

VILLAGE OF OSWEGO

Stormwater System Report

By: Gary D. Adams, Village Administrator

The Village of Oswego, like many other communities, has been faced with many complaints and problems concerning wet bottom detention areas that were constructed within the various developments in the last few years. Many of these have been turned over to a Home Owners' Association (HOA) to maintain. In almost every case, the HOA has little or no experience or training to handle or deal with these issues.

The Board hosted a community meeting devoted entirely to the pond issue and the associated problems and complaints. The attendance at that meeting was good and we heard from many of the Home Owners Associations as well as individual citizens. This was an excellent first step in airing all of the complaints, problems and issues associated with many of these ponds. Many of the problems or complaints were similar: low water levels, pond isn't retaining water, weed and algae growth and lack of maintenance. One thing is for certain, there is no easy or inexpensive solution to the problems. These ponds or lakes were created to assist with stormwater issues and since they were constructed in areas where ponds did not previously exist the developer had to create some type of impervious sub-surface liner to hold or retain the water. These artificial ponds will always be susceptible to leaking if the liner is penetrated in any way.

Shortly after this meeting, Public Works Director, Jerry Weaver, Village Engineer, Brian Schiber, and I visited each subdivision and pond mentioned. Mr. Schiber took photographs of each pond that we visited and I have provided copies of them as Attachment "H" in this report. We have since revisited these ponds a second time, and re-photographed some of the ponds that

had low water levels to determine if they were losing water due to evaporation or problems with the liner.

One important fact that is sometimes forgotten in all of the discussions concerning these wet ponds, swales, or dry detention areas is that they are all part of the overall stormwater drainage system for the Village. The purpose of each of these areas is to hold or detain water during a storm event so we don't flood residential or commercial property. The plan for each subdivision may be different, but clearly the main purpose of each area is to provide relief during storm events and prevent flooding. It was not to provide lake front property. Unfortunately in some cases that has become the focus instead of how these areas work in the storm water system.

In addition to our site tour of each pond, we have met personally with two different Home Owners Association to discuss their particular problems or issues. In both cases, we were able to provide some potential recommendations for possible solutions to some problems as well as helping them gain a better understanding of the stormwater systems in each area.

In doing some of the research for this report, it became apparent that the policies in existence prior to 2004 were not nearly as thorough or complete as they are today. The subdivision regulations in effect prior to March 18, 2004 (reference Attachment "A"), contained one sentence pertaining to the construction of detention ponds, "Construction of detention ponds shall be in accordance with the Metropolitan Sanitary District of Greater Chicago requirements." I could not find a copy of these requirements in Village Hall. Based on the regulations in effect at that time, the Village had very few guidelines or requirements for the construction of detention ponds. Additionally, prior to the current regulations that were adopted in 2004, the Public Works Department had no part in the plan review process or in the construction observation or inspection of these ponds.

The entire process has changed dramatically since 2004 when the current regulations became effective (reference Attachment “B”). Currently the entire engineering plans for a project, including the storm water drainage system, are reviewed thoroughly by the Village Engineer and the Public Works Director prior to the issuance of any construction permits, but they are not currently involved in the construction observation and inspection process.

As mentioned earlier, these drainage systems are all part of the engineered stormwater facilities which are designed to reduce flooding and improve water quality. As development occurs, the land is covered by roads, driveways, homes and other hard surfaces which do not allow stormwater to percolate back into the ground. Based on comments made at the Committee of the Whole by citizens and HOA representatives and on our observations while viewing the various ponds, we have identified some common problems and issues. These are by no means all inclusive, but are a fair representation of problems common to many of the ponds.

Problems, Issues, Concerns, Causes

- Algae and weed growth
- Pond depth too shallow
- Sedimentation
- Mowing to water’s edge
- Lawn fertilizer draining into ponds
- Evaporation
- Lack of proper maintenance
- No long-term maintenance plan or budget
- Insufficient funding mechanism for long- and short-term maintenance
- Lack of training on pond maintenance prior to HOA assuming responsibility

- No HOA to assume responsibility
- New home buyers' expectation of purchasing "lake front" property

The algae and weed growth are primarily caused by three factors. The first is pond depth. Many of these ponds are too shallow which encourages plant growth when the sunlight intensifies. The second issue has to do with mowing practices. Most homeowners or lawn maintenance services mow the grass down to the edge of the water, which means that grass clippings will frequently fall into the water. This aids in the growth of algae and aquatic weeds. The final issue deals with fertilizer usage. Again, the individual homeowner or lawn service wants the grass to be thick and green. To accommodate this, lawn fertilizer is applied several times per year. Each time it rains or the lawn is watered, some of that fertilizer drains naturally down into the water. The fertilizer has the same impact on the aquatic weeds as it does on grass: it makes them grow. Therefore, many of the lawn maintenance practices of the individual homeowner or the Home Owners Association may be adding to or magnifying the problem.

One frequent complaint at the Committee of the Whole meeting had to do with water levels. Individuals felt that because water levels were down, the ponds were leaking. That may be the case in some instances, however, evaporation is also a factor in the loss of water from each body of water. I had asked Mr. Schiber to see if he could locate some data on evaporation rates. He was successful and he did some calculations on evaporation rates for our area. For the purposes of this report, he used the Gates Creek West basin as an example. This pond is approximately 3.6 acres in size. On an average day, this pond will lose approximately 7,300 gallons of water a day to evaporation. If that pond went 30 days without rain, it would lose approximately 219,000 gallons of water. This past spring we were without significant rainfall for several weeks and this contributed to the water levels in all of the ponds. Therefore, most of the ponds weren't actually leaking but the water level was lowered because of evaporation. Additionally, some of these

ponds have aerators that operate continuously. These convert water to a fine mist or spray. This adds to the evaporation rate on these ponds.

Most of the Home Owners Association receive ownership of these storm drainage systems with little or no training or information. They also take over these ponds without a maintenance plan in place or budget and are usually without a long-term funding source to pay for major projects when they need to be completed.

Added to this are new homeowners who purchase “premium lots” or what they consider “water front property” with the expectation that it will always remain pristine. Most do not realize or understand that these small bodies of water require constant and continual maintenance, which can be expensive and some will eventually require major renovation projects which can be even more expensive.

All of the above has resulted in Home Owners Association being overwhelmed with maintenance and capital expenditures, unhappy homeowners, and the Village being inundated with complaints. In each case, the stormwater drainage systems, or ponds, are owned either by a HOA or the developer which means these systems are private property. As a result the Village is limited in the assistance we can provide. Added to the above mentioned problems there is one unique situation in Fox Chase where the storm drainage system was constructed with three wet bottom ponds. This was then deeded to the Fox Chase Homeowners Association, which was apparently never formed. Therefore, we have three ponds that are part of the storm water drainage system for Fox Chase that have received little or no maintenance since they were constructed. Two of these ponds are overgrown in weeds and have numerous invasive plants growing in the water. It is likely that both of these ponds have also had a significant amount of sedimentation drain into them. The middle pond is in fairly good condition as the homeowners that live there have been mowing approximately half of the pond area. However, to properly

function as wet bottom detention areas, the other two will have to be completely reconstructed. The cost for this project could be several hundred thousand dollars. Even if the ponds were reconstructed, the long-term maintenance issue still needs to be addressed since there is no HOA in place. If the Village were forced to take these over, there would be a very large budgetary impact for the reconstruction of the two ponds as well as the yearly maintenance costs. The rest of the taxpayers in Oswego would be paying to reconstruct and maintain two private ponds. The resolution to this issue will require cooperation between the developer, the property owners and the Village.

It should also be pointed out that the issues and problems addressed in this report are by no means all inclusive. There are undoubtedly other problems and concerns that have not been mentioned. This report has attempted to address those issues that came up at the Committee of the Whole or during other meetings with staff and the Home Owners Association representatives.

The second part of this report will focus on suggestions and recommendations. There is an old saying that says, “Hindsight is always 20/20,” and another that says, “Experience is a great teacher.” Both of these apply to this particular situation. Certainly if we had known 15 years ago what we know today about these stormwater systems, the Village may have done some things differently. Unfortunately, we can’t go back and change what’s been done, but we can certainly learn from what’s happened.

After reviewing all that’s been presented, meeting with several representatives of Home Owners Association and personally viewing most of the wet detention areas in the Village, the following recommendations are suggested.

Staff has been reviewing and drafting proposed revisions to the subdivision regulations covering a wide variety of topics, for several months. Included in this report (as Attachment “C”) is the latest revised draft of that proposal. It should be noted that the section dealing with

stormwater drainage, especially wet bottom ponds, has been dramatically revised. Attachment “D” provides a comparison of the policies that were in effect in November 1973 with those approved in 2004 with the new, proposed revisions.

- The emphasis in the current policies is on wet bottom ponds. It is proposed that the emphasis would change from wet bottom ponds to dry bottom detention areas. The planning for these dry detention areas should be done in conjunction with the Oswegoland Park District to maximize their location for possible recreational use. Wet bottom ponds would only be permitted if they met one of three proposed criteria:
 - a) an exceptionally high water table existed at the location;
 - b) they were spring fed;
 - c) they had access to some other source of continual water supply. However, the use of a private well for water supply shall not be allowed.
- Any wet bottom pond meeting one of the above criteria must have a minimum depth of 6’ with a 10’ safety ledge. Attachment “E” is an example of a wet detention basin site plan under the current ordinance. There are also examples of wet and dry basins as well as a naturalized basin.
- Any wet bottom pond constructed must have a shoreline buffer zone constructed with native aquatic and/or wetland plantings. This buffer zone shall be a minimum of 5’ in width and it is further recommended that this buffer area also be a “no mow” zone. Attachment “F” is a typical cross section example of this.
- Any wet bottom pond or stormwater wetland detention area constructed shall be maintained by the developer for a minimum of 5 years after substantial completion of the pond or wetland area. A wetland area typically includes a small channel for water flow

with the bottom and slopes planted with native wetland plants that provide pollutant filtering capabilities.

- All developers shall be required to provide to the Village a separate bond or letter of credit for all stormwater improvements that include wet bottom ponds or a wetland detention area. The amount of the bond or letter of credit related to the wet bottom pond or wetland detention area shall be retained by the Village until the 5 year maintenance period has expired.
- Prior to the transfer of the stormwater improvements to the HOA, the developer shall be required to do the following:
 - a) Notify the Public Works Department and Village Engineer of the pending transfer;
 - b) Submit to the Home Owners Association a maintenance plan and estimated budget for the wet bottom system;
 - c) A site plan that includes all stormwater facilities and types and locations;
 - d) A set of “as built” drawings for those stormwater facilities; and
 - e) A sign-off of the plans and construction by a Geo-Technical engineer.
- The legal entity actually selling the lots should be required to provide all potential buyers with written notification that the HOA will ultimately assume financial responsibility for the maintenance of the stormwater system including any wet bottom structures.
- Require the establishment of a backup Special Service Area (SSA) for all developments. This will ensure that a sufficient funding source is in place for storm system improvements if the need arises.

In addition to the proposed changes to the subdivision regulations, which deal primarily with the new future developments, there are some suggestions that pertain to current subdivisions with wet bottom structures.

To help deal with algae and weed growth, the Home Owners Association should consider planting the native aquatic plants around each wet bottom pond and instituting a “no mow” zone in the same area. These plants filter out a great deal of the stormwater run-off which includes fertilizer that has been applied to the grass. This planted area will also deter ducks and geese from using these ponds.

Each Association should develop a management plan for their stormwater system. Attachment “G” is a sample “Best Management” practices guide that was developed by the Lake County Stormwater Management Commission for Home Owners’ Associations and property owners and was provided to me by a homeowner that lives in River Run. This guide includes a sample maintenance schedule, plan and cost estimates. A copy of this should be provided to each Home Owners’ Association in Oswego. I believe that this will be very useful to any Association dealing with the maintenance of these wet bottom areas.

The Village will also work with each Association to provide guidance, assistance, and recommendations where feasible or possible. Staff has already started providing this assistance when requested. We will do all that we can to help the various Home Owners Associations to deal with their storm water detention problems. If nothing else this report has attempted to highlight the problems and issues surrounding the wet basins and suggest some possible solutions and guidelines for future ponds and those in existence today.