ROGERS LAKE AUTHORITY

MINUTES OF THE MEETING OF JANUARY 11, 2005

A meeting of the Rogers Lake Authority (RLA) was convened at the Rogers Lake Community Center on January 11, 2005 at 7:00 PM. The following members were present; Robert Roach, Fredrik Holth, Walter Buch, and Elizabeth Sunshine (secretary) all of Lyme, and Roger Breunig, Brian Kyle, and Richard Smith of Old Lyme. Approximately 30 lake area residents were in attendance. Also present were presenters Gerry Smith of Aquatic Control Technology inc. and Chuck Lee of the Connecticut Department of Environmental Protection Agency.

The RLA Chair, Fredrik Holth, called the meeting to order at 7:00 pm.
The Minutes of the December 21 meeting were read and approved.
The RLA Chair welcomed the guest Speakers Gerry Smith of Aquatic Control tech and Chuck Lee from DEP. Then he outlined the agenda for the meeting.

AGENDA

1. Consideration of Weed Management on Rogers Lake
   - Status of applications,
   - Guest speakers
   - Discussion of proposal
   - Q&A
   - Hearing scheduling
2. Navigational and policing concerns
   - Need to appoint a subcommittee to review ordinances & enforcement
3. Budget requests

Summarizing the RLAs recent events the Chair made the following comments:

The towns of Lyme and Old Lyme in cooperation with DEP have sponsored a full scale evaluation of the Lake, resulting in a comprehensive study done by Aquatic Control Technology. The results of the study and proposed plan of action have met with some concern and questions from all ends.

Initial questioning revealed an understandable reluctance on the part of the pesticides division of DEP to attend preliminary meetings, when the same representatives would act as the officers charged with the approval process.
The Lake Authority is the applicant to the DEP, not the final judge of the legitimacy of any herbicide or other treatment alternative.

Gerry Smith's company, Aquatic Control Technology was employed by the RLA as a consultant to the two towns, for the purpose of conducting the feasibility study that was entertained here and the exploration multiple alternative watershed management techniques and processes. He is here in the capacity of a consultant tonight.

Any future activity which may involve expenditures of public funds would require a bidding process. Aquatic Control Technology could be one of multiple bidders for a contract in any problem resolution sought by the RLA.

Accordingly at the last meeting, with an eye to attempting to meet fiscal requirements,- that is the town finance board approvals, in March 2005 - to develop an appropriate budget request - the authority voted to file an application for herbicide administration initiating the process in such a time as would make action in the summer of 2005 tentatively possible, while maximize the availability of DEP expertise **before** committing to any one course of action following the public hearing.

In the wake of that meeting, several residents have voiced the thought that there should be more opportunity to review cost/benefit/needs during a period when non-residents could readily be expected to provide input.

In response this meeting has been called. Mr. Smith who was to file that proposed permit application was instructed to hold off pending reconsideration of the timetable. Although this matter has been before the authority for over a year, we are here tonight to discuss a revised timetable and global consideration of all of the alternatives for weed management with even grater public opportunity to comment.

Contrary to the inferences that may have arisen – I want to make it clear that:

1. There is NO commitment on the part of the Lake Authority to engage in herbicide treatment in the waters of Rogers Lake.
2. The Rogers Lake Authority seeks full transparency as its primary obligation to the people of the Towns of Lyme and Old Lyme. This necessarily involves a full exploration of all alternatives in lake management and facilitating all reasonable public comment.

Some of the watershed management options addressed by the feasibility assessment were:

Source reduction, inflow into the lake that potentially infect the lake.
Agricultural best management practices
bank and slope stabilization
behavioral modifications through public education
waste water management
zoning and land use planning
transport mitigation(storm water)
buffer strips
catch basins
created wetlands
detention ponds (storm water)
infiltration systems (dissipation of water into soil or other media)
street sweeping and catch basins

'In Lake" Management Systems considered were:
Mechanical removal methods
Harvesting
Hydroraking
Dredging

Physical Methods - alter growing conditions - control plant growth
Drawdown
Bottom barriers
Dredging
Dyes shading
Hand pulling
Aeration-increase O2 sats equalizing phosphorous loss from sediment

Chemical methods – targeting milfoil
Herbicides
Diquat (Reward)
Aquathol-L(endothall)
Targeting Milfoil, large leaf pondweed.
Algaecides
Nutrient removal

In terms of budgeting for any of the avenues we choose to follow, the early view of herbicide treatment is for 50 acres of application with an approximate expense of $20,000. A DEP permit is absolutely a requisite to be able to go forward with that. Several other local Connecticut lake administrations have been called with respect to The Diquat application. They have had it applied for up to 9 -12 years with no complications.

The study concluded:
Rogers Lake has a high flushing rate, low phosphorus levels, internal nutrient loading is low from sediments, and the lake will not tolerate much in the way of nutrient increase. Water clarity, thermocline depth, & O2 loss suggest a balance

at the upper limit of the anoxic boundary (page 93 of the report)

The recommended plan
"Based upon the current conditions, watershed management issues will become increasingly important in the years ahead. Present nutrient loading of phosphorus and nitrogen from the watershed is at a critical turning point between the permissible and critical levels"

Following in the wake of that recommendation is a series of more in-depth recommendations, which we can run through at length. When it comes to the 'In lake' treatments that were discussed in the plan;
Chemical treatment The proposal was treatment of approx 50 acres in the central section of the lake where there is maximum flushing for the upper basin to the lower basin with Reward (Diquat) or Aquathol (Endothall) herbicide used to control millfoil and large leaf pond weed respectively; the cost for that was $20.000.
Harvesting as an alternative to chemical treatment. Harvesting can be used to provide seasonal management and could be done on 50 acres in the central portion of the lake for approximately $30,000.
Hydro raking recommended for the high use area of the lake and in front of individual shore front to remove waterlilies, clean swimming areas, and open and maintain boating channels. The cost would be $160.00 to $175.00 per hr plus $800.00 to $1000.00 for mobilization and demobilization of the equipment that needs to be brought in, used and removed
Draw down is unlikely to provide effective control of nuisance vegetation. However, the continuation of the current practice of an 18 inch draw down is recommended to provide near shore plant control and to allow for dock repair and shoreline maintenance.

These are the basics that we have been considering up to now, and I realize that there have been some question as to our pre-commitment in any fashion to herbicides. So that any one in the public can have an adequate opportunity to consider the input that we have had to this point, we have invited Chuck and Gerry down here to speak to you and answer your questions in a public education forum environment.

The chair, Fred Holth, introduced guest speaker Gerry Smith of Aquatic Control Technology.

Gerry Smith introduced himself as an Aquatic Biologist and the owner of Aquatic Control Technologies (ACT) based in Sutton, Mass. The company has been in business 28 years and Mr. Smith has over 30 years of professional experience in the field. He stated that ACT practices an integrated approach to pond and lake management. They do lake diagnostic assessments and the implementation of management programs. ACT employs 7 full time biologists, environmental engineers, and several equipment technicians. Annually they work on over 400 ponds and lakes throughout New England, Approx 100 of which are in Connecticut. Mr. Smith touts the considerable amount of not only theoretical but also the applied experience ACT has with implementing all the techniques that were discussed and proposed in the plan. The recommendation and draft plan that had been put forth for consideration called for herbicide treatment in the first year in four specific areas in the lake. The four target areas harbor the greatest concentration of milfoil and are located in high traffic, high use areas where the milfoil is being fragmented (spreading). Treating these target areas with Diquat would promote the most public good in an attempt to control milfoil. Diquat generally will not kill large leaf pondweed, and some of the other native plant life. It has desirable properties in terms of fairly fast acting, and having rapid dissipation rates from water providing fairly short term water use restrictions, if any. Mr. Smith stated that along with any management plan, there should be a certain amount of monitoring to determine what the impact is on the plants, what the efficacy is on the plants, what the impact is on the water quality if

any. Whoever does the monitoring it should be included in the budget at approx $2,500 to $5,000.
Another item in the budget is public education, which could take the form of flyers to inform residents of best management practices, planting of vegetative buffer strips, and what you can do as a homeowner to help improve Rogers Lake. Public education to teach how to identify milfoil and what techniques you as a homeowner can use to remove it.
Mr. Smith stated that when you embark on a watershed management program like this, that it should not be done as a one year process. There is a reoccurring management requirement; the technology is not available to eradicate milfoil. What we can do is arrest further spreading, manage it and control its growth.

In the 2nd year of the plan we discuss maintenance treatment. Contact treatment of Diquat (Reward) which is a contact herbicide and does not kill the roots of the plants. Other herbicides that might kill the roots of the plant include products such as "SONAR",a herbicide, which has been widely used in CT and 2-4-D herbicide. The 2-4-D herbicide has potential ramifications on shallow wells, whereas the Diquat does not. Mr. Smith sites many tests locally and around the country that show that Diquat does not move through ground water and therefore does not have any ramifications on shallow wells. This being a concern in the Rogers Lake area, Diquat is the chemical of choice.

In year two, selective spot herbicide treatment would be accompanied by mechanical harvesting in some of the areas close to shore, again monitoring and education play a crucial role.

In year three, we are talking about maintenance of these areas and looking into any other areas that may be harboring milfoil, if the monitoring data that is generated after years one and two is positive and there is no negative effects on fisheries or water qualities, then we may want to look at expanding into other areas of milfoil. Areas of the lake that do not harbor high concentrations of milfoil may be better suited for mechanical hydroraking.

It should be noted that there is an equity issue to be dealt with when the RLA or the Towns pay for the Hydroraking of individual private shorelines, whereas the Diquat treatment of the central area of the Lake benefits all. In that light the RLA may help to bring in the equipment and individual waterfront owners may want to sign up for hydroraking of their shoreline. Any mechanical work done to individual waterfronts would require a permit from the inland wetlands commission. What the RLA could do is to apply for a blanket permit to cover any participants, possibly by stating a maximum sq footage allowed to be raked by owner or perhaps limited by a percentage of waterfront owned. The RLA may be able to assist in sign up for hydro raking and if there is enough interest pay for the equipment mobilization charge, demobilization costs and disposal considerations.

Mr. Smith discussed the report that was created by the two to three year study and those who had professional input into the report. He discussed the afore mentioned items that were looked into as alternative management techniques; drawdowns, dredging, dyes, bottom barriers etc. He stated that many options were discussed in depth in the report as methods of management of the milfoil, however, given the unique criteria of Rogers Lake, they were not seen as feasible alternatives, as they were either not effective or not cost permissible or they carried unacceptable risks or consequences. At this time Mr. Smith accepted questions from those in attendance.

Q Please describe the look of milfoil
A. It looks like a skinny Christmas tree.

Q. Does it look like pickerel weed?
A. No, pickerel weed extends above the surface of the water, milfoil stays below the surface.

Q. What is its origin? How did it get here?
A. This milfoil is native to the southern United States. It could have been brought as an aquarium plant and carelessly discarded; it could have been brought in on the propeller of a boat, or fishing pole. This plant fragments easily and a very small piece can become a new plant.

Q. If left alone will the milfoil eventually infest the entire lake?
A. No. Milfoil can only grow in areas where the water depth is 10 ft or less. So you will never have 100% of the lake infested. However what will happen is that this plant is so invasive that it will eventually overtake and displace all the other natural plant life in the lake. Fortunately Rogers lake has only a moderate infestation now, it is one that can be controlled and keep the growth arrested.

Q. 2-4-D is a very common pesticide used in land maintenance and some of that may be running off into the lake, what did your tests show as far as the presence of 2-4-D in the lake water?

A Practically none, we use 2-4-D in some applications. It does tend to bind tightly to soil but we like to use it where there are not potable water supply concerns and wells because it is a systemic treatment and one application will typically control of milfoil for 2 or 3 years as opposed to Diquat that will have to be applied more often. There have been many tests done on 2-4-D and lakes that have shallow wells and although there has not been any evidence that 2-4-D has passed into any wells agencies governing their use tend to err on the side of safety.

Q. What fraction of plant life in the lake is the milfoil?

A. It is the dominant weed more than 50% cover in the areas proposed for treatment. In the high traffic area of Jessie Creek (the boat launch) it is in high concentration from being fragmented by propellers and may be being transported to other areas.

Q. I would like to see the homeowners in Jessie Creek have the opportunity to do mechanical harvesting and hydroraking. In order to be able to get out to the lake.
A. RLA Chair –Any waterfront property owner can apply to the inland wetlands commission for a permit to do that, unfortunately on your own it is very expensive to pay for the equipment to be brought in and removed. It is our hope that we can get several property owners together apply for a blanket permit and assist in the mobilization and demobilization of the equipment.
A. Mr. Smith – we are really talking about two mechanical processes one is mechanical harvesting and the other is Hydroraking. You are really in need of hydroraking for the individual waterfronts.

Q. Are waterlillies a bad weed? If we get this permit and people hire you to rake the waterfront, will all the waterlillies be raked out as well?

A. The rake pulls up all the weeds, not just milfoil. This is why we said the permit should have limits e.g. only allow a certain number of square feet per owner or a

fixed percentage of the individuals' waterfront would be allowed to be raked.

Q. I think some of us are concerned with our shallow wells. How reasonably safe is the application of herbicide? Should we be testing our wells after the application? What do we test for?

A Part of the plan is education and should we go ahead with treatment we would have all that information made available to you. Chemical used, concentrations used, locations treated etc. I can tell you that the chemical of choice in this application, Diquat, is so immobile that we can not even use it in muddy water. It binds instantly to the clay and the particulates of water so consequently it does not move through soils or contaminate wells.

Q. The town beach area has a dense population of nuisance weeds which tend to stagnate the water at the beach, thus in conjunction with the geese droppings, produce high bacteria levels, and result in the beach closure. Why is this area not one of the target areas?

A. I would have to talk to the engineer of the plan but certainly if there is a nuisance weed area that is limiting circulation to a public beach or gathering place that should be looked at as a potential target area.

A. Resident - It is one of the four target areas as noted on the map.

Q. There was a question concerning the methodology of the sampling of the phosphorous levels in the lake. He noted a concern that with the removal of plant life comes algae, because harvesting removes the phosphorus whereas herbicide does not.

A. Close monitoring will help us determine the concentration of chemicals and algaecides to use. There are many considerations to balance effect and move in a positive direction. Dr. George Nybond, who did the sampling for our study, may be able to address any prosperous related questions.

Q. We have the three year outlook, but what is the long term projection for this issue.

A. The problem will not be cured in three years. This is an ongoing program, after the 3 yr program, as in about ½ of our current treatment plans, we are not treating the water every year. Monitoring and inspections set threshold levels of infestation to trigger treatment.

Q. How much of an impact can we, as waterfront property owners, have in the management of the milfoil?

A. Watch groups, monitoring, identifying problem areas, are all helpful. The chemical or mechanical treatment of milfoil must be done by licensed persons.

The RLA Chair introduced Chuck Lee to explain the Review process of Aquatic Herbicide Treatment; Following is a summary of his comments;

First, any herbicide has to be registered with EPA, and then it is reviewed and registered in Connecticut by the DEP pesticides group. Commercially it can only be used by a CT DEP licensed Aquatic herbicide applicator. Every Aquatic herbicide application is then permitted by DEP. There is a much more in-depth process for aquatic application vs. someone applying the same chemical on their own property. When the DEP pesticides division receives the application for an aquatic treatment they review it, and if the lake is a significant fishery, they recommend that the fisheries division and the natural resources division look at it. Then it will be reviewed for any water quality concerns. The application then goes back to the pesticides division to include all comments restrictions, and limitations suggested by the other reviewing entities, and they issue the permit including any conditions.

Mr. Lee opened the floor for questions.

Q. What is the timetable for an application for a permit to be approved?

A. Normally we receive ~500 applications a year. If they are submitted in winter or early spring, they generally are processed and are available. This one will take longer because it is going to be a more extensive review, just because of the resource.

Q. What division are you with? Do you deal with the Canada Geese?

A. Water bureau waste management division, and we have been called on the Canada geese. Ultimately it is the wild life division that handles that issue, however, we are often involved as the geese do affect water quality, in that they cause nutrient loading, which causes algae and weed growth. But also the feces consume 02 as they decompose dropping the levels in the water to where the beach can be closed.

Q. The debate as I here it is, whether to apply, or not to apply herbicide to the lake. I don't hear anything that really tells us any of the alternatives either in prevention or anything that could be done on a parallel path with application. This makes me think that chemicals may appear to be an easy band aid to solve a problem that is not going to be resolved when we are still doing things to initiate growth of this weed. People are fertilizing their lawns, there is discussion of the elway reintroduction into the lake which would increase nutrient levels and thus encourage growth. There does not seem to be any parallel talk that is either connected with, or contrary to herbicide application. There is much to be gained by educating people and modifying behaviors.

A. The report that was published did speak to nutrient management, working with the town as far as education, storm water and runoff management, homeowner education; those areas are addressed in the report. I understood the focus of this meeting tonight to be more geared toward in lake management, and using this type of forum as public education.

Q. Mr. Smith, how is it your company can be paid to produce a study and recommendations for remedy, the result of which is for a product that you provide?

A. RLA Chair – I don't think that Mr. Smith should be put on the spot like that as it mischaracterizes his presence here as a consultant. Also any expenditure that is made on behalf of the towns must go through the legal bidding process put out to the public. Mr. Smith's company may be one of those bidding on the project. His role here tonight is as a hired consultant to assess the problem and the possible remedies.

A. Mr. Smith stated that ACT is often called to do both the study as well as find a remedy, do the permitting and the implementation of a management plan. ACT has 28 years of experience in the field and a great track record. It is the first hand knowledge from having done the study and the research that allows us to best treat the problem. Again, ACT relies on its experience and reputation and credibility in the field.

A. Chuck Lee of DEP- stated that as far as the report goes, it was funded with a grant from DEP, who reviewed the recommendation in the report for the use of herbicides. The CT DEP is also involved. Upon review, DEP didn't feel that the use of herbicides was an inappropriate recommendation. There is a 3rd party review on that issue, it is not just the RLA and ACT, DEP are involved as well.

A. It should also be noted that prior to embarking on the study, the RLA put the study out to bid and Interviewed three companies with similar qualifications as a result of these interviews The RLA engaged ACT to perform the study. This action was begun because of request by residents complaining about the infestation.

Q. Can you tell me why one lake would be permitted to use herbicides and another may not?

A. Each case is different, and must be determined on its own merits. Since only licensed persons can make application to treat, they generally only put fourth acceptable chemicals. One reason for denial for e.g. is if one lake is a drinking water reservoir and another is not.

Q. What about the rare and endangered mussel?

A. Where you have species of special concern, there is additional review, the mussel in Rogers Lake may not be a concern because the target of the herbicide is vegetation where we get concerned is when the species of special concern is similar to the target and may be affected adversely.

Q. Would the fact that Rogers Lake has a high flushing rate be an advantage?

A. We are suggesting treatment for only 50 acres of the 250 acre lake; flushing rates do not have that much of an effect when treating smaller portions of water. They come into greater play when treating 100% of bodies of water.

Q. How is the treatment applied?

A. We typically use an air boat equipped with pumps and tanks and an injection system. Onboard there is a GPS unit that is used to guide the injection site in a grid pattern. The herbicide is injected through weighted hoses in precise dilutions for each target area.

Q. What happens if we do nothing? Will the milfoil eventually infect 100% of the lake?

A. No. Milfoil can not grow in water deeper than 10 feet. However, what you will see is that milfoil is an invasive plant and will overtake and kill off all other native plant life and infest areas where it can get enough sunlight to survive. This would affect fisheries, habitats, nutrient levels, and general lake enjoyment etc.

RLA Chair questioned those in attendance about the possibility of having another educational meeting in the summer when those non residents who have cottages on the lake could be in attendance. The majority of the residents preferred a summer meeting over a spring meeting.

A motion was made to have the next public hearing on Saturday, June 25, 2005 at 10:00 am at the Rogers Lake Community center. The motion was seconded and carried.

A motion was made to have the next meeting of the RLA, originally scheduled for 3/8/05, postponed to 3/22/05 at 7:00 pm at the Rogers Lake Community Center. The motion was seconded and carried.

In an attempt to get an idea of the feeling of the residents the RLA chair asked:

How many people that are present here tonight are against the application of any herbicide in the Lake?

Response was approximately ½ of the residents present.

How many people that are present here tonight are for the application of any herbicide in the Lake?
Response was approximately ½ of the residents present.

If the lake were treated how much acreage would you be interested in seeing treated.

10 acres	-	none
20 acres	-	none
30 acres	-	none
50 acres	-	~ 20 hands

With regards to cost parameters how many people support the expenditure of funds for the management and control of weeds in the lake?
Response - ~30 hands

Back to Q&A

Q. Do you have a web site where people can get more info?
A. Yes. www.Aquaticcontroltech.com

Q. Is there any other chemical like 2-4-D that would do a better job, or longer term control?
A. There is no silver bullet at this time that is safe to everyone and everything including people plants, fish, animals etc.

Q. How was this problem dealt with in the past?
A. Harvesting in the 1950's and in the 1980s, private harvesting took place. The authority acted to get the equipment in and property owners contracted to have their own waterfronts raked.

Q. Can parts of the lake be made deeper or dredged?
A. Dredging is very expensive ~$100,000.00 per acre. Which makes it a pretty expensive proposition since we are looking 50 acres of area.

Q. Given that boats may be bring in these offensive plants, should we be looking for a boat washing station?
A. An inspector may be more effective in reducing incoming plant life. There are a lot of ways the plants can get into the water system; I would recommend an annual survey of vegetation as well as monitoring the boat launch.

Q. Would there be any affect of herbicide application on bottom feeding animals that may ingest it?
A. I have not heard of there being any bio accumulation with the use of Diquat. That would be reviewed in the initial registration of the herbicide and its effects in order for it to be an approved herbicide. So I am comfortable that it is not an issue.

Q. Given that this application is at least a year away, would the RLA consider allowing restricted harvesting in the spring.
A. That is the next item on the addenda

There was discussion of the possibility of ACT coming down to do hydro raking this year. ACT would need a commitment of at least 16 hours of hydroraking, 1-2 hrs minimum per customer the cost would

be $125.00 to $175.00 per hr. If there is enough interest the RLA will act as an agent in collating applications for the blanket permit and pay the mobilization and demobilization costs of the equipment and will look into disposal issues.

If you are interested in procuring raking this summer please make your application at or by the March 22 RLA meeting.

Different means of communicating and educating lake residents were discussed, and a majority of the residents left the meeting.

Budget:	2004-2005	2005-2006
Misc, boat gas/ maintenance	1,000.00	1,000.00
Admin, Flyers, education, speakers etc		1,100.00
Staffing, Patrolling	4,100.00	3,600.00
Policing, enforcement.	6,200.00	6,200.00
Total proposed budget		12,000.00

The total proposed budget was12,000.00, of which $6,000.00 would be paid by Lyme and $6,000.00 would be paid by Old Lyme.

The proposed 2005-2006 budget was discussed and a motion to request $6,000.00 from Lyme and $6,000.00 from Old Lyme was made. The motion was seconded and carried.

A motion was made to create a sub committee to study the present ordinances on the lake. The motion was seconded and carried. Robert Roach will chair this committee.

The next meeting is scheduled for March 22, 2005 at 7pm at the Rogers Lake Community Center.

The meeting was adjourned at Approx 9:50 pm

Respectfully submitted,

Elizabeth Sunshine
Secretary