

## APPLICATION PACKET

The Application Packet enclosed should include all of the following information:

### Lake Enhancement Application Information

- Cover Letter
- Lake Enhancement Fact Sheet
- Application Form
- Petition
- Forming a Lake Association
- Nonstock Corporation Form
- Sample Articles of Incorporation
- Model Bylaws
- Bylaws TriLakes Association
- Business Registration Guide Table of Contents Page

### Additional Included Information

- Aeration Companies
- Newport News Citizen's Guide: Stormwater and Lake Management

(If any of the above information is altered or missing, please contact Melinda Sparks 926-8336)



# City of Newport News

Department of Engineering  
2400 Washington Avenue  
Newport News, Virginia 23607



Phone: (757) 926-8611

Fax (757) 926-8300

**To:** Lakefront Property Owner  
**From:** Environmental Scientist  
**Subject:** Lake Enhancement Program

Thank you for expressing an interest in the Lake Enhancement Program. We are pleased with the overwhelming response from our citizens and are working hard to develop and expand the program to keep up with the increasing demand.

The Lake Enhancement Program provides property owners adjacent to stormwater lakes an opportunity to help improve the water quality and aesthetics of their lake. The program is designed as a partnership between the City and the lakefront property owners. In order to qualify for the program, interested lake groups must meet the following criteria.

1. The lake must be a regional stormwater BMP that accepts public drainage.
2. There must be a lakefront property owner's association that has the authority to assess the adjacent property owners. Some information is included in this packet. Refer to Title 13.1, Chapter 10 - Virginia Nonstock Corporation Act of the *Code of Virginia* for more information or contact the State Corporation Commission.
3. A minimum of seventy-five percent (75%) of the adjacent property owners abutting the stormwater lake must agree to participate in the enhancement project(s). To expedite the application process, have at least 75% of the adjacent lakefront property owners sign the enclosed petition form.
4. Access to the lake must be available to City crews and the City's contractor(s) during construction of the lake enhancement project(s).

Stormwater lakes that meet these requirements will be ranked, following an analysis by the City, to evaluate the existing water quality conditions. Lake Enhancement projects will begin on the highest-ranking lakes pending receipt of any applicable permits and the availability of funds.

I have enclosed a fact sheet that explains the Lake Enhancement Program, the application form and petition, and information on forming a lake association.

In order to be considered for participation in the program, please submit the following to the above address:

- Completed application form
- Completed petition signed by 75% of lake front property owners
- Copy of Certificate of Incorporation from the State of Virginia
- List of current lake association officers and their contact information

If you have any questions about the program or the enclosed materials, please contact me at 926-8336.

Sincerely,

Melinda Sparks  
Environmental Scientist

# Lake Enhancement Program

The rehabilitation of stormwater lakes is essential to the health of our streams, rivers and the Chesapeake Bay. Every year the stormwater lakes in Newport News show signs of water quality stress such as algae blooms, duckweed infestations, siltation (excessive shallowness), and fish kills. Stormwater pollution is the reason. Stormwater is the water that flows over land during and immediately after it rains. When it rains, fertilizers, pesticides, motor oil and litter run off yards, sidewalks and streets and into storm drains that lead to stormwater lakes and other waterways. Scientists estimate that more than half of the pollutants entering our waterways is carried by stormwater runoff.

The Lake Enhancement Program rehabilitates and restores stormwater lakes for improved water quality and enhanced aesthetics. The program employs dredging to remove accumulated sediment, aeration systems to add oxygen and circulate the water, and aquascaping the shoreline with native aquatic and wetland vegetation. By understanding these lake enhancement techniques, lakefront residents can participate in the improvement of not only their lake's water quality, but also the quality of our other waterways.

## STORMWATER FACTS

- *Anything* that is poured or dumped into a street gutter or storm drain will be carried by stormwater runoff to a nearby lake or waterway.
- More than half of the nation's 2,000 watersheds are facing moderate to serious water quality problems, largely due to polluted runoff.
- Algae blooms, duckweed infestations and other nuisance vegetation are the result of excess nutrients. Rain and irrigation carry nutrients off lawns and into stormwater lakes.
- One pound of phosphorous can generate 500 pounds of weed and algae growth in your lake. Lawn fertilizers are a key source of phosphorous.
- Studies show that vegetated stormwater lakes have a pollutant removal capacity that is as much as five times higher than unvegetated ones.
- Stormwater lake rehabilitation and retrofit programs have demonstrated that the negative effects of stormwater pollution can be reversed.

## IS YOUR LAKE ELIGIBLE?

Private, *residential stormwater lakes* that accept public drainage are eligible to participate in dredging, aeration and aquascaping projects. The City will dredge at no cost to the lakefront property owners. However, the lakefront property owners must cost share with the City for aeration and aquascaping on a 50/50 basis. A minimum of 75% of the adjacent lakefront property owners must agree to the enhancement project.

Private, *non-residential stormwater lakes* that accept public drainage are eligible to participate in dredging projects only. The adjacent lakefront property owners must cost share with the City on a 50/50 basis.

Private lakes that *do not accept public drainage* are not eligible to participate in the Lake Enhancement Program.

## LAKE ENHANCEMENT PROJECTS

### Lake Enhancement Dredging Projects

Dredging deepens the lake to provide more storage capacity and improve drainage. It also removes the layer of the most highly enriched materials from the lake's bottom. Removing this pollutant "bank" prevents nutrients and other pollutants from releasing back into the water and contributing to water quality problems. There are two types of lake enhancement dredging projects.

- 1. Contract Dredging Projects.** In this type of dredging project, the City's dredging contractor operates from within the lake using barge-mounted dredging equipment. This type of dredging project is usually reserved for those lakes that are heavily silted throughout the lake or that have very limited access from the shoreline.
- 2. Spot Dredging Projects.** The City's Wastewater crews conduct spot dredging projects from the shoreline using a long-reach excavator and tandem dump trucks. This type of dredging project is useful for those lakes with minimal siltation or siltation primarily in the coves. Ample access to the shoreline is required.

### Lake Enhancement Aeration and Aquascaping Projects

The City partners only with lakefront property owner *associations* to perform lake enhancement aeration and aquascaping projects.

- The addition of aeration systems improves water quality and creates an environment that is not conducive to algae, weeds and odors. Aerators add oxygen and circulate the water.
- Aquascaping, or landscaping the shoreline with aquatic plants, returns the stormwater lake to a more natural state. Aquatic plants provide nutrient uptake from both the water and the sediment.

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## PROGRAM REQUIREMENTS

### Lakefront Property Owners

When participating in lake enhancement aeration and aquascaping projects, the lakefront property owners' association shall:

- Execute a Lake Enhancement Partnership Agreement with the City;
- Pay the aeration equipment's monthly electrical bills;
- Plant, maintain and replace the shoreline vegetation;
- Pay the City an assessment, which is based on the property owners' fifty percent (50%) share of the total project construction costs for aeration and aquascaping;
- Conduct water quality testing a (minimum of four (4) tests per year is required); and
- Perform a minimum of two (2) workdays per year to weed the shoreline vegetation and remove shoreline litter and debris.

### City of Newport News

For lake enhancement dredging, aeration and aquascaping projects, the City shall:

- Acquire all aeration and aquascaping materials and equipment;
- Install the aeration systems and maintain them in good working order;
- Provide water quality test kits and technical support to the adjacent lakefront property owners; and
- Dredge lakes to a depth consistent with the standards contained in the Department of Engineering's Design Criteria Manual.



# LAKE ENHANCEMENT PROGRAM APPLICATION FORM

CITY OF NEWPORT NEWS  
DEPARTMENT OF ENGINEERING  
STORMWATER MANAGEMENT DIVISION  
2400 WASHINGTON AVE  
NEWPORT NEWS VA 23607  
(757) 926-8611



## I. NEIGHBORHOOD INFORMATION

LAKE NAME: \_\_\_\_\_

LOCATION/AREA: \_\_\_\_\_  
(PLEASE INDICATE TWO STREETS THAT BORDER LAKE)

NEIGHBORHOOD/DEVELOPMENT NAME: \_\_\_\_\_

LAKEFRONT ASSOCIATION CONTACT PERSONS:

OFFICER OF LAKEFRONT ASSOCIATION

ADDITIONAL CONTACT PERSON WITHIN ASSOCIATION

NAME \_\_\_\_\_

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

TITLE (IF APPLICABLE) \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

ZIP CODE \_\_\_\_\_ PHONE NUMBER \_\_\_\_\_

ZIP CODE \_\_\_\_\_ PHONE NUMBER \_\_\_\_\_

IS THERE A LAKEFRONT PROPERTY OWNER'S ASSOCIATION?  YES  NO

IF YES, HOW MANY HOMES/LAKEFRONT PROPERTIES DOES IT REPRESENT? \_\_\_\_\_

IF YES, HOW MANY HOMES/LAKEFRONT PROPERTIES ARE MEMBERS? \_\_\_\_\_

DOES THE ASSOCIATION HAVE DUES?  YES  NO IF YES, HOW MUCH? \$ \_\_\_\_\_ PER \_\_\_\_\_

OFFICAL ADDRESS OF LAKEFRONT ASSOCIATION:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ARE THERE ANY MEETING FACILITIES AVAILABLE IN YOUR NEIGHBORHOOD SUCH AS A REC CENTER OR CLUBHOUSE?  
 YES  NO IF YES, DESCRIBE \_\_\_\_\_

## II. LAKE & WATER QUALITY INFORMATION

THE GROUP WOULD LIKE TO PARTICIPATE IN THE FOLLOWING LAKE ENHANCEMENT PROJECTS:

DREDGING ONLY  DREDGING, AERATION & AQUASCAPING  AERATION & AQUASCAPING ONLY

PLEASE RANK YOUR GROUP'S CONCERNS WITH RESPECT TO YOUR LAKE.  
(RANK ITEMS FROM 1 TO 10, WITH 1 HAVING THE HIGHEST PRIORITY TO YOUR GROUP.)

\_\_\_\_\_ ALGAE

\_\_\_\_\_ NUISANCE VEGETATION (DUCKWEED, WATERMEAL, ETC.)

\_\_\_\_\_ SEDIMENTATION (LAKE FILLING IN), PLEASE CHECK ONE:

MOSTLY IN COVES  THROUGHOUT LAKE

\_\_\_\_\_ LITTER AND DEBRIS ACCUMULATIONS

\_\_\_\_\_ EROSION

\_\_\_\_\_ FLOODING AREAS: \_\_\_\_\_

\_\_\_\_\_ FISH KILLS APPROX. DATES: \_\_\_\_\_

\_\_\_\_\_ MOSQUITOES

\_\_\_\_\_ STRUCTURAL PROBLEMS (CRACKED PIPES, LEAKING RISER, ETC.)

PLEASE DESCRIBE: \_\_\_\_\_

OTHER: \_\_\_\_\_

PLEASE DESCRIBE: \_\_\_\_\_

FOR DEPARTMENT USE ONLY

BMP ID # \_\_\_\_\_ CBPA: **Y N** DRAINAGE AREA: \_\_\_\_\_ AC SURFACE AREA: \_\_\_\_\_ AC SCREENING PROGRAM? **Y N**



# LAKE ENHANCEMENT PROGRAM APPLICATION FORM



WILDLIFE PRESENT IN YOUR LAKE (CHECK ALL THAT APPLY)

- DUCKS                       MUSKRATS                       OTHER: \_\_\_\_\_
- GEESE                         SNAPPING TURTLES                      DESCRIBE: \_\_\_\_\_
- FISH                             WADING BIRDS

IF YOU CHECKED GEESE, DO THE RESIDENTS FEED THE GEESE?       YES       NO

DESCRIBE YOUR LAKE'S SHORELINE \_\_\_\_\_

(CHECK ALL THAT APPLY AND ESTIMATE THE PERCENT OF THE TOTAL SHORELINE.)

- MOWED GRASS TO WATER'S EDGE \_\_\_\_\_ %
- AQUATIC VEGETATION \_\_\_\_\_ %
- WOODY VEGETATION (TREES & SHRUBS) \_\_\_\_\_ %
- BULKHEADS/RETAINING WALLS \_\_\_\_\_ %
- RIP RAP (LARGE ROCKS) \_\_\_\_\_ %
- DOCKS/PIERS \_\_\_\_\_ %
- OTHER \_\_\_\_\_ %  
(DESCRIBE) \_\_\_\_\_

DESCRIBE THE PRIMARY RECREATIONAL USES, IF ANY.

- BOATING       FISHING       NONE       OTHER \_\_\_\_\_

### III. ADDITIONAL INFORMATION

HOW DID YOU FIND OUT ABOUT THE LAKE ENHANCEMENT PROGRAM?

\_\_\_\_\_  
\_\_\_\_\_

WHY IS YOUR NEIGHBORHOOD/LAKE A GOOD CANDIDATE FOR THE LAKE ENHANCEMENT PROGRAM.  
(ATTACH ADDITIONAL SHEETS IF NECESSARY)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**REQUIRED DOCUMENTATION FOR APPLICATION TO BE PROCESSED:**

- COPY OF CERTIFICATE OF INCORPORATION FROM THE STATE OF VIRGINIA
- COPY OF THE LAKE ASSOCIATION BYLAWS
- PETITION SIGNED BY 75% OF LAKE FRONT PROPERTY OWNERS
- LIST OF CURRENT LAKE ASSOCIATION OFFICERS AND THEIR CONTACT INFORMATION
- LIST OF CURRENT LAKE ASSOCIATION MEMBERS AND THEIR ADDRESSES

RETURN COMPLETED APPLICATION AND REQUIRED INFORMATION TO:

ENVIRONMENTAL SCIENTIST  
 CITY OF NEWPORT NEWS  
 DEPT OF ENGINEERING  
 DIVISION OF STORMWATER MANAGEMENT  
 2400 WASHINGTON AVE  
 NEWPORT NEWS VA 23607

**NOTE:** THERE MUST BE A VALID, REGISTERED LAKEFRONT PROPERTY OWNER'S ASSOCIATION IN PLACE THAT HAS THE AUTHORITY TO ASSESS PROPERTY OWNERS, PRIOR TO ACCEPTANCE INTO THE LAKE ENHANCEMENT PROGRAM.



# Forming a Lake Association

One of the most valuable and productive things lakefront residents and property owners can do to protect and improve the quality of their lake is to form a lake association. ∞

## BENEFITS OF HAVING A LAKE ASSOCIATION

- An organized group can initiate projects and programs of long-term significance that will lead to a cleaner lake.
- The “best management practices” that improve water quality cannot be implemented by government alone. To be truly effective it takes the participation of Lake Associations.
- A formally organized group can have more credibility than any one individual and can be a strong voice for your lake within our community.
- A Lake Association can help build a sense of community and create more opportunities for education by creating an information network focused on protecting and managing your lake.

## SOURCES OF INFORMATION

### VIRGINIA STATE CORPORATION COMMISSION

- Contact the Corporate Information Section at 804/371-9733 or visit their web site at: [www.state.va.us/scc/division/clk/index.htm](http://www.state.va.us/scc/division/clk/index.htm)
  - The information available on the web site includes laws, regulations, frequently asked questions, fees and forms.
  - Their *Business Registration Guide* is available on the web site or by calling 804/371-9733.
- The State Corporation Commission will also provide copies of Articles of Incorporation from registered associations. A list of Homeowners' Associations in Newport News is available from the City's Intergovernmental and Community Relations office at City Hall, call 926-8000.

## OTHER SOURCES OF INFORMATION

### CODE OF VIRGINIA

- Title 13.1 Corporations, Chapter 10 Virginia Nonstock Corporation Act - Article 1 - General Provisions

### University of Wisconsin - Extension Lakes Management Program

- The UW-Extension at Stevens Point publishes the *Lake Leader's Handbook*. This handbook concentrates on the "who, what, why, where and how" of running a lake association from start-up to day-to-day business. Covers an extensive range of subjects including insurance, motivating people, working with government and more.
- The *Handbook* can be purchased from the UWEX-Lakes Partnership, University of Wisconsin, 1900 Franklin Street, Stevens Point, WI 54481. Call 715/346-2116 for more information or visit their web site at: <http://www.dnr.state.wi.us/>.

### Minnesota Lakes Association

- The Minnesota Lakes Association publishes the *Guidebook for Lake Associations*, a loose-leaf notebook of information to help lakefront groups get organized and function effectively.
- The *Guidebook* can be purchased from The Minnesota Lakes Association, P.O. Box 321, Brainerd, MN 56401. Call 800-515-5253 for more information or visit their website at <http://mnlakes.org/>.

### Washington State Department of Ecology

- The Washington State Department of Ecology publishes "*A Citizen's Manual for Developing Integrated Aquatic Vegetation Management Plans*." This manual specifically deals with controlling nuisance aquatic plants
- Contact Ecology publications at (360) 407-7472 or E-mail: [jewi461@ecy.wa.gov](mailto:jewi461@ecy.wa.gov). Also available on the web - <http://www.ecy.wa.gov/programs/wq/plants/management/manual/index.html>

### Other

- *Robert's Rules of Order* is a comprehensive manual of parliamentary procedure that covers everything association Presidents and members need to know about running meetings. *Robert's Rules of Order* is available at most bookstores and public libraries.

COMMONWEALTH OF VIRGINIA  
STATE CORPORATION COMMISSION

GUIDE FOR ARTICLES OF INCORPORATION  
VIRGINIA NONSTOCK CORPORATION

The undersigned, pursuant to Chapter 10 of Title 13.1 of the Code of Virginia, state(s) as follows:

1. The name of the corporation is:  
\_\_\_\_\_.

2. The corporation is to have no members.  
**OR**  
The corporation is to have the following class(es) of members:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

3. The directors of the corporation shall be elected or appointed as follows:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

4. A. The name of the corporation's initial registered agent is  
\_\_\_\_\_.

B. The initial registered agent is (mark appropriate box):

- (1) An individual who is a resident of Virginia **and**  
[ ] an initial director of the corporation  
[ ] a member of the Virginia State Bar

- (2) [ ] **OR**  
a professional corporation, professional limited liability company or registered limited liability partnership registered with the Virginia State Bar under § 54.1-3902 of the Code of Virginia.

5. A. The corporation's initial registered office address, which is identical to the business office of the initial registered agent, is:  
\_\_\_\_\_, VA \_\_\_\_\_  
(number/street) (city or town) (ZIP code)

B. The registered office is physically located in the [ ] City **or** [ ] County of \_\_\_\_\_.

6. **(Include in this and subsequent paragraphs other provisions not inconsistent with law.)**

7. The initial directors are:

NAME(S)	ADDRESS(ES)
_____	_____
_____	_____
_____	_____

8. INCORPORATOR(S):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
**SIGNATURE(S)** **PRINTED NAME(S)**

## NOTE

**When preparing articles of incorporation, the information must be in the English language, typewritten or printed in black, legible and reproducible.**

This form contains the minimum number of provisions required by Virginia law to be set forth in the articles of incorporation of a nonstock corporation. If additional provisions are desired, then the **complete** articles of incorporation, including the additional provisions, should be typewritten on white, opaque paper 8 1/2" by 11" in size, using only one side of a page. A minimum of a 1" margin must be provided on the left, top and bottom margins of a page and 1/2" at the right margin.

## INSTRUCTIONS

1. **Name:** The name of the corporation is placed at the heading of the articles and repeated, identically, in the first paragraph. The name should be consistent throughout the articles. See § 13.1-829 of the Code of Virginia for name requirements.
2. **Members:** If the corporation is to have no members, a statement to that effect must be stated in the articles. If the corporation is to have one or more classes of members, set forth any provision which the incorporators choose to include in the articles designating the class(es), stating the qualifications and rights of the members of each class and conferring, limiting or denying the right to vote. The articles may provide that such membership provisions will be set forth in the corporation's bylaws. See §§ 13.1-819, 13.1-837 et seq.
3. **Director selection:** The articles must include a statement of the manner in which directors shall be elected or appointed, and a designation of ex officio directors, if any. See §§ 13.1-819, 13.1-853 et seq.
4. **Registered agent:** A. Provide the name of the registered agent. See §§ 13.1-819, 13.1-833. B. Indicate the status of the registered agent. The registered agent must by one of the options listed. No other person or entity may serve as the registered agent.
5. **Registered office:** A. Provide the complete post office address (which must include a street address, if any, or a rural route and box number in rural areas) of the corporation's registered office which must be the same as the business office of the registered agent. B. Provide the name of the city or county where the registered office is physically located. (Cities and counties in Virginia are separate local jurisdictions.) See §§ 13.1-819, 13.1-833.
6. **Other provisions may be included, e.g.,** stating the purpose for which the corporation is organized. For information concerning language which should be included in order to obtain tax-exempt status under the Internal Revenue Code, you are referred to Internal Revenue Service Publication 557, "Tax-Exempt Status for Your Organization."
7. **Directors:** If the registered agent's status in 4.B. is that of initial director, then the names and addresses of the initial directors must be included in the articles of incorporation. A corporation can have directors immediately upon formation **only** if they are named in the articles of incorporation.
8. **Incorporator(s):** One or more persons must sign the articles of incorporation in this capacity. See § 13.1-804 of the Code of Virginia.

**SEND THE ARTICLES OF INCORPORATION, ALONG WITH A CHECK IN THE TOTAL AMOUNT OF \$75 (\$50 CHARTER FEE AND \$25 FILING FEE), TO THE CLERK OF THE STATE CORPORATION COMMISSION, P. O. BOX 1197, RICHMOND, VA 23218- 1197. (Street address: 1300 East Main Street, 1st Floor, Richmond, VA 23219). MAKE CHECK PAYABLE TO THE STATE CORPORATION COMMISSION. IF YOU HAVE QUESTIONS, CALL (804) 371-9733.**

ARTICLES OF INCORPORATION  
of  
YOUR ORGANIZATION, INC.

TO: STATE CORPORATION COMMISSION:

The undersigned natural person of the age of twenty-one years or more, acting as incorporator, adopts the following Articles of Incorporation pursuant to the State Nonstock Corporations Act:

FIRST: The name of the corporation is NAME, INC.

SECOND: The period of duration is perpetual.

THIRD: The corporation is organized and will be operated exclusively for charitable and educational purposes within the meaning of 501(c)(3) of the Internal Revenue Code. (All references to sections in these Articles refer to the Internal Revenue Code of 1986 as amended or to comparable sections of subsequent internal revenue laws.) Specifically, the corporation is organized to XXXXXXXXXX. In pursuance of these purposes it shall have the powers to carry on any business or other activity which may be lawfully conducted by a corporation organized under the YOUR STATE Nonstock Corporations Act, whether or not related to the foregoing purposes, and to do all things necessary, proper and consistent with maintaining tax exempt status under section 501(c)(3).

FOURTH: The corporation may have one or more classes of members, the qualifications and rights, including voting rights, of which shall be designated in the bylaws.

FIFTH: The registered agent is NAME, who is a resident of the state of STATE and a director of the corporation, and the address of its initial registered office is ADDRESS , which is physically located in the county of COUNTY.

SIXTH: The number of directors constituting the initial Board of Directors is NUMBER, and the names and addresses, including street number, of the persons who are to serve as the initial directors until the first annual meeting, or until their successors are elected and qualified, are:

**INSERT NAMES AND ADDRESSES OF INITIAL BOARD MEMBERS**

The members of the Board of Directors shall be those individuals elected, from time to time, in accordance with the Bylaws. Directors shall elect their successors.

**SEVENTH: The internal affairs of the corporation shall be regulated by its Board of Directors as described in the Bylaws. Upon dissolution of the corporation, its assets shall be disposed of exclusively for the purposes of the corporation or distributed to such organizations organized and operated exclusively for charitable purposes which shall, at the time, qualify as exempt organizations under section 501(c)(3).**

**EIGHTH: No part of the net earnings of the corporation shall inure to the benefit of or be distributed to any director, employee or other individual, partnership, estate, trust or corporation having a personal or private interest in the corporation. Compensation for services actually rendered and reimbursement for expenses actually incurred in attending to the affairs of this corporation shall be limited to reasonable amounts. No substantial amount of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation and this corporation shall not intervene in (including the publishing or distributing of statements) any political campaign on behalf of or in opposition to any candidate for public office. Notwithstanding any other provision of these Articles or of any Bylaws adopted thereunder, this corporation shall not take any action not permitted by the laws which then apply to this corporation.**

**NINTH: The name and address, including street and number, of the incorporator is:**

NAME  
ADDRESS

IN WITNESS THEREOF, I have hereunto set my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 2002.

\_\_\_\_\_  
By: NAME, Incorporator

BYLAWS

of the

\_\_\_\_\_ LAKE ASSOCIATION

**ARTICLE I: NAME**

Section 1. The name of this organization shall be the \_\_\_\_\_ Lake Association.

**ARTICLE II: PURPOSE**

Section 1. The Association shall promote and maintain the environmental, economic, and recreational protection of \_\_\_\_\_ Lake and its vicinity.

Section 2. The Association shall work in conjunction with federal, state, and local agencies, both public and private, to maintain the quality of the lake.

Section 3. The Association shall develop a program for the promotion of stocking \_\_\_\_\_ Lake.

Section 4. The Association shall provide educational resources relating to the protection and quality of \_\_\_\_\_ Lake area and its wildlife.

Section 5. The Association shall inform the general membership of civil concerns relating to the purposes of the Association.

Section 6. The Association shall be a nonprofit, nonstock corporation.

**ARTICLE III: MEMBERSHIP**

Section 1. Membership shall be open to all interested parties who share a concern for the purposes of the Association.

**ARTICLE IV: DUES**

Section 1. Initial membership fee:

- A. Initial membership shall be \$\_\_\_\_\_ for businesses.
- B. Initial membership shall be \$\_\_\_\_\_ for general membership.

Section 2. Annual dues:

- A. Annual dues shall be \$\_\_\_\_\_ for businesses.
- B. Annual dues shall be \$\_\_\_\_\_ for general membership.
- C. Annual dues shall be payable no later than \_\_\_\_\_ of the current fiscal year to remain a voting member in good standing with the Association.

**ARTICLE V: OFFICERS**

Section 1. The Officers of the Association shall be a President, Vice President, Secretary, Treasurer and a Board of Directors.

Section 2. The immediate Past President shall serve on the Board of Directors as a voting member and to advise the Board.

Section 3. Duties:

- A. The President shall preside at all annual, board, and special meetings of the Association and shall represent the Association at all official functions.
- B. The Vice President shall, in the absence of the President, fulfill the duties of the President. Further, the Vice President shall fulfill other duties as designated by the President, the Board, or the general membership.
- C. The Secretary shall record and maintain minutes of all annual, board, and special meetings of the Association and shall manage all routine correspondence of the Association.
- D. The Treasurer shall maintain all revenues of the Association and shall disperse expenditures as designated by the Board or the general membership.
  - (1) The Treasurer shall be bonded at the expense of the Association.
  - (2) The Treasurer shall present a yearly report of income and expenditures at the annual meeting of the Association.
- E. The Board of Directors shall consist of all elected officers plus a representative from each geographical area of \_\_\_\_\_ Lake. The Board members shall fulfill all duties as directed by the President, Board of Directors, or the general membership.

Section 4. Term of office:

- A. Officers and Board Members shall serve a term of one year and shall be elected at the annual meeting by a simple majority.
- B. An individual may not serve more than two consecutive terms in the same office.

**ARTICLE VI: MEETINGS**

Section 1. The Association shall meet annually in \_\_\_\_\_ with the date and place set no later than \_\_\_\_\_.

Section 2. The Board of Directors shall meet quarterly, with the spring meeting prior to the annual meeting to set the agenda.

Section 3. Special meetings may be called at the discretion of the Board of Directors or at the request of the general membership.

**ARTICLE VII: ADDRESS**

Section 1. The Association shall maintain a post office box in Newport News, Virginia.

**BY-LAWS  
OF THE  
TRI-LAKES ASSOCIATION: LONG, PICKEREL AND ROUND LAKES**

**ARTICLE 1. NAME**

- 1.1 The name of the corporation shall be: Tri-Lakes Association: Long, Pickerel and Round Lakes.

**ARTICLE 2. PURPOSE**

- 2.1 The purpose of this Association shall be to improve and maintain the water quality of the lakes for all the users of the lakes. To promote involvement and input from all watershed residents, interested persons and organizations through communication, action and education.

**ARTICLE 3. OBJECTIVES**

The objectives of the Association are to:

- 3.1 Foster a partnership for the mutual benefit of individuals and organizations concerned with lake and watershed improvement and protection.
- 3.2 Promote and provide a forum for sharing information and experiences on scientific, administrative and financial aspects of lake and watershed management.
- 3.3 Assist in the development and execution of lake restoration and protection programs in accordance with appropriate management strategies and techniques by using education, political action and volunteerism.
- 3.4 Encourage support and development of local, state and national programs promoting lake and watershed management.

**ARTICLE 4. MEMBERSHIP**

- 4.1 All property owners of the Lake Association Region (See Appendix A) can be members of the Tri-Lakes Association by registering with the Coordinator of the Membership Committee. Registration involves giving one's name and address to the Coordinator of the Membership Committee. Each property owner's household is allowed one (1) vote<sup>1</sup>, [revised 12 November 1996] except that votes on issues requiring funding from the Tri-Lakes Association account may be voted on only by contributing members is good standing.

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<sup>1</sup> For example, if a husband and wife own one piece of property within the Lake Association Region they are considered one household and are allowed one (1) vote. Further, if a husband and wife (family, corporation, trust, etc.) own more than one property within the Lake Association Region and are living together, they are considered to be one household and are allowed one (1) vote. An individual or family that rents property within the Lake Association Region is not eligible to vote, but may be Associate Members (see 4.2).

- 4.2 Non-watershed property owners may join the Association, as “Associate Members,” by registering with the Coordinator of the Membership Committee. These members shall have all the rights and privileges of membership with the exception of voting (including voice and mail vote) and holding office.
- 4.3 The membership shall consist of those individuals and organizations whose interests are consistent with the purpose and objectives of the Association.
- 4.4 The annual dues of the Association shall be [revised 12 November 1996] twelve dollars (\$12.00) due and payable on January 1<sup>st</sup> for the ensuing calendar year.
- 4.5 Membership dues shall be reviewed annually by the Board of Directors and recommended revisions to the dues structure shall be put before the Association members.

**ARTICLE 5. BOARD OF DIRECTORS** (See Appendix B for the Organizational Chart)

- 5.1 The Association will be governed by a Board of Directors (hereafter called the Board), which shall have full power to manage the affairs of the Association to accomplish its purpose and objectives, subject to the specific conditions of these By-laws.
- 5.2 The Directors, generally, shall strive to achieve the objectives of the Association. Each Director shall be responsible for preparation and presentation of pertinent lake and watershed management topics for Board consideration, and shall act upon the business the Board in a thoughtful and conscientious manner. Directors are expected to take an active role in the promotion and development of the Association. They should engage in planning and carefully consider the long-run future, purpose and objectives of the Association.
- 5.3 The Board of Directors shall nominate the Officers and members of the Board for the Association membership to elect. Nominations for Officers and Directors for the following year shall be received from the Board and delivered to the President by August 15<sup>th</sup>, or the August quarterly meeting whichever is later, before the Annual Meeting of the Association. The Board shall submit a ballot of its nominations to the membership of the Association for election. The Board may nominate one or more candidates for each office to be filled. All candidates must be voting members of the Association.
- 5.4 Officers and Directors shall be elected by a plurality vote (less than 50% if more than two candidates are running for an election) of the Association members voting.
- 5.5 Additional nominations for Officers and members of the Board may also be made from the membership. Such nominations should be submitted to the President along with the signatures of twenty (20) members endorsing such nominations by August 15<sup>th</sup>, or the August quarterly meeting whichever is later.
- 5.6 The Officers (President, Secretary/Treasurer) will report to the Board of Directors.

- 5.7 The Board shall consist of four (4) Directors and the Past President of the Association. Two (2) Directors shall be from Lakes Association District 1 and two (2) Directors shall be from Lake Association District 2 (See Appendix A). Each Director term is two (2) years in length. Two Directors will be replaced annually. One from each District. The annual election of the two Board Members will occur in November of each year and they will take office on February 1<sup>st</sup> following their election.
- 5.8 The Board shall select a Chairperson of the Board on an annual basis. The Chairperson shall preside at all meetings of the Board. The Chairperson should attempt to give at least thirty (30) days notice of Board meetings to the Association membership. At least three (3) Board members must be present in order for the Board to formally discuss resolutions or motions. Three (3) affirmative votes are required in order for the Board to pass a resolution or motion.
- 5.9 If in the event a Board Member or Past-President can no longer fulfil (his/her) duties on the Board, a replacement may be made by the power of the existing Board of Directors for the remainder of the Board Member's term. Replacements shall be from the same district as the Board Member they are replacing.

#### **ARTICLE 6. OFFICERS**

- 6.1 The President and the Secretary/Treasurer shall serve two (2) year terms and be elected in November. The Officers shall take office February 1<sup>st</sup> following their election.
- 6.2 The President shall have general supervision of the affairs of the Association. He/she shall preside at all meetings of the Association. He/she shall appoint the Coordinators and members of all Committees, and may serve as an ex-officio member of any and all Committees. He/she shall see that all By-laws and any rules and regulations as may be adopted by the Association and Board are enforced. He/she shall execute all contracts and other instruments which shall have been first approved by the Board.
- 6.3 The Past-President shall serve on the Board for two (2) years following his/her term as President. The Past-President shall perform all the duties of the President in case of his/her absence or inability to attend the duties of the office.
- 6.4 The Secretary/Treasurer shall keep the minutes of the Association meetings and Board meetings, maintain all permanent records of the Association, collect and manage funds of the Association to support its objectives and projects, prepare an annual report for the Board and Association membership to review and file the annual tax return. The Board shall appoint a new Secretary/Treasurer for the remainder of the term in case the Secretary/Treasurer is unable to attend the duties of the office.
- 6.5 Regular attendance at Board and Association meetings by all Officers and Directors is expected.

#### **ARTICLE 7. LAKE ADVOCATES**

- 7.1 Because of the need for members of the Association to understand the biology and chemistry of the lakes, members with an interest in such areas will be appointed by the

Board to serve as Lake Advocates. Lake Advocates will act like consultants and use their scientific understanding of the lakes to assist the Board, Officers and Committees to better conduct their respective activities.

- 7.2 Lake Advocates should attempt to understand the biology and chemistry of the lakes and try to be aware of the most current lake protection and improvement techniques.
- 7.3 Lake Advocates are to implement and oversee the completion of projects which improve the water quality of the lakes.
- 7.4 The Lake Association shall keep and update lake management resource materials (National, State and Local Lake Association newsletters, publications from various clean water organizations, etc.) which may be beneficial to the Association.
- 7.5 Individuals interested in being appointed a Lake Advocate should apply to the Board.
- 7.6 There shall be three (3) Lake Advocates for the Association. Each serving a three year term, with one Lake Advocate being appointed each year by the Board. An individual may be reappointed as a Lake Advocate.

#### **ARTICLE 8. COMMITTEES**

- 8.1 Standing committees of the Association shall be the: Lake Education Committee, Membership Committee, Lake Monitoring Committee and such other Committees as the Board may see fit to establish. The Coordinators and members of each committee shall be appointed by the President in consultation with the Board of Directors, and they shall endeavor to secure a representative cross-section (individuals with varied backgrounds, Lake Association Districts, types of property owner, etc.) of the Association membership on the Committees. Any Association member may request to serve on any Committee. Members of the Standing Committees and other established committees shall serve for two (2) years and shall be eligible for reappointment.
- 8.2 The purpose of the Lake Education Committee, Membership Committee and Lake Monitoring Committee shall be:

Lake Education Committee: (1) Inform and educate the membership about water quality issues and activities of the Association. The newsletter and educational meetings are two of the key ways to achieve this task.

Membership Committee: (1) Encourage members to actively pursue the purpose and objectives of the Association, participate in the Association and financially support the Association. (2) Promptly [within thirty (30) days] meet and welcome new members of the watershed, give them a special newsletter about lake management techniques and invite them to participate in the Association. (3) Maintain a listing of names, addresses and phone numbers of the members of the Association.

Lake Monitoring Committee: (1) Collect data to monitor the short-term and long-term health of the Tri-Lakes. (2) Be vigilant of lake management practices within the

watershed and report poor or questionable management practices to the Board for appropriate action.

8.3 No committee may expend Association funds without authorization by the Board.

#### **ARTICLE 9. COMPENSATION**

9.1 The Board, Officers and Committee members shall serve without pay, but may be reimbursed actual expenses while conducting Association business, providing that these expenses receive prior authorization from the Board.

#### **ARTICLE 10. MEETINGS OF THE ASSOCIATION**

10.1 An Annual Meeting of the Association shall be held in November, at a time and place approved by the Board. The Secretary/Treasurer should attempt to give at least thirty (30) days notice of the Annual Meeting to the Association membership.

10.2 Emergency meetings shall be called by the President upon written petition of not less than twenty-five (25) Association members, or may be called when in the opinion of the President there is business which should be brought before the membership for action prior to the next regular meeting. No business may be transacted at an emergency meeting other than that stated in the call. The Secretary/Treasurer should attempt to give at least fifteen (15) days notice of all emergency meetings to the Association membership.

10.3 All actions (motions, resolutions, elections, etc.) voted on by the Association require that a quorum of Association members vote. Twenty-five (25) Association members are necessary to form a quorum. Unless specified otherwise, actions voted on by the Association require a simple majority (greater than 50%) of the Association members voting in order to pass.

10.4 Absentee voting will be permitted for registered members (See Section 4.1). Members wishing to absentee vote should give a written note to one of the Board Members prior to the regular vote. The note should indicate that they wish to absentee vote, indicate what issues (or elected positions) they are voting on and how (for or against) they would like to vote. The Board Member will then present the absentee ballot for inclusion in the vote count when the issue (or election) is voted on by the general membership.

#### **ARTICLE 11. RULES OF ORDER**

11.1 All meetings of the Association and the Board shall be conducted in accordance with the latest edition of *Robert's Rules of Order*, except where such conflicts with these By-laws.

#### **ARTICLE 12. LAKE ASSOCIATION CALENDAR**

12.1 The fiscal year of the Association shall end on 31 December of each year. This will be the year ending for accounting and tax return purposes.

12.2 The Association will have four (4) quarterly meetings, in February, August and November of each year. The November meeting is the annual meeting and is when Directors and Officers are elected.

- 12.3 At the February meeting the new Directors, Officers, Lake Advocate, Committee Coordinators and Committee Members shall begin their new terms. The outgoing President, Secretary/Treasurer and the Coordinators of the various committees should provide a year-end report of the activities completed, still in process and the success of those activities. Additionally, the incoming President should outline his/her objectives for the Association over the next year.

**ARTICLE 13. NOT FOR PROFIT STATUS**

- 13.1 The Association shall be organized as a not for profit corporation in accordance with Section 501(c)(3) of the United States Internal Revenue Code.

**ARTICLE 14. DISSOLUTION AND RECALL**

- 14.1 The Association may be dissolved by a three-fourths ( $\frac{3}{4}$ ) vote of all members through mail balloting. If dissolution is favorably acted upon, all just debts shall be paid out of the funds of the Association, and all remaining funds, if any, shall be donated to the Freshwater Foundation Lake Watch program.
- 14.2 A Board member or Officer may be recalled by a two-thirds ( $\frac{2}{3}$ ) vote at any quarterly meeting of the Association with previous announcement at a preceding quarterly meeting of the Association.
- 14.3 A Lake Advocate may be recalled by a four-fifths ( $\frac{4}{5}$ ) vote of the Board of Directors.

**ARTICLE 15. LIABILITY**

- 15.1 It is implicitly understood that the Association assumes no responsibility of liability for the well-being of any member or representative of a member attending, managing, or participating in meetings or any other functions of the Association.
- 15.2 No Officer or Director, former Officer or Director, nor any authorized agent of the Association shall be liable in any manner to the Association or any person or group for any loss or damage sustained as a result of action taken or omitted to be taken by said Officer, Director or agent in good faith, if he/she exercised or used the same degree of care and skill as a prudent person would have exercised or used under the circumstances in the conduct of his/her own affairs.

**ARTICLE 16. AMENDMENT OF BY-LAWS PROCEDURE**

- 16.1 By-laws may be amended by a majority vote at any regular meeting of the Association with previous announcement at a preceding regular meeting of the Association. After December 31, 1996 the By-laws may be amended by two-thirds ( $\frac{2}{3}$ ) vote at any regular meeting of the Association.

## **APPENDIX A**

### **TRI-LAKES ASSOCIATION: LONG, PICKEREL AND ROUND LAKES MAP OF LAKE ASSOCIATION REGION AND DISTRICTS**

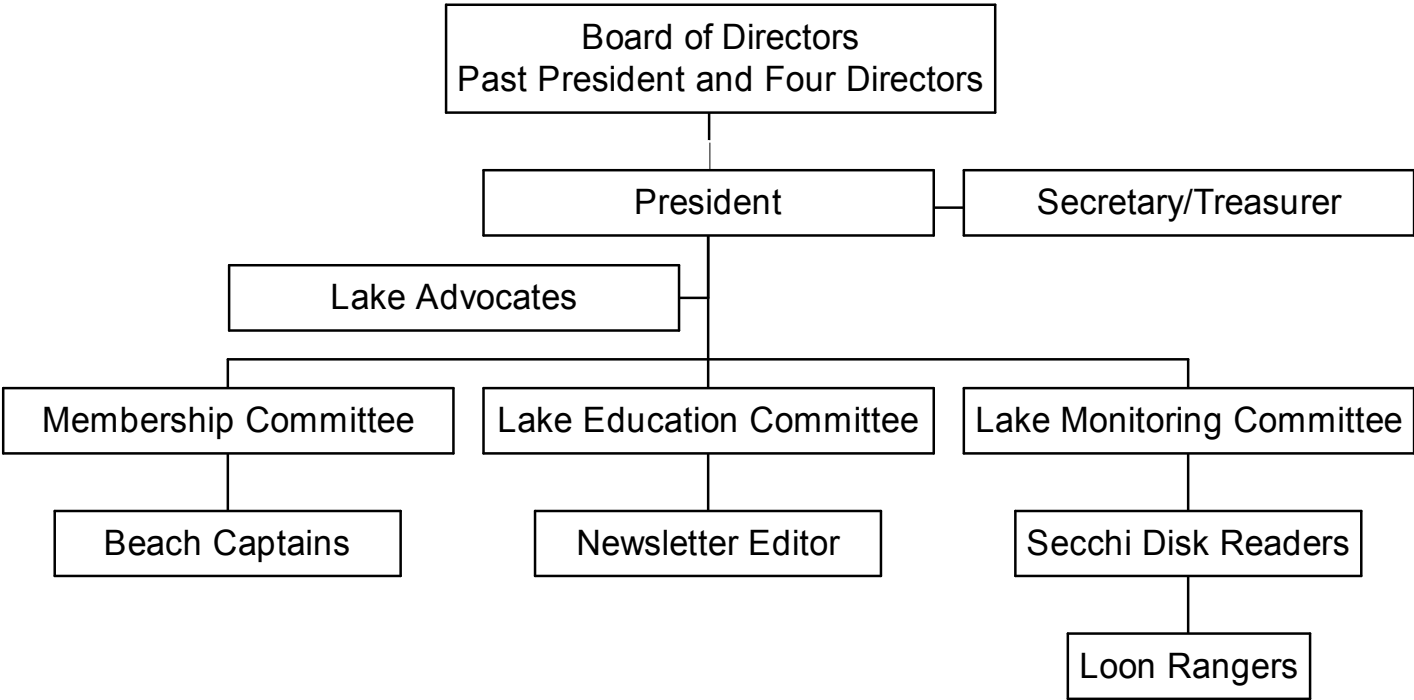
**ARTICLE A. LAKE ASSOCIATION REGION**

- A.1 The Lake Association Region is designed to approximate the watershed of the Tri-Lakes. It purposely does not follow the exact watershed boundaries because of the difficulty of knowing the boundary and the difficulty of communicating such a boundary. Additionally, it is larger than the watershed so the membership will include a broader group of individuals and encourage wider participation.
- A.2 The Lake Association Region is described as follows: Starting at the intersection of County Road 8 and 57<sup>th</sup> Street (County Road 60) follow an easterly bearing to the intersection of 57<sup>th</sup> Street (County Road 60) and 45<sup>th</sup> Avenue, then proceed north to the intersection of Highway 10 and 45<sup>th</sup> Avenue, following Highway 10 in a southeasterly direction to the intersection of 60<sup>th</sup> Street (County Road 60), then proceed west to the location where 55<sup>th</sup> Avenue would intersect 60<sup>th</sup> Street, if the two roads were connected, going directly south from this point following 55<sup>th</sup> Avenue (or its imaginary bearing) until it intersects 77<sup>th</sup> Street (County Road 7), at the intersection of 77<sup>th</sup> Street and 55<sup>th</sup> Avenue follow 77<sup>th</sup> Street easterly (County Road 7) until the road turns south and becomes 44<sup>th</sup> Avenue (County Road 7) and County Road 8, follow County Road 8 west by northwest until County Road 8 intersects 57<sup>th</sup> Street (County Road 60), this path will trace the border of the Lake Association Region.

**ARTICLE B. LAKE ASSOCIATION DISTRICTS**

- B.1 The Lake Association Region is divided into two (2) districts. The dividing line follows 42<sup>nd</sup> Avenue Southeast; this is a line which goes approximately through the middle of Long Lake.
- B.2 District 1 includes those property owners who have a Street address and a house number that is less than or equal to 4200, or those property owners who have an Avenue address which is less than or equal to 42<sup>nd</sup> Avenue Southeast.
- B.3 District 2 includes those property owners who have a Street address and a house number that is greater than 4200, or those property owners who have an Avenue address which is greater than 42<sup>nd</sup> Avenue Southeast

**APPENDIX B**  
**TRI-LAKES ASSOCIATION: LONG, PICKEREL AND ROUND LAKES**  
**ORGANIZATIONAL CHART**



**TRI-LAKES ASSOCIATION  
BY-LAWS REVISION TABLE**

REVISION NUMBER	PARAGRAPH NUMBER	DATE OF REVISION
Revision #1	4.1	12 November 1996
Revision #2	4.4	12 November 1996

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## Aeration Companies

The below is a list companies that manufacture, sell, and/or install aeration systems. The list is not a comprehensive directory of all aeration companies on the market and not all of the companies listed below install systems in Virginia.

(FOR INFORMATIONAL PURPOSES ONLY)

### **Air-Aqua, Ent.**

- Web address: <http://www.airaqua.com/>
- Address: 3210 West Lake Ave, Glenview, IL 60026
- Phone: 847-657-9655

### **Aqua-Aerobic Systems, Inc**

- Web address: <http://www.aqua-aerobic.com/>
- Address: 6306 North Alpine Rd, Rockford, IL 61111
- Phone: 815-654-2501

### **AquaMaster Fountains & Aerators**

- Web address: <http://www.aquamasterfountains.com/>
- Address: 16024 CTH X, Kiel, WI 53042
- Phone: 800-693-3144

### **Aquatic Control**

- Web address: <http://www.aquaticcontrol.com/>
- Address: PO Box 100, Seymour, IN 47274
- Phone: 800-753-LAKE

### **Keeton Industries, INC.**

- Web address: <http://www.keetonaquatics.com/>
- Address: PO Box 249, Wellington, CO 80549
- Phone: 970-493-4831

### **Lake-Aeration.com**

- Web address: <http://lake-aeration.com/>
- Address: PO Box 712, Lake Hopatcong, NJ 07849
- Phone: 800-909-4564

### **Virginia Lake Management**

- Web address: <http://www.virginialakemanagement.com/>
- Address: 610 Thimble Shoals Blvd., Suite 101, Newport News, VA 23606
- Phone: 757-591-8780

**NEWPORT NEWS CITIZEN'S GUIDE:**

**STORMWATER AND LAKE  
MANAGEMENT**

# NEWPORT NEWS CITIZEN'S GUIDE TO STORMWATER AND LAKE MANAGEMENT

## INTRODUCTION

Every year the City's lakes show increased stress from our expanding population and inputs from development associated with an increasingly urbanized watershed. Some of the problems lakefront residents are accustomed to include nuisance algae, duckweed infestations, excessive shallowness, and summertime fish kills.

For the most part, these problems are an unfortunate side effect of stormwater runoff. Stormwater runoff is the water that flows over land during and immediately after a rainfall. When it rains, fertilizers, pesticides, motor oil and garbage run off our yards and streets and into storm drains that lead to our lakes.

**The lakes in the City of Newport News serve primarily as stormwater management tools.**

This stormwater runoff accelerates a lake's natural aging process and can cause problems such as odors, nuisance algal growth, and excessive sedimentation. To help counter the effects of stormwater runoff on the quality of our lakes, the City has implemented a Lake Enhancement Program.

## LAKE ENHANCEMENT PROGRAM

Information about the Lake Enhancement Program and other methods of improving the quality of the water in stormwater lakes is included in the following.

### DREDGING

Dredging is an important aspect of lake maintenance and water quality improvement. Dredging works in two ways to improve water quality. The first is by deepening the lake to provide more storage capacity. Dredging also removes the layer of most highly enriched materials from the lake's bottom. Removing this nutrient "bank" prevents phosphorous from releasing back into the water column from the sediment. This helps lower nutrient concentrations in the lake, consequently decreasing nuisance algal blooms and duckweed infestations. Unfortunately, it is expensive and does not treat the problem, nutrient overloading from storm runoff.

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Pollutants in stormwater, such as nutrients and heavy metals, accumulate in the sediment layer of stormwater lakes. Removing the layer of most highly enriched materials improves water quality by eliminating this pollutant "bank" before it can become suspended in the water column and available to algae and other types of nuisance vegetation.

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### AERATION

Aeration is a cost effective method of enhancing water quality and provides an environmentally friendly alternative to chemicals. Aeration stimulates the natural processes that improve water quality. Aeration sets up complex processes that bind phosphorous to the sediment, making it unavailable to algae and other nuisance vegetation. Binding phosphorous to the sediment also

allows this nutrient "bank" to be removed through maintenance dredging, further enhancing water quality. Aeration also keeps dissolved oxygen levels high, which can help prevent fish kills in the summer. Aeration also stimulates aerobic bacteria, which is important for stormwater lakes because aerobic digestion is fast and efficient and does not produce hydrogen sulfide, a primary cause of odors in stormwater lakes.

Surface spray aerators provide the best vertical circulation in ponds or lakes less than 15 feet deep. They lift the bottom water to the surface and spread it out over the surface water to aerate it and create convection currents. The wave action caused by the spray pattern is excellent at breaking up algal mats and discouraging mosquito breeding. Surface spray aerators also provide an attractive element to the lake.

Aeration is a science, so when considering an aeration system for your lake or pond, consult an expert. Look for companies that specialize in lake management *and* aeration. When choosing an aerator keep the following factors in mind. Ask to see the company's oxygen transfer rates. Responsible aerator manufacturers publish independent test results confirming their oxygen transfer rates. Check the aerator's pumping rates. Pumping rates express the aerator's ability to circulate water throughout the lake.

Remember that fountains are NOT aerators. Fountains are decorative water features that are designed not to improve water quality, but for aesthetic purposes. Fountains have essentially no impact on water quality because they pump a low volume of water at very high pressure. This is necessary to create the dramatic effects seen with fountains. Aerators pump a high volume of water at low pressure, circulating water *throughout* the lake.

Aeration requires upkeep of the equipment and electricity.

### **AQUASCAPING**

Aquascaping is simply landscaping the shoreline of lakes with aquatic and wetland plants. These plants add beauty and shade to waterfronts and shorelines and protect property from erosion. The addition of native, aquatic vegetation creates a more natural state in stormwater lakes, enhancing the lake's ability to assimilate nutrients. Vegetation filters polluted runoff and causes the precipitation of sediments. Choosing the correct plants and maintaining them properly create the foundation for successful aquascaping.

Aquascaping is the term used to describe the planting of aquatic plants in and around water. Lakes that have had their shorelines planted with native aquatic vegetation have far fewer problems than lakes without a vegetated shoreline. Aquatic plants around the perimeter of a lake stabilize the shoreline, reduce erosion, absorb excess nutrients and slow the sedimentation process. Mature, vegetated lakes also have a pollutant removal capacity that is as much as five times higher than unvegetated lakes.

Involving all the lakefront property owners can convert the lake from an algae-dominated system to a more natural, functioning lake ecosystem.

Aquatic plants are placed close to the shore in 0 to 18 inches of water. Several kinds of native aquatic and wetland plants are listed in this brochure. Once established, aquatic plants require little maintenance. If they become too dense, they may be thinned or divided and moved to other areas of the lake.

Ponds and lakes with a landscape design have far fewer problems than lakes without one. Aquatic plants pump oxygen into the water and create habitat by providing hiding places and nurseries for fish and other organisms. More importantly, vegetated shorelines help improve water quality. Vegetated stormwater lakes have a pollutant removal capacity that is as much as five times higher than unvegetated lakes. With proper planning and planting, stormwater lakes can thrive like natural lakes, prolonging their life and improving their ability to improve water quality.

The majority of the lakes in the City of Newport News serve water quality purposes. They filter the nutrients and pollutants that enter the storm system before entering the local waterways. Unfortunately, aquascaping will not treat stormwater runoff and pollution from the local streets, sidewalks, and other paved surfaces as they flow through the stormwater system, i.e. grass and concrete swales and storm pipes.

### **IMPROVING WATER QUALITY (YARD CARE)**

Fertilizers and pesticides from residential areas are serious threats to our lakes and other waterways. The perfect-looking yard is less than ideal if caring for it causes harmful runoff that degrades the water quality in our lakes. The basic idea is to cooperate with local, natural conditions rather than battling the elements. Use the tips outlined below to create and maintain a beautiful landscape that will protect water quality in your lake.

#### **Fertilizers**

- Look for and use fertilizers that contain slow-release, water insoluble nitrogen as well as other essential nutrients. At least 30% of the nitrogen should be in this form.
- When fertilizing grass, apply no more than one pound of nitrogen per 1,000 square feet.
- Timing is also important. Fertilize warm season grasses in the summer (April 1 to August 15) and cool season grasses in the fall (August 15 to November 1).
- Avoid using fertilizers that contain weed killer or insecticides. These chemicals should be used only as a last resort and only when other lake-friendly options fail. Also, only use these chemicals on affected areas, never as a broadcast treatment. This wastes chemicals and offers no benefit to your lawn.
- Consult your local Virginia Cooperative Extension office for more information on fertilizers and a list of recommended plants for your area.

## Pesticides

- Think before you plant. It takes a sizable amount of pesticides to protect plants weakened by unfavorable growing conditions.
- Go easy on the water and fertilizer. Too much of either can cause excessive growth, making plants more susceptible to insects and diseases.
- Scout your yard for pests. Inspecting plants helps identify problems before they get out of hand.
- Hand-picking, pruning or spraying with water are effective controls of some insect pests, if you catch the damage early.
- Look for and use safer solutions. Alternatives such as insecticidal soaps, horticultural oils and *Bacillus thuringiensis* (Bt) provide safe, effective control of most landscape pests without harming beneficial insects or the environment.

## Watering

- Basic watering schedule for grass: apply  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch of water when the grass shows signs of distress (lawn begins to wilt, color dulls, or footprints stay compressed more than a few seconds). Don't apply more until the symptoms return. The lawn should dry out thoroughly in between applications.
- For best results, schedule watering for the early morning or evening. During these hours temperature and wind speeds are lowest, reducing evaporation. Also, grass will be less susceptible to fungus if it's watered at the time dew normally forms. Never water between 8 a.m. and 5 p.m. Evaporation rates are high this time of day and the sun's reflection off wet leaf blades can burn the grass.
- Water only as needed and in the appropriate amount. Over-watering makes plants more pest-prone and produces unnecessary, excess runoff. Watering too often with too little water produces shallow roots, weakening the grass.

## Mowing

Always mow grass to the proper height, it promotes deep roots and makes the grass healthier. Mowing too short encourages shallow roots, making your lawn susceptible to drought, stress, diseases and insect pests. Taller grass blades also discourage weeds and help reduce water loss.

### Recommended Mowing Heights

<u>Cool Season Grasses:</u>		Perennial Ryegrass	1 $\frac{1}{2}$ inches to
Kentucky Blue Grass	1 $\frac{1}{2}$ to 2 $\frac{1}{2}$	2 $\frac{1}{2}$ inches	
inches		<u>Warm Season Grasses:</u>	
Tall Fescue	2 to 3 inches	Bermudagrass	$\frac{1}{2}$ inch to 1 inch
Creeping Red Fescue	2 to 3 inches	Zoysiagrass	$\frac{3}{4}$ inch to 1 inch

## ADDITIONAL LAKE Improvement TECHNIQUES

### **SHORELINE CLEANING**

Shoreline cleaning is usually done on an as-needed basis for the removal of undesirable woody vegetation, weeds and garbage.

### **BIOAUGMENTATION**

Bioaugmentation involves the addition of a special blend of naturally occurring bacteria to the pond or lake. These bacteria compete with algae for nutrients, digest dead organic matter throughout the water column and sludge layer, and eliminate pond odor caused by ammonia and hydrogen sulfide. Bioaugmentation products are sold under brand names such as LakePak™ and Otter Clear. The effectiveness of any bioaugmentation product is greatly enhanced with the use of an aeration system.

### **PHYSICAL CONTROL OF AQUATIC VEGETATION**

Floating vegetation, including filamentous algae and duckweed, can be physically removed via nets. Removing the vegetation will reduce the likelihood of low oxygen levels adversely affecting aquatic wildlife in the lake. Decaying vegetation reduces oxygen content and stresses aquatic wildlife. This process will remove existing vegetation from the lake and thereby improve water quality, but it is physically demanding. The results are a temporary solution, to the excessive vegetation in a lake.

### **FISH STOCKING**

Almost all lakes and ponds are suitable for some type of fish. A healthy and diverse population of fish is an important part of creating an environmentally balanced lake. The size and shape of the pond or lake are important factors when considering stocking with fish. The lake should be more than one-quarter acre in size and at least an average of five feet deep. Shoreline vegetation and an irregular shoreline are important for providing cover for the fish once it is stocked.

Largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*) are the preferred species for stocking lakes and ponds in Hampton Roads. Mosquito fish (*Gambusia affinis*) also are used frequently because they are a valuable biological control for mosquito larvae. Mosquito fish are 1½ to 2½ inches long and native as far north as southern Illinois and New Jersey. Mosquito fish can be kept in combination with other fish except largemouth bass, which forage on them.

### **A WORD ABOUT GRASS CARP**

Many lakefront residents in Newport News have expressed a great deal of interest in the use of triploid grass carp for the control of nuisance vegetation in the City's stormwater lakes. Grass carp (*Ctenopharyngodon idella*) are rapid growing, plant-eating fish native to large rivers of eastern

China and Siberia. In Virginia waters, they typically grow to 20 pounds and live 5-11 years. Grass carp can be very effective at controlling nuisance vegetation, since a five pound fish can eat about five pounds of plants a day. However, because grass carp are selective feeders, they will not control all of the nuisance vegetation found in the City's stormwater lakes. Generally grass carp are recommended for the control of the following aquatic weeds: Nitella, Elodea, Sago Pondweed, Hydrilla, Pondweed and Chara. They are NOT recommended for the control of filamentous algae, Duckweed, Watermeal and Watermilfoil because studies have shown that carp do not readily eat them. But without other soft-stemmed vegetation to eat, they will eat the algae and other vegetation. Stocking rates for triploid grass carp vary depending on the amount of control desired and the type of vegetation to be controlled. Contact the Virginia Department of Game and Inland Fisheries at 757/253-4172 for more information on stocking rates and assistance identifying problem weeds.

### **CHEMICALS IN LAKES**

Chemical treatments require a professional with the appropriate licensing. A mistake in dosage can be toxic to fish and can have serious impacts downstream. Oxygen depletion and fish kills are distinct hazards when treating large infestations of nuisance vegetation. Furthermore, chemical control is temporary and at best offers little more than a brief period of relief. Always use a licensed applicator when treating ponds or lakes with chemicals. Blue-green algae have been known to develop a tolerance to algicides, making them less effective over time. Maintenance efforts that emphasize chemical treatments year after year can be expensive and usually perpetuate nuisance algae and vegetation problems. Chemicals may alleviate the immediate symptom, but they do little for the long-term condition of the lake. Furthermore, chemical programs expose area waterways to products that may have harmful effects on wildlife.

### **RESIDENT GEESE**

Some of the lakes in Newport News have become a favorite hang-out for large numbers of resident geese. It is easy to see why these geese have flourished in our area. From a goose's point of view, our lakeshore lawns, which offer short, succulent grass, open water and few predators, provide ideal habitat for feeding and loafing. Many people don't realize, until it's too late, that these geese can become a serious nuisance for the lakefront property owner. In the spring, they can destroy new and established turf areas by eating newly emerging shoots. And, as they congregate, their fecal material builds up on lawns and shorelines. These droppings are not only

#### **FACTS ABOUT CANADA GEESE**

**BOG**

- Protected by the federal Migratory Bird Treaty Act
- Feed by grazing on succulent grasses and small plants
- Weigh 12 pounds or more
- Live 10 years or more
- Able to reproduce at 2-3 years of age
- Eggs hatch in 28 days, broods average 4 goslings
- Return to the same nesting and feeding areas each year

aesthetic issues; they also are high in organic matter. This means that excessive amounts of droppings can lead to high levels of nutrients in the water, resulting in water quality problems like nuisance algae blooms and high bacterial counts.

Once geese establish themselves in an area, it can be very difficult to convince them that they should spend their time elsewhere. The solution to nuisance geese involves two key steps. **First, don't feed the geese.** This may seem simple, but it is crucial to successfully removing geese from around the lake. Besides, feeding geese crackers and stale bread is NOT healthy and can cause nutritional deficiencies. **Second, make your shoreline uninviting to geese.** Ideal geese habitat is a lake plus a nice, green lawn. So, if you do not want geese in your yard, modify your shoreline from a grass-dominated one to a more natural one with shrubs and native, aquatic vegetation. These "buffer areas" attract fewer geese and help improve water quality (see section on Aquascaping).

### FISH KILLS

In Newport News, it is not unusual to have fish kills in our stormwater lakes, particularly in the summer months. The most common cause of these summer fish kills is oxygen depletion. The causes of the oxygen depletion vary. Chemical treatment for algae or aquatic weeds during the critical summer months can lead to fish kills. Another common cause of summer fish kills is a sudden die-off of algae from natural causes or from herbicides. The decay process can use up the oxygen in the water. Many common pesticides are toxic to fish and wildlife. When lakefront residents use chemical pesticides on their yards, they run an increased risk of fish kills. Rain can wash pesticides directly into the lake where fish die from the direct effect of the chemical.

High water temperatures are another condition that leads to fish kills. Water loses its oxygen holding capacity when its temperature rises above 80°F. When this is the case, large numbers of fish are seen at the water surface gulping air at night or early in the morning. When disturbed they dive, but quickly return to the surface. This type of summer fish kill usually happens around sunrise, when the dissolved oxygen is at its lowest point for the day.

**WHERE TO GET HELP**  
(FOR INFORMATIONAL PURPOSES ONLY)

Brochures, etc.

- Native Plants for Conservation, Restoration and Landscaping (DCR) (<http://www.dcr.virginia.gov/dnh/native.htm>)
- BayScapes (<http://www.fws.gov/chesapeakebay/Bayscapes.htm>)

Resources

- **NN Stormwater Management**
  - Web address: <http://www.nngov.com/stormwater/homepage1.htm>
  - Address: 2400 Washington Ave, 7<sup>th</sup> Floor, Newport News, VA 23607
  - Phone: 757-926-8611
- **Department of Game and Inland Fisheries** (fish stocking info.)
  - Web address: <http://www.dgif.state.va.us/>
  - Address: 4010 West Broad Street, Richmond, VA 23230
  - Phone: (804) 367-1000
- **Otterbine** (aerators, bioaugmentation)
  - Web address: <http://www.otterbine.com/>
  - Address: 3840 Main Road East, Emmaus, PA 18049
  - Phone: 1-800-AER-8-TER (237-8837)
- **Virginia Lake Management** (aerators, lake maintenance, etc)
  - Web address: <http://www.virginialakemanagement.com/>
  - Address: 610 Thimble Shoals Blvd., Suite 101, Newport News, VA 23606
  - Phone: 757-591-8780
- **Aquatic Services** (aerators, lake management, algae & weed control, fish stocking)
  - Address: 1723 Arlington Rd, Richmond, VA 23230
  - Phone: (804) 359-0430
- **LakePak** (available from a variety of manufacturers)

- **Department of Agriculture and Consumer Services, Office of Pesticide Services**
  - Web address: <http://www.vdacs.virginia.gov/pesticides/>
  - Address: P.O. Box 1163, Richmond, VA. 23218
  - Phone: 804-371-6558 (licensed applicators)
- **Virginia Lakes & Watersheds Association**
  - Web address: <http://www.gky.com/VLWA/>
  - Address: 6040 Waterworks Road , Norfolk, VA 23502
  - Phone: 757-441-5678
- **Virginia Cooperative Extension** (Soil Testing and Fertilization Recommendations, & Insect, Disease, and Weed Identification and Control Measures)
  - Web address: <http://www.ext.vt.edu/>
  - Address: 739 Thimble Shoals Boulevard, Suite 1009, Newport News, VA 23606
  - Phone: 757-591-4838
- **Virginia Native Plant Society** (John Clayton Chapter serving the counties of Gloucester, James City, Matthews, Middlesex, and York, and the cities of Hampton, Newport News, Poquoson and Williamsburg.)
  - Web address: <http://www.vnps.org/>
  - Address: P.O. Box 677, Yorktown, VA 23690
- **Virginia Department of Conservation & Recreation**
  - Web address: <http://www.dcr.state.va.us/>
  - Address: 203 Governor Street, Suite 213, Richmond, VA 23219-2094
  - Phone: 804-786-1712