Zoning Administrator Jim Carey and members of the public.

Moderator Don Markham called the meeting to order at 7:30 PM in the WPCA Meeting Room.

MOTION by Jeff Foran and seconded by Charles Nichols to accept the minutes of December 18, 1996. **VOTE: Unanimous.**

Review of the LAKE POCOTOPAUG MANAGEMENT RECOMMENDATIONS REPORT

SUMMARY OF RECOMMENDATIONS (section 2, page 3)

Objective I - This objective is covered under the seventy-six items listed in the Field Reconnaissance of Lake Pocotopaug Watershed Report.

Objective II - Item #4 concerning the operation of motor boat and jet-skis is under review for a new ordinance. The other areas of concern have been addressed at previous meetings.

Objective III - Item #2 regarding the Phosphorus Management Method (PMM) is not included in 7.12. Regulation is questionable. Items #4 and 10 will be discussed at Open Space Workshop.

NARRATIVE (section 3, page 6) No Discussion.

RECOMMENDATIONS (section 4, page 16)

Objective I

- Recommendation #1 - Creating a permanent Lake Advisory Committee, this item does not have the support of the Town Council. Duties are handled by the various town agencies.
- Recommendation #2 - Under Capital Improvement.
- Recommendation #3 - Handled by the Health Department and is an ongoing process.
- Recommendation #4 - The various town boards control this recommendation.
- Recommendation #5 - This is an ongoing project of the Conservation Commission.

- Recommendation #6 - We have a town planner already. Engineering and legal concerns can be taken care of with the many resources that are available to the town.
- Recommendation #7 - Ongoing.

Objective II

- Recommendation #1 - Addressed in the WMC Report.
- Recommendation #2 - Copper Sulfate is budgeted for and could be used if deemed necessary. However, considering the location and the water supply wells, the DEP may not allow copper sulfate to be used. A State permit is required for its application.
- Recommendation #3 - A dialog between the town and Mr. Bevin is being maintained. The DEP has notified Mr. Bevin about the maintenance of the dam. The concerns should be addressed by Mr. Bevin.
- Recommendation #5 - Ongoing for Inland/Wetland Commission.
- Recommendation #6 - A couple of areas have continual problems, some are private property and some public-private.
- Recommendation #7 - Discussed at the last meeting.
- Recommendation #8 - This issue is being addressed in the new regulations.
- Recommendation #9 - Discussed at the previous meeting.
- Recommendation #10 - No plans to expand system, most expansion is being done by developers.
- Recommendation #11 - This recommendation is already in place.
- Recommendation #12 - This issue is being addressed by building codes and at a much higher level.
- Recommendation #13 - No money is available for this recommendation.
- Recommendation #14 - Inland/wetland agency handles this.
- Recommendation #15 - Ongoing.
- Recommendation #16 - The biggest concern is the swans and to educate the public about them.

Objective III

- Recommendation #1 - This recommendation was addressed at the previous meeting.
- Recommendation #2 - PMM - This is a controversial issue, other towns are not using the Phosphorus Management Method.
- Recommendation #3 - Ongoing.
- Recommendation #4 - Ongoing.
- Recommendation #5 - Planning and Zoning, Inland/Wetlands.
- Recommendation #6 - Addressed in the WMC Report, changes made to the Road Standards regulation.
- Recommendation #7 - Provision under regulations being proposed would come from a public hearing.
- Recommendation #8 - Handled by the P & Z and I/W agencies and enhanced by 7.12.