TO: MAYOR AND TOWN COUNCIL

FROM: DAVID BRACKEN, TOWN MANAGER DB

KEVIN KRAMER, SUPERINTENDANT OF PUBLIC WORKS

SUBJECT: INFORMATIONAL 'WHITE PAPER' ON THE CONTROL OF ALGAE AND OTHER AQUATIC PEST PLANTS INHABITING LAGOON 1

DATE: OCTOBER 2, 2009

Background

Lagoon 1 (along with Lagoon 2) was constructed as part of the Madera Gardens Subdivision in the 1950's as a retention basin for storm water runoff. Retention basins are commonly used in flood control systems to hold storm water during periods of high tide when it can't be discharged directly into a larger body of water. The area of the lagoon is approximately 9 acres, and is the retention basin for Watershed No. 1, which is approximately 167 acres. It was acquired by the town through a grant deed from the developers of the Subdivision in the early 1950's.

The attached letter from A.H. Brandow, Town Engineer and Manager of Corte Madera in 1963, along with excerpts from the "Lagoon News" and the IJ, indicate that there have been problems and issues with the Lagoon since its creation. These issues include algae and plant growth, siltation, the cost of flushing and controlling water levels, etc. The letter also indicates that the Town's policy was only to maintain or improve the lagoon's flood control function, except that a summer flushing program would be conducted. It also indicates that the summer flushing during the summer months is "generous...since this benefits only the people living adjacent to the Lagoon but is paid for by all the taxpayers".

It should be noted that a certain amount of algae is a normal and healthy component of a lagoon. It is a major source of oxygen and food for fish living in it. However excessive growth of algae, often referred to as algae "blooms", together with discoloration and clumping of the algae on the surface, indicates an unhealthy water environment. This usually occurs in warm weather. Sunlight reaching the bottom of the lagoon also spurs this type of growth.

The above stated policy notwithstanding, it has been the town's practice to maintain water quality in the lagoons to some degree beyond that of summer flushing. Based on staff recollection, the chemical granular copper sulfate was used to inhibit algae growth in Lagoon #1, Marquart Lagoon (then known as Lagoon#2) and the Pixley fly-casting pond in the mid 1980's. The use of copper sulfate was legal at the time but its use was

5

curtailed when it was determined that the chemical might be remaining in the lagoon's bottom layer of mud and could pose a risk to fish and other aquatic life. After the use of copper sulfate was terminated, staff tried a number of approved herbicides including Simizene, Aquazine, Cutrine, and Diquat. Please note that all of these products were, at the time, legal and considered appropriate solutions for algae removal; and, in most cases, their use proved to be adequate. In addition, staff secured all appropriate permits, approvals, and recommendations necessary for application at the time. Eventually all of these products were banned by the San Francisco Regional Water Quality Control Board (RWQCB) due to possible toxicity. It should be noted that the RWQCB regulates the discharge of storm water into the San Francisco Bay under a permitting process.

There also was a period when staff attempted to inhibit the algae growth by creating turbulence in the water when filling the lagoon, and thereby reducing the amount of sunlight reaching the bottom. This had somewhat of a positive affect, however the RWQCB did not consider it to be what they call best management practices since the suspended sediment can harm fish when it gets into their gills. Consequently we were asked to cease this practice.

Methods of Algae Control

- Aquatic Herbicides – As noted above chemical application has proven to be effective in controlling algae growth at a relatively low cost, however by virtue of the town's own Integrated Pest Management Program (IPM) and the regulations imposed by the Regional Water Quality Control Board, this type of application is simply not acceptable anymore.

- Control of Nutrient Runoff – One of the most common reasons why ponds have excessive algae is nutrient pollution, or the runoff of fertilizer used on lawns and gardens. Most of these fertilizers contain nitrogen, phosphorous and potassium which when combined with sunlight and warm temperatures permit algae to grow out of control. Nitrogen, phosphorous, carbon, and potassium are the four nutrients that tend to give pond owners the most trouble. They are the chemicals pond plants use, combined with carbon dioxide and water, to grow and make new leaves. Limiting the amount of fertilizers used on lawns and gardens adjacent to a lagoon with have a positive affect on limiting algae growth.

- Barley Hay – Barley hay has been publicized as an effective, organic remedy to algae problems. When placed in water the decomposition of the hay releases organic chemicals that are supposedly toxic to algae. This technique is sometimes used in coy ponds. However research shows that barley hay does not always solve algae problems. In particular, pond-scale tests show that mat-forming algae, floating on a pond surface, are seldom affected by barley hay.

- Hand Removal – One method of algae removal is to scrape the blooms off the surface of the water or to cut the stems off near the bottom. Lacking the permission to use any type of herbicide, staff has attempted to harvest the algae

with a barge and pitchforks, breaking-off the clusters on the surface and pulling the stems from the bottom. Given the size of the lagoon this proved to be a very time consuming task. The actual cutting of the algae was found to be more difficult than anticipated, and depending on the weather it was found that the algae would grow back quickly and sometimes thicker than before, as is somewhat typical with most plants when they are trimmed.

- Mechanical Removal – Staff has met with a local dredging contractor to discuss the feasibility of mechanically removing the algae with equipment such as a barge mounted excavator. It was determined that this would be feasible, however because of the limited access to the lagoon mobilization of the equipment and the removal of the algae in trucks would be difficult. The initial cost of such an effort could exceed $250,000. It was suggested that the equipment could be purchased and left in the lagoon to reduce future costs since the removal would be an ongoing maintenance process. Although regulatory permits would be required for this method, one advantage is that it could most likely be issued as a maintenance permit. In other words one permit would cover the removal on an annual basis.

- Ultrasonic Waves – A firm called Sonic Solutions has developed a transducer that the manufacturer claims will emit ultrasonic waves at the precise frequency to destroy the algae's cellular functioning and structure. Although the manufacturer's website makes this product seem like the ultimate solution, it does have drawbacks. It is a relatively new product and the effectiveness and durability in an environment such as Lagoon 1 would be questionable. The cost of an installation and setup in the Lagoon would be approximately $75,000. Staff has discussed the product with the RWQCB and they would not allow its use unless an environmental assessment was done to determine the impacts of the product on fish and other species of plants in the Lagoon.

- Dredging – As noted above the acceleration of algae growth is a function of the amount of light and heat both on the surface and at the bottom of the Lagoon. Dredging the Lagoon would reduce both light and heat on the bottom and is known to be an effective means of reducing algae blooms. The Marquart Lagoon was dredged in the mid 1990's and both staff and the homeowners on that lagoon felt that it had a very positive effect on the reduction of algae growth. The obvious drawback to this method is the cost. It is estimated that the cost of dredging Lagoon 1 would well exceed $2,000,000. The permitting process for this would also be extremely tedious and expensive. It should also be noted that given the fact that algae growth has been an issue in the Lagoon basically since its creation, dredging to the original depth may not achieve satisfactory results, and dredging to a greater depth would increase the cost and could present problems with bank and dock stability.

Conclusions

There is no easy solution to this problem. Cost will be a major factor. The town's lagoons are considered waters of the state and all activities affecting water quality are regulated and permitted by the RWQCB. The regulatory process has become much more complex than it was ten or fifteen years ago. In fact the permitting for projects within the jurisdiction of the RWQCB can sometimes cost more than the implementation of the solution.

Staff has discussed the problem with an aquatic expert, Alex J. Horne, Ph.D., and asked for advice. The gentleman was referred to us by the RWQCB. His initial reaction was that the source of the problem is a poor design of lagoon, which means it will be difficult to solve, and that a management plan needs to be implemented that would focus on nutrient reduction. This opinion is stated in the attached email string.

Based on the above, it is recommended that the Lagoon 1 homeowners form either a formal or an informal assessment district with support from town staff to develop (through a contract with consultants who are experts on the subject) and implement a long term maintenance program to control the algae and enhance water quality.

Attachments:

1. Letter from A.H. Brandow, along with excerpts from the "Lagoon News" and IJ articles

2. Email from Alex J. Horne, Ph.D.

David Bracken

From: Kevin Kramer
Sent: Thursday, October 01, 2009 4:56 PM
To: David Bracken
Subject: FW: Re: lagoon algae management
Attachments: Marla Lafer.vcf

From: Marla Lafer [mailto:mlafer@waterboards.ca.gov]
Sent: Thursday, July 16, 2009 8:47 AM
To: Kevin Kramer
Subject: Fwd: Re: lagoon algae management

Marla Lafer
San Francisco Bay
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Phone: 510.622.2348
Fax: 510.622.2501
e-mail: mlafer@waterboards.ca.gov

Never stay up on the barren heights of cleverness, but come down into the green valleys of silliness.
Ludwig Wittgenstein

>>> "Alex Horne" <anywaters@comcast.net> 7/16/2009 8:30 AM >>>
Hi Maria, My former masters student Richard Looker sent your request to me.

It sounds like all the other algae problems that crop up from time to time. I have worked with similar concerns in Foster City, Oakland, Bay Island and a number of others. There are several solutions and ideally they involve a bit of data collection-analysis, a bit of putting them together and selecting one or more of the 17 methods for lake management. Finally a plan can be made. The solutions usually involve some kind of reduction in nutrients either from the watershed or in-lake versions such as alum or aeration. There is usually an algaecide needed (although they sometimes confuse filamentous algae with higher plants) and thus correspondence with the Board and a licensed applicator. Then there are the innovative methods that revolve around biomanipulation and maybe wetlands of various kinds. I have put together a good plan for some cities, a large area near Sacramento being a recent one.

The main trouble is that if you construct these 5 foot deep algae incubators, they will grow algae. The initial problem is the silly developer and landscape architects. The second problem is that it costs money to fix these problems and also for the long-term maintain. Most cities do not realize they will need $25 K/yr at least in long-term obligations to keep the ill-designed but definite beauty of a shallow urban lake.

10/2/2009

So normally the cannot or will not afford both an expert like me and one of the couple of lake applicators in the region. However, I could talk with them if they are interested and have at least some inital funds in this lean time for cities.

Alex J. Horne, Ph. D.
Professor Emeritus, Ecological Engineering
Dept. Civil & Environmental Engineering
University of California, Berkeley

Address for correspondence
Alex Horne, Principal
Alex Horne Associates
867 Bates Ave.
El Cerrito CA 94530
Phone: 510-525-4433
Cell: 510-508-0217
Fax: 510-527-1085
anywaters@comcast.net

----- Original Message -----
From: Marla Lafer
To: Adriana Constantinescu ; Adrienne Miller ; Agnes Farres ; Ayana Fiñones ; Alan Friedman ; Aleathia Gary ; Andree Greenberg ; Athena Honore ; Alyx Karpowicz ; Akshay Banesh ; A. L. Riley ; Anders Lundgren ; Amy Lambert ; Annika Anderson ; Alec Naugle ; Andrea Ozzuna ; Annie Pierpoint ; Angela Tsao ; Abigail Smith ; Anna Torres ; Blair Allen ; Barbara Baginska ; Ben Livsey ; Braiden Albrecht ; Brian Grace ; Brian Thompson ; Barbara Sieminski ; Brendan Thompson ; Brian Wines ; Bruce Wolfe ; Carrieann Lopez ; Carrie Austin ; Christine Boschen ; Cleet Carlton ; Cecil Felix ; Carmen Fewless ; Chuck Headlee ; Ching Liu ; Cherie MCcaulou ; Curtis Scott ; Carol Thornton ; Claudia Villacorta ; Daven Patel ; Danny Pham ; David Barr ; Dale Bowyer ; Dorothy Dickey ; Debbi EgterVanWissekerke ; David Elias ; Derek Magnuson ; Dale Hopkins ; Devender Narala ; Derek Whitworth ; Dyan Whyte ; Dylan Duverge ; Elizabeth Allen ; Elizabeth Christian ; Elizabeth Morrison ; Emily Pimentel ; Ericka Montana ; Erich Simon ; Ethan Ma ; Elizabeth Wells ; Farhad Azimzadeh ; Farhad Ghodrati ; Fred Hetzel ; George Chin ; Gina Kathuria ; George Leyva ; George Rose ; Habte Kifle ; Hong Nguyen ; Heather Ottaway ; Judy Kelly ; James Kirwin ; Jill Marshall ; Joulia Boiarskaia ; James Carolan ; Jessica Leyva ; Jessica Watkins ; John Jang ; John Kaiser ; Jennifer Krebs ; Johnson Lam ; John Madigan ; Jodi Bailey ; Janet O'Hara ; Joan Patton ; James Ponton ; Jolanta Uchman ; Janet Cox ; John West ; John Wolfenden ; Katie Altman ; Karissa Anderson ; Kent Aue ; Kevin Brown ; Kathryn Hart ; Keith Lichten ; Karen McDowell ; Kristin Ethier ; Keith Roberson ; Karen Taberski ; Leslie Ferguson ; Lourdes Gonzales ; Laurent Meillier ; Lisa Owens-Viani ; Leslie Perry ; Lila Tang ; Laurie Taul ; Lindsay Whalin ; Margarete Beth ; Marlen Morales ; Mary Ann Beesley ; Mary Rose Cassa ; Michael Chee ; Matt Graul ; Mark Johnson ; Marcus Klatt ; Marla Lafer ; Marcia Liao ; Martin Musonge ; Michael Napolitano ; Michelle Rembaum ; Michael Rochette ; Max Shahbazian ; Mary Tryon ; Melinda Wong ; Myriam Zech ; Nathaniel Ma ; Naomi Feger ; Nick Westerman ; Nancy Katyl ; Nathan King ; Marie Thomas ; Paula White ; Paisha Jorgensen ; Peter Otis ; Paula Trigueros ; Ralph Lambert ; Ray Arebalos ; Rico Duazo ; Rie Inaba ; Richard Looker ; Roger Papler ; Robert Schlipf ; Ross Steenson ; Randy Lee ; Sonny Bonifacio ; Susan Gladstone ; Stephen Hill ; Selina Louie ; Sue Ma ; Sandia Potter ; Shin-Roei Lee ; Suzanne Spencer ; Tarandeep Singh ; Theresa Donahoe ; Tiffany Leyva ; Tina Low ; Thomas Mumley ; Terry Seward ; Tong Yin ; Vince Christian ; Vic Pal ; Vonnie Williams ; Wil Bruhns ; Bill Hurley ; Bill Johnson ; Xavier Fernandez ; Yousef Al-Shomaimri ; Yuri Won
Sent: Wednesday, July 15, 2009 1:23 PM
Subject: RE: lagoon algae management

Does anyone here have experience (or can you recommend a consulting firm, literature, etc.) with methods for regulating/controlling lagoon water quality. The Town of Corte Madera is trying to respond to citizen complaints regarding algae in some of the lagoons they manage. The Town manages a system of lagoons and canals which discharge into High Canal then to Corte Madera Creek (CMC) and ultimately to the Bay. Here's a little bit of information – I can provide more if anyone takes the bait and responds to this request!

Attachment 2 2/3

Lagoon 1 is ~ 8.9 acres in area and about 5' deep. In addition to direct runoff and discharge from the storm drain system, the lagoon receives runoff from the other lagoons and surrounding marsh.

Marquart Lagoon (downstream of Lagoon 1) is ~ 3.6 acres and ~ 6' deep. This lagoon receives water from the immediate perimeter and neighborhood storm drains.

There are a series of pump stations that control water movement in the system including the High Canal Pump station which relies on tidal action to remove water from the lagoon system into CMC, 4 pump stations to pump water from Lagoon 1 into High Canal and 1 pump available to pump water from Marquart Lagoon into High Canal.

Thanks
Marla

Marla Lafer
San Francisco Bay
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Phone: 510.622.2348
Fax: 510.622.2501
e-mail: mlafer@waterboards.ca.gov

Never stay up on the barren heights of cleverness, but come down into the green valleys of silliness. Ludwig Wittgenstein

>>> "Kevin Kramer" <KKramer@ci.corte-madera.ca.us> 7/15/2009 11:29 AM >>>
Hello Marla,

Upon meeting with some residents on Lagoon #1, the idea of lowering the lagoon to -3.5 ft and allowing it to remain for about a week might, it is speculated, kill the majority of the algae. I am unfamiliar with this proposed technique and I am somewhat skeptical as to its outcome. The resident's theory is that the sun and associated heat may kill the algae. Do you have any information as to the efficacy of such a suggestion? My main concern and a reasonable extension of the thinking is a resultant and significant "fish kill." Maybe you could query your associates, as patience of the residents appears to be inversely proportional to the proliferation of the algae bloom.

Thanks for your consideration

Kevin

TOWN OF CORTE MADERA

January 21, 1963

SUBJECT: Flood Control - Lagoon Maintenance

Town Council
Corte Madera
California

Honorable Board:

A communication from the Lagoon No. 2 Property Owners Association asking to discuss maintenance policies is calendared for the Council meeting of January 21, 1963. The following is a statement of the current Town policy with the background of its formation which may be helpful to you.

The problem began about 1952 with the creation of Lagoon No. 1, and represented one of the most discussed problems when I came to Corte Madera in 1955. A Town policy had been adopted in 1954 making Town employees responsible for control of water levels in the system. The policy, which has been frequently re-stated, is that the Town will spend money on the Lagoons only to maintain or improve their flood control function except that a summer flushing program will be conducted. All persons inquiring at the Town Hall have been advised of this policy.

A great deal of money has been spent to accomplish this. During 1962, for instance, there was $2,159 spent for labor to check water levels and open and close gates. These expenditures have resulted in a flood control tax rate which has been as high as 20 cents and, of course, paid by every property owner in Town. Recently a maintenance project to increase the storage capacity of Lagoon No. 2 and clear the entrance to the outfall involved a total expenditure of approximately $700. A project was recently accomplished to excavate a portion of the Edgewater Lagoon which is also part of the Town's system. The Edgewater Inn in this case paid a portion of the expense.

If the bottom of Lagoon No. 2 should ever become silted to a depth of about 1½ feet higher than the present bottom elevation, dredging may be necessary. Dredging, any more extensive than the recently completed dragline work, would have to be done with floating equipment, and, after discussions with the Public Works Superintendent and several experts, it is estimated that the cost of such an operation would exceed $20,000. It may prove to be more economical to construct a pumping station.

As I have advised the Council in previous years, the Belvedere Lagoon is maintained and operated by a Lagoon Property Owners Association from assessments made to the various property owners and the city taxpayers do not carry any of the expense.

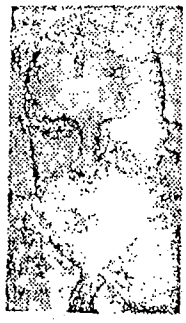
The Town's policy of flushing the water in the system regularly during the period of summer operation (April 15th to October 15th) is generous, I feel, since this benefits only the people living adjacent to the Lagoon but is paid for by all the taxpayers. Contrary to the misquotation in the Independent Journal, these Town expenditures have been in the cost of summer operations and not in beautification, and I do NOT feel that Town expenditures under present policy should be curtailed.

Very truly yours,

A. H. Brandow
Town Engineer and Manager

Attachment 1

AHB:nt
cc: All Councilmen



REPORTER'S NOTEBOOK

By WILLIAM L. EARLE

Lagoon Trouble Is Big Topic Around Corte Madera These Days

Corte Madera is plagued with lagoon troubles.

The town has two such bodies of water, both in the Madera Gardens tract. Their names, lagoon No. 1 and lagoon No. 2, are about as romantic as a dump, which some malcontents say they are (especially No. 2, the smaller one).

The latest troubles at the big lagoon started Sept. 5 when some alert waterfront home owners spotted — and smelled—sewage bubbling up from the depths near their backyards.

Corte Madera Sanitary District made two unsuccessful attempts to get at the ruptured, submerged sewer main, then called in a contractor to drain the lagoon. That job is still going on.

MEANWHILE, all is not rosy over at lagoon No. 2. The problem there is weeds, debris and stagnation. If you enjoy swimming or boating in an odoriferous swamp, it's just the place for your next outing.

One Corte Maderan who doesn't particularly care for polluted recreation is Vincent Misuraca, whose Birch avenue home is at the edge of the small lagoon.

"It stinks!" he cried at a recent meeting of the town council. "It's a disgrace to Corte Madera!"

Councilmen keep telling Misuraca and his fellow sufferers that the town's only responsibility for the lagoons is to maintain them as drainage — not recreational — facilities.

AND THE SUFFERERS keep telling the council the weed-choked lagoon is a potential flood hazard and an actual health menace.

"We can't afford to go out and hire a crew to clean that lagoon every six weeks, and I'm sure the town is trying to avoid that, too," said W. J. Miller, another sufferer.

All sorts of ways to correct the problem were advanced at last week's council session.

"Dredge the lagoon," said one.

"Keep the water circulating," said another.

"Use chemicals," urged a third.

AND SO ON. Surprisingly, no one suggested filling the lagoon with earth and forgetting it ever existed.

Carl Goolis, a resident on the big lagoon, said he and his neighbors once directed an inquiry to the University of California about possible ways of keeping the water free of weed growth.

The reply, said Goolis, mentioned "some kind of chemical that kills everything as far as five feet up the bank, and some kind of duck that is found only in northern areas and wouldn't survive here."

Wishing neither to destroy their waterfront gardens with chemicals nor import ducks doomed to die in the balmy Marin climate, residents of the big lagoon came up with a practical compromise.

Said Goolis: "We pull the weeds out by hand."

Town Pledges Only Routine Lagoon Care

Starting next month, the town of Corte Madera will perform routine winter maintenance of lagoon No. 2 in Madera Gardens to insure its satisfactory operation as a flood control and drainage facility.

This was the best that residents of the weed-clogged lagoon could be promised last night by [illegible] Manager Arthur H. Brandow.

We're doing what we think is necessary for flood control. Aside from that, the lagoon is your problem, Mayor Roger F. Morse told a group of about 15 citizens.

CONTENTION DISPUTE

Brandow disputed the delegation's contention that the weed growth in the lagoon is a flood hazard.

He said that during the winter maintenance season, Oct. 15 to April 15, town forces will keep the water at a low level, flush the lagoon one to three times a week and, periodically, clear away large debris such as lumber.

Flushing has been impossible in the last two months, Brandow declared, because of an earth "slip-out" in Corte Madera High Canal, where it passes through the Fifer industrial tract. The canal, into which the lagoon drains, is now clear, he said.

ASSURANCE GIVEN

Councilman Walter S. Long drew from Brandow assurance that he will seek council authorization to have the lagoon dredged if he deems it a necessary flood control measure.

At next Monday's council meeting, Brandow is scheduled to report on possible methods, chemical or otherwise, by which waterfront residents might rid the lagoon of weeds.

Only one member of the lagoon delegation expressed unqualified approval of the town's course of action.

"Personally," said Mrs. Lauronce J. Bacigalupi of 89 Lakeside drive, "I will be satisfied if the town will clear the debris, advise the residents on chemical treatment and let us

Sept. 1950

Attachment 1 2/5

...ce Madera, California
27, 1956

Issue #3

Fellow Lagoon Property Owner:

WEEDS, WEEDS, & MORE WEEDS, might well be the title of this issue.

To Bill Barekof 35 Lakeside, we all owe a vote of thanks for his efforts in tracking down the weed pest which is now infesting our Lagoon. Bill has checked with U.C. at Davis, four different chemical companies, Hopkins Marine Institute in Monterey, and the State Div of Fish & Game. Our "weed pest" is technically known as Ruppia Maritema, or "widgeon grass". At the present time, there is one chemical known to kill this grass; use of this chemical would render the waters of our lagoon deadly for a period of two weeks; your committee members in a meeting last night, have definitely ruled out the use of this chemical. THE ONLY WAY TO REMOVE THIS GRASS AT THE PRESENT TIME IS TO PULL IT OUT.

Your Committee met Tuesday night to discuss the grass situation, and how we might best get rid of it. We have come up with the following recommendations, and with the co-operation of all "Lagoonites" and their friends, hope to start the ball rolling at 10 AM, Saturday, June 30th.

1. It is our intention to have two out-board motor boats sweep the lagoon with a cable dragging between them, we definitely do not know, but hope by this method to cut the grass loose and allow it to float over the surface of the lagoon. This sweeping can be accomplished by four men in two boats.

2. HOW YOU CAN HELP: It is imperative that as many as possible on the lagoon be available to scoop up this grass and deposit it in a central location so that we may haul it away. If you have anything that will float, please load it with all floating grass and deliver this grass to the north end of the lagoon (next to the main locks). If you think it might be easier to move the cut grass through your property, please do so; just deposit all grass on the curb in front of your house. Through the courtesy and cooperation of the contractors living on our lagoon, we will have the use of two of their trucks. These trucks will pick up and haul away all the grass we can collect.

   We would like to point out that the grass now accumulating in our lagoon is not only a bane to good sailing and swimming, but could in the very near future turn into an unhealthy sanitary condition (flys and mosquitoes breed in the grass, only while it is in the water). We must lick this problem before it becomes a problem for the Health Department.

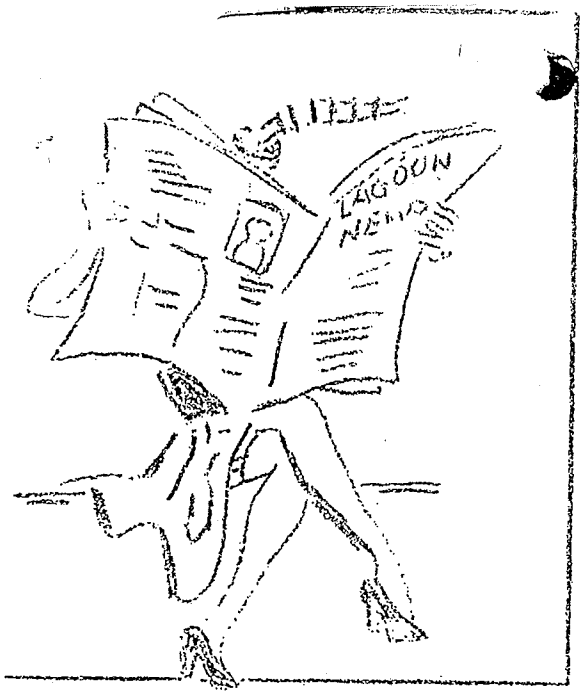
3. The possibility of allowing our water to stand too long and become warm, has been discussed, and it has been agreed that this might also be a factor in the sudden upsurge in the growth of this particular weed. Mr. Brandow, our City Engineer has been cooperating 100% with your committee, and he has agreed to give the Lagoon a complete flushing on Monday. It is our intention to have this flushing accomplished at least once a month thereafter.

AND THERE YOU ARE! We will be the first to admit that this is not a sure cure, but we do feel it is worth a try; with your cooperation, it can at least be a good start. SEE YOU ALL OUT THERE SATURDAY MORNING AT 10 AM. THANKS!

YOUR COMMITTEE

(Memo to Harry Fayter: Sorry and our apologies for that pile of weeds behind your Place Harry; they will be removed Saturday).

Attachment 1 3/c



REPORT TO OUR FELLOW [illegible]OON PROPERTY OWNERS 5/23/56

On May 21st, your selected representatives (as indicated from the results of the post cards you turned in), Mr. Melvin Howe; Mr. W. G. Damerow; Mr. William Richardson; Mr. William Sleight; Mr. S. J. "Bud" Wentworth (Robert Commins, representative on Council Crest was unable to attend this meeting), met and discussed the following points:

S. J. "Bud" Wentworth was elected chairman of this representative committee; and it was decided that Mr. Wentworth would make all contacts with the City Council, working through Mr. Brandow the City Engineer.

It has been decided by your representatives, that any Lagoon problems or complaints should be directed to Mr. Wentworth or to other members of the committee. These problems or complaints will be filtered by the Committee; any which we then feel warrant action by the City Council or City Engineer, will be presented through Mr. Brandow by our representative Mr. Wentworth. We sincerely trust that this arrangement will meet with the approval of all Lagoon property owners, and that they will abide by it. This arrangement of course, pertains only to Lagoon Problems.

Each committee member is to contact those in his neighborhood concerning the proposed use of Bluestone in the Lagoon for this summer season. We have already worked out an agreement with the City Engineer whereby they will open the gates only to admit water to our lagoon to maintain the level, rather than flush the lagoon completely. It is our intention to try and have the lagoon waters treated with Bluestone prior to June 1st. Within five (5) days after the treatment is completed it is our intention to have the waters tested for bacteriological count.

It was decided that the above treatment and tests could be financed through a voluntary contribution of $2.00 by each Lagoon Family. The amount obtained should roughly cover the costs of approximately 300 lbs. of Bluestone and the fee for testing the water. The Blue stone could be applied to the lagoon by volunteers.

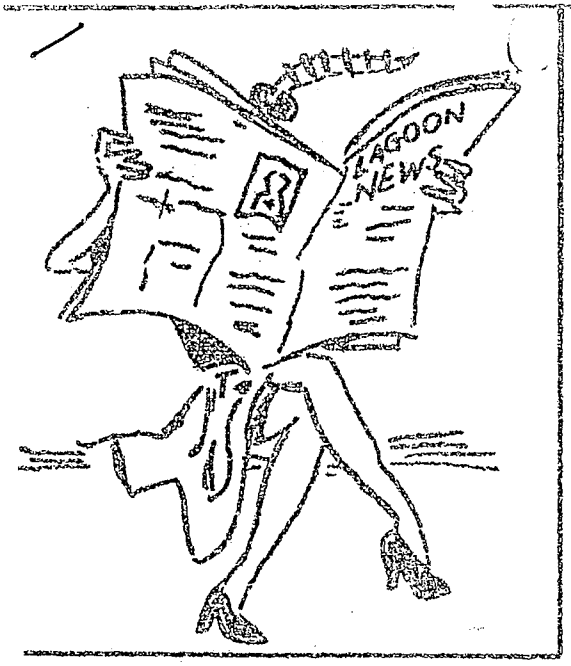
Mr. William G. Damerow was elected Treasurer of the Committee by unanimous vote. It would be the duty of Mr. Damerow to handle all monies received through the above suggested Voluntary Contribution.

In our discussion, not one member of the Committee could see any reason why we can not establish an equitable, workable and cooperative program with the City Council. We wish to stress the fact that to our City Council (who represent not only us, but all the residents of Corte Madera), our "Lagoon" is to them, primarely a "Catch Basin". I think that we will all agree that in the Winter, this should be strictly a "Catch Basin";however, with our own resources and the help and cooperation of our City Council, there is no reason why this "Catch Basin" can not becar "Lagoon" in the Summer.

We would also like to point out that the treating of the Lagoon Waters with Bluestone, will not "purify" the waters; Bluestone will cause all sediment to float to the bottom; will tend to kill off any grass growing in the lagoon, and will in general greatly enhance the appearance of our Lagoon. It has been suggested that all dog owners do everything possible to keep their dogs out of the Lagoon waters.

In times of necessity, it may not always be possible to notify each resident prior to the dropping of Lagoon water levels; this has happened within the past two days; Mr. Brandow was forced to drop the level in order to drain the low level canal and make necessary repairs on the gate to this canal. In the future, we hope to have the information in time to pass it along.

"We would appreciate your reactions to this new "set-up"! Attachment 1 4/5



L - A - G - O - O - N N - E - W - S

Issue No. 6
9/22/59

Fellow Lagoon Property Owners:

With this issue, we would like to welcome to the fold, the informal Lagoon Association of home-owners of our Lagoon #2.

Recently, several of our members were invited by members on Lagoon #2 to sit in and discuss with them the methods by which we have cleaned our lagoon of grass& and generally enhanced and maintained the waters of the Lagoon. Many of the members now living on Lagoon #2 are of the opinion that the Town of Corte Madera is responsible for the cleaning and maintaining of their Lagoon.

As most of us on Lagoon #1 already know, The Town of Corte Madera is interested only in our Lagoon as a method of FLOOD CONTROL; they are not interested in maintaining these Lagoons for the recreational uses of the residents living on the Lagoons. After many fruitless and some fruitfull sessions with various members of by-gone councils, we who reside on Lagoon #1 have accepted the inevetable; we took matters into our own hands, and proceeded to clean and maintain our own lagoon. We too at one time were plagued with the growth of Widgeon grass. We have licked the grass through a community effort, everyone pitched in and the job was done. We now carefully watch our Lagoon; at the first sign of a return of this grass, we will again pitch in and clean it out. This was not done entirely on our own; the Town of Corte Madera furnished us with the Town boat, and also had fabricated at their own expense what we fondly refer to as "The Reis Hay Rake" (named after our good friend, Frank Reis of the Corte Madera Street Department). We have accepted the fact that it is the duty of the Town of Corte Madera to maintain these Lagoons in such a manner that they will serve their purpose as a Flood Control method for all the low lands surrounding us. We have also accepted the fact (until such a time as it might be changed) that it is up to us to maintain our lagoon for our own recreational use. We pass this along only for the information of the new residents on Lagoon #2.

Now to new things: Recently, and we have to admit that we read about in in the Independent Journal Newspaper, it was brought to our attention, that the Town of Corte Madera had returned the Proposed DEED TO TOWN DRAINAGE SYSTEM by Billings-Rents (Lakeside Development Company) for some changes pending acceptance by the Town.

Through the cooperation of The Lakeside Development Company and Mr. Art H. Brandow, Town Engineer and Manager, we were able to obtain copies of the document and correspondence in question. Copies for your information, are attached hereto.

Should any of you feel that the changes requested in this document are in any way infringing on our rights, etc., your views would be appreciated. It might be worth a general meeting to hash this out. Please contact any of the persons listed below.

Sincerely,

S. J. Wentworth - 39 Lakeside Drive WAbash 4-1241
Vincent Misuraca - 50 Birch Street WAbash 4-4400
Capt. Standish Green - 18 Chickasaw Ct. - Wa 4-3759
Hal Clark - 53 Lakeside Drive - WAbash 4-2542
Bob Morehouse - 101 Lakeside Drive - WAbash 4-0157

Attachment 1 5/5