

PARTIAL EDITION

LAKE MANAGEMENT IN MICHIGAN WITH A LAKE IMPROVEMENT BOARD

October 2010

MICHIGAN CHAPTER NORTH AMERICAN LAKE MANAGEMENT SOCIETY

PREFACE

Michigan has 11,000 lakes over 5 acres in size. It is impossible to effectively manage this resource without the involvement of the local government and community. Michigan has several mechanisms for collaborative lake management, one of which is the Inland Lake Improvement Board (Part 309 of the Michigan Natural Resources and Environmental Protection Act – Public Act 451 of the Public Acts of 1994, as amended). The Inland Lake Improvement Board (Lake Board) brings together the local citizens with the township and county governments to manage the lake. This partnership of concerned agencies and stakeholders can take significant action to protect the valuable local lake resource.

Unfortunately, very often the individuals who represent the citizens and local governments on Lake Boards have little to no knowledge or experience in lake ecology or management or how lake improvement boards operate. This manual has been drafted to help citizens and local government representatives have a better understanding of lake ecology, the lake management options available and when best to apply them and the administrative procedures for implementing a Lake Board. Hopefully, the manual will also serve to promote a network for Lake Board representatives and encourage greater communication between lake management groups.

The manual is not a comprehensive document addressing every possible issue a Lake Board representative may encounter. Such a manual would be several feet thick and would be obsolete every few days. Instead this manual will address the basics of lake management and Lake Board operations and refer the user to other available documents, web sites and training opportunities which offer greater details.

The manual at this time (October, 2009) is in draft form and only partially complete. If there is sufficient interest in the manual the remaining sections will be drafted and distributed.

ACKNOWLEDGMENTS

We would like to acknowledge Oakland County and the Oakland County Drain Commissioner's Office for providing a copy of their *Lake Improvement Board Manual*, which was very thoughtfully produced and provided an excellent foundation for the Lake Improvement Board Administration section of this manual. Oakland County's *Lake Improvement Board Manual* was produced by Gayle Murphy with assistance from Terry Dohany and Sid Lockhart. It was originally produced in May 2003 and revised in October 2007. The *Lake Improvement Board Manual* is available on the internet in its entirety at the Oakland County Drain commissioner's web page.

We acknowledge the significant work of Mike Solomon, Dave Foley, John Beck and Howard Wandell who wrote many sections of the Manual. Larry Copley provided valuable comments regarding the responsibilities of lake board members.

TABLE OF CONTENT

PART I: INTRODUCTION

- Section 1** – Michigan’s Inland Lakes
- Section 2** – Barriers to Management
- Section 3** – Management Institutional Options

PART II: LAKE ECOLOGY AND MANAGEMENT ISSUES

- Section 1** – Eutrophication
- Section 2** – Monitoring: the Cooperative Lakes Monitoring Program
- Section 3** – Water and Nutrient Budgets
- Section 4** – Holistic Management: Managing the Land and Water
- Section 5** – Shoreline Management
- Section 6** – Management of Aquatic Plants and Algae
- Section 7** – Aquatic Exotic Invasive Species
- Section 8** – Sediment and Dredging
- Section 9** – Swimmers’ Itch
- Section 10** – Fish
- Section 11** – Boating Regulations and Options

PART III: LAKE IMPROVEMENT BOARD ADMINISTRATION

- Section 1** – General Overview of the Lake Improvement Board
- Section 2** – Chronological Steps to be followed by a Lake Improvement Board
- Section 3** – Establishing Petition and Township Resolution
- Section 4** – Election of Lake Board Officers and Duties
- Section 5** – Lake Improvement Board Meetings Documents
- Section 6** – Hearing of Practicability and Hearing of Assessment
- Section 7** – Financing Projects
- Section 8** – Deactivate a Lake Improvement Board

PART IV: ADDITIONAL SUPPORT

- Section 1** – Advice from Lake Board Members
- Section 2** – Publications, Web Sites, and Training Opportunities worth Knowing About
- Section 3** – Organizations that may be Helpful

PART V: APPENDICES

- Section 1** – Tax Tribunal Act
- Section 2** – Lake Improvement Act

PART I: INTRODUCTION

Section 1 – Michigan’s Inland Lakes

Section 2 – Barriers to Management

Section 3 – Management Institutional Options

PART II: LAKE ECOLOGY AND MANAGEMENT ISSUES

Section 1 – Eutrophication

Section 2 – Monitoring: the Cooperative Lakes Monitoring Program

Section 3 – Water and Nutrient Budgets

Section 4 – Holistic Management: Managing the Land and Water

Section 5 – Shoreline Management

Section 6 – Management of Aquatic Plants and Algae

Section 7 – Aquatic Exotic Invasive Species

Section 8 – Sediment and Dredging

Section 9 – Swimmers' Itch

Section 10 – Fish

Section 11 – Boating Regulations and Options

PART III: LAKE IMPROVEMENT BOARD ADMINISTRATION

Section 1 – General Overview of the Lake Improvement Board

A Lake Improvement Board (Lake Board) is a board established by a local unit of government to manage an inland lake. The Lake Board is charged with the responsibility of carrying out desired improvements and is governed by Public Act 451 of 1994, Part 309, as amended. The Lake Board may undertake projects related to the elimination of pollution and flood damage, elimination of water conditions that jeopardize the public health or safety, the improvement of a lake for conservation of fish and wildlife, and the improvement of a lake for fishing, wildlife, boating, swimming, or any other recreational, agricultural, or conservation use.

Summary of How a Lake Board Works

On public inland lakes, a Lake Board may be established by the governing body of a local unit of government (city, village, township or county) upon its own motion or by petition of 2/3 of the freeholders owning lands abutting the lake. Such action can be taken by the governing body of any local unit in which all or any part of the lake is located. On private inland lakes, a Lake Board can be established by petition only. Upon receipt of a petition(s), or on its own motion, the governing body of a local unit shall within 60 days establish a Lake Board. The Lake Board shall consist of the following:

1. A member of the county board of commissioners appointed by the chairperson of the board of commissioners of each county affected by the lake improvement project.
2. Two representatives from each local unit of government appointed by the legislative body of the local unit, if a lake with a Lake Board is totally within a particular Township; OR, if a lake with a Lake Board is located in more than one Township, then each Township appoints one (1) representative.
3. The county drain commissioner, or his or her designee, or a member of the county road commission in counties not having a drain commissioner.
4. A property owner, appointed by the Lake Board, who owns land abutting the lake. The homeowners' association may nominate three people for lake board membership. The government appointed members elect the property owner member from the nominees to serve a four-year term.

Lake Boards established under Part 309 must do the following:

1. Retain a registered professional engineer to prepare an engineering feasibility report, an economic study report and an estimate of project costs. The report must include a proposed special assessment district and a recommendation for the apportionment of benefits. The assessment district may include all parcels of land and local units benefited by the improvement project.
2. Hold a Public Hearing of Practicability to review the feasibility report, the proposed special assessment district, the apportionment of benefits and to determine the practicability of the project. The Lake Board must publish Notice of Hearing of Practicability twice in a newspaper of local circulation.

3. Once a project is determined to be practical and approved by the Lake Board and the special assessment district and an apportionment of benefits are determined, the Lake Board may then proceed to finalize the plans for the approved lake improvement project and prepare an assessment roll.
4. Before confirming the assessment roll, the Lake Board must hold a Hearing of Assessment to review and hear any objections to the assessment roll. Notice of the hearing must be published twice in a newspaper of local circulation as well as mailed to homeowners in the special assessment district.
5. After the hearing, the Lake Board may confirm the assessment roll and proceed with carrying out the approved lake improvement project.

Section 2 – Chronological Steps to be followed by a Lake Improvement Board

- 1) Formation of a Lake Board, Public and Private Lakes, Sections 30902 and 30904.
 - a) On public inland lakes, a Lake Board may be formed either by petition of 2/3 of the freeholders owning land abutting the lake or upon a motion of a local governing body.
 - b) On private inland lakes, a Lake Board may be formed only by petition of 2/3 of the freeholders owning land abutting the lake.
- 2) Resolution by Local Governing Body, Sections 30906 and 30908. In creating a Lake Board, the local governing body shall direct the Lake Board to do the following:
 - a) Institute proceedings as prescribed in the Part 309 to bring about the desired lake improvement.
 - b) Determine the scope of the project.
 - c) Establish a special assessment district including all parcels of land and local units which will be benefited by the improvement of the lake.
- 3) Lake Board Membership, Section 30903(1). The Lake Board shall consist of the following:
 - a) A member of the county board of commissioners appointed by the chairperson of the board of commissioners of each county in which the lake is located.
 - b) Two representatives from each local unit of government (City, Village or Township) in which the lake is located, OR, if a lake is located in more than one local unit of government than each governmental unit appoints one representative.
 - c) The drain commissioner, or his/her designee, or a member of the county road commission in counties not having a drain commissioner.
 - d) A property owner, appointed by the Lake Board, who owns land abutting the lake. The homeowners' association will nominate three people. From these nominees, one person will be appointed by the lake board to serve a four-year term.
- 4) Election of Officers, Section 30903(2). The first duty of the Lake Board is to elect a chairperson, treasurer, and secretary. A majority of the members shall constitute a quorum.
- 5) Selection of Engineer, Section 30903(1). The Lake Board shall retain a registered professional engineer to provide an engineering feasibility report, an economic study report and an estimate of cost. The report shall include, when applicable, recommendations for normal lake levels and the methods for maintaining such lake levels.
- 6) Engineering Feasibility Study, Section 30909(2) and (3). The engineering feasibility study, which is to be prepared by the selected engineering consultant, which may include the following:

- a) The methods proposed to implement the recommended improvements.
 - b) An investigation of the groundwater conditions and possible effects on lake levels from removal of bottom materials (if applicable).
 - c) A study of existing nutrients in the lake and a projection of future lake conditions which may result from a reduction in nutrient levels.
 - d) An estimate of project costs.
 - e) Probable assessments for the project to individual property owners.
 - f) An economic report which analyzes the existing local tax structure and the effects of the proposed assessment on the local unit(s) of government involved.
- 7) Funding by County Board of Commissioners, Sections 30905 and 30911. The county board of commissioners may provide for a revolving fund to pay for preliminary costs of improvement projects. Such funds must be repaid on collection of funds from the assessment district. The county board may also provide up to 25% of the cost of a lake improvement project on any public inland lake.
 - 8) (Note: *Bond Counsel. If bonding is anticipated as a means of financing the lake improvement project, bond counsel should be retained as early in the project as possible. Whether bonding is needed depends on the cost of the project. Normally, only dredging projects require bonding because of the high cost of such projects. Bond counsel, if needed, can provide valuable assistance to a Lake Board to ensure that the necessary legal steps are taken so that bonds can be sold without problems or defaults.*)
 - 9) Hearing of Practicability, Section 30910. Within 60 days following receipt and final acceptance of the engineering feasibility study, the lake board shall hold a public hearing to review the report and to determine the practicability of the project. Notice of the hearing must be published twice in a newspaper of general circulation in each local unit of government affected. The first publication shall not be less than 20 days prior to the time of the hearing. (Note: *Part 309 does not require notice of the hearing of practicability to be sent by first class mail to all residents within the proposed special assessment district. However, it is recommended that Lake Boards do so.*) The lake board shall, by resolution, determine the practicability within 10 days after the hearing. The resolution shall be published once in a newspaper of general circulation in each local unit to be affected.
 - 10) Preparation of Assessment Roll, Section 30912. After finally accepting the special assessment district, the Lake Board shall prepare an assessment roll based upon benefits to be derived from the proposed lake improvement and shall direct the assessing official of each local unit of government to be affected to join in making the assessing roll.
 - 11) Public Hearing and Confirmation of Assessment Roll, Section 30913. After the assessment roll is reported to the Lake Board by the local assessing officials, the Lake Board shall hold a public hearing on the assessment roll. Notice of the hearing must be published twice in a newspaper of general circulation in each local unit of government affected. The first publication shall not be less than 10 days prior to the time of the hearing. Notice of the public hearing must also be mailed first class to all property owners in the special assessment district in accordance with Act 162, Public Acts of 1962. After the hearing, the Lake Board may confirm the assessment roll as reported, or as amended or corrected by it, or may refer it back to the assessing officials for revision, or may annul it and direct a new roll to be made. When an assessment roll has been confirmed, the Lake Board shall direct the assessments therein to be collected, and the clerk of each local unit shall endorse therein the date of

confirmation. Notice of confirmation of the special assessment roll must be published in the same manner as the notice of the public hearing on the roll.

- 12) Project Financing, Section 30922. Lake boards have three methods to finance lake improvement projects in anticipation of the collection of special assessment. They are:
 - a) Borrow money from a local lending institution.
 - b) Issue lake level orders. These are promissory notes issued to the contractor that promises payment upon collection of funds from the special assessment district. In cases where contractor does not wish to hold such a note, a purchaser for the lake level orders would have to be found. In some cases, local units of government have purchased lake level orders.
 - c) Bonding. (Note: *Bond counsel may not render a favorable opinion on the salability of bonds issued under Part 309 of Act 451. Therefore, it is recommended bonds be sold under a different statute, but may be paid for via the special assessment district established by the Lake Board.*)
- 13) Advertising for and Letting of Contract, Section 30926(1) and (2). Except as provided below, the chairperson of the Lake Board shall advertise for bids. The contract shall be let to the lowest bidder giving adequate security for the performance of the contract, but the Lake Board shall reserve the right to reject any and all bids. The Lake Board may contract with a local homeowner association without advertising for public bids provided the homeowner association can provide adequate security for the performance of the contract. There should be a contract between the homeowner association and the Lake Board.
- 14) Computation of Project Costs, Section 30927. Within 10 days after the letting of contracts, or after appeals have been decided, the lake board shall make a computation of the entire cost of a project.
- 15) Further Lake Board Meetings. After letting of the contract(s), the Lake Board will need to meet periodically to review the progress of the project and to take action on the payment of bills. As part of the property tax bill, unpaid assessments are forwarded by the township to the County treasurer for collection. The County Treasurer pays the assessment to the Lake Board and adds it to the lien placed against the property.

Section 3 – Establishing Petition and Township Resolution

Upon receipt of a petition, or on its own motion, the governing body of a local unit will within 60 days, by resolution, establish a Lake Board. Below are a sample petition (Box III.3.1) to collect freeholder signatures and a sample township resolution (Box III.3.2) to establish the lake board.

Sometimes in the resolution the township will not give the Lake Board the unlimited authority to determine the scope of the project. Instead the resolution will indicate that the lake board will do a specific project to address a specific issue. This limits the authority of the Lake Board, which is sometimes desired in some communities. However, if at a later date the community wishes to change the scope of the lake management project to include elements not identified in the establishing township resolution, it is necessary to have the resolution modified by the township and new proceedings initiated. This requires the Lake Board to initiate new proceedings at the very beginning.

Box III.3.1. Sample Petition

WHEREAS, the undersigned are two-thirds (2/3) of the freeholders owning land abutting (*name of lake*) Lake, located in the (*city/village/township*) of (*county*) and by their signature on this Petition attest that they desire to conserve the natural resources of the State of Michigan and to preserve property values around (*name of lake*) Lake, and further they believe that the creation of a Lake Improvement Board for (*name of lake*) Lake will protect the public health, welfare, and safety of the residents on (*name of lake*) Lake.

NOW, THEREFORE, the undersigned do respectfully petition the (*city/village/township*) Board of the (*city/village/township*) of (*county*) to set up a Lake Improvement Board for (*name of lake*) Lake under the provisions of Part 309 of Act No. 451 of Public Act of 1994, as amended, within sixty (60) days of their receipt of this Petition.

"Signature" Name	"Print" Name	Address	Description of Property Owned	Date

STATE OF MICHIGAN

COUNTY OF _____

_____ being duly sworn, deposes and says that he/she circulated the foregoing petition and that each signature thereto is the genuine signature of the person whom it purports to be.

Subscribed and sworn before me this _____ day of _____, 20__ .

Notary Public, _____ County, Michigan
My Commission Expires: _____

Box III.3.2. Sample Resolution

The Charter Township of _____ ordains:

WHEREAS, _____ Lake is located within the territorial boundaries of the Charter Township of _____, and

WHEREAS, a petition to establish a lake improvement board has been submitted to the Township Board of the Charter Township of _____ bearing the signatures of two-thirds (2/3) of the freeholders owning land abutting the lake, and

WHEREAS, the Township Board determines that the establishment of a lake improvement board under Part 309 is necessary to conserve the water quality of the lake and to preserve the property values around the lake,

NOW, THEREFORE, BE IT RESOLVED, that the _____ Lake Board of the Charter Township of _____ be hereby established. The Township Board shall hereafter appoint the board members pursuant to Sec. 4 of Part 309. The lake improvement board shall thereafter institute proceedings as prescribed in Part 309 to bring about the desired lake improvement, determine the scope of the project, and establish a special assessment district including all parcels of land and local units which will be benefited by the improvement of the lake.

AYES: _____

NAYS: _____

ABSENT: _____

Motion carried.

STATE OF MICHIGAN

COUNTY OF _____

I, THE UNDERSIGNED, the duly elected and qualified Clerk of the Charter Township of _____, do hereby certify that the above _____ Township resolution is a true and accurate copy of the resolution adopted by the _____ Township Board at a regular meeting held _____.
(date)

IN WITNESS WHEREOF, I hereto affix my official signature the _____ day of _____.

_____, Clerk
(name)

Section 4 – Election of Lake Board Officers and Duties

The first duties of the Lake Board is to elect officers as follows:

- Chairperson
- Secretary
- Treasurer

Often the Lake Board will elect a temporary Chairperson until the citizen representative has been elected. After the citizen representative has been appointed, than all the elected positions are filled. This allows the citizen representative to be available to fill any of the Lake Board officer positions.

Further responsibilities of the Lake Board members:

Chairperson:

- Shall advertise for bids for lake projects
- Prepare Agendas for the Lake Board meetings
- Run the Lake Board Meetings

Secretary:

- Record and distribute Lake Board minutes
- Prepare information for Lake Board meetings
- Prepare information for legal ads
- Prepare individual notices for the feasibility hearing and mail (not required but almost always done)
- Request assessment roll from local governing body assessor
- Prepare individual assessment notices to be mailed 1st Class to homeowners in assessment district. mail or direct assessor's office to mail notices.
- Maintain all Lake Board records
- Maintain a permanent "legal" file

Treasurer:

- Pay all Lake Board bills. If the township is acting as the fiduciary, follow-up to verify the township treasurer has paid invoices and the preapproved bills/invoices submitted by the Lake Board
- Maintain all Lake Board financial records
- Create financial reports and oversee annual budgets. Annual budget must be adopted before any money can be expended by the Lake Board.

Lake Board:

- Contracts with licensed professional engineer for feasibility study
- Professional engineer identifies the possible boundaries of the special assessment district
- Local assessor(s) verifies which properties within the district have lake access
- Lake Board and professional engineer will develop units of benefit rates
- Advertise for public Hearings and meetings
- Determine practicability of project at public hearings
- Award contracts with contractor or homeowner's association for projects
- Hold assessment hearing
- Confirm special assessment
- Direct clerk of local governing body(s) to collect assessments
- Take action to approve payment of the Lake Board's expenses as submitted by Lake Board members
- Act annually on delinquent assessments, as reported

Local Assessor(s):

- Shall prepare assessment roll for Lake Board assessment district
- Provide assessment roll to Lake Board Secretary to assist in the preparation of 1st Class individual homeowner mailings
- If directed by Lake Board, mail 1st Class individual homeowner notices.
- Report assessment roll to Lake Board
- Certify assessment roll
- File assessment roll with Clerk to collect assessments

Section 5 – Lake Improvement Board Meeting Documents

Lake Boards will have many documents that they use in their proceedings. Examples of these documents are provided below and include: meeting notice (Box III.5.1.), agenda (Box III.5.2.), meeting sign in sheet (Box III.5.3.) meeting minutes (Box III.5.4.), letters requesting proposals for professional service (Box III.5.5.), and proposal request document (Box III.5.6.).

These documents are important and should become part of the legal file for the Lake Board. Notices of Lake Board meetings must be posted 18 hours prior to the time of the meeting in accordance with the Michigan Open Meetings Act (P.A. 267 of 1976). To find consultants to receive the letter for professional service, check with the internet, professional society newsletters, such as the Michigan Association of County Drain Commissioner's publication *Pipeline* or Michigan Lake and Stream Associations' publication *The Riparian Magazine* and contact other Lake Boards for a list of consultants they have interviewed or used.

Box III.5.1. Sample Meeting Notice

**NOTICE OF MEETING OF THE
LAKE IMPROVEMENT BOARD
FOR**

_____ **LAKE**

A meeting of the Lake Board for _____
will be held on _____ at _____
(date) (time)

at the _____
(location)

Posted: _____ (date posted)
_____ (time posted)

NOTE: Notices of Lake Improvement Board meetings must be posted 18 hours prior to the time of the meeting in accordance with the Michigan Open Meetings Act, Act 267 of 1976.

Box III.5.2. Sample Meeting Agenda

**AGENDA
_____ LAKE
LAKE IMPROVEMENT BOARD MEETING
(date)**

- I. Call meeting to order
- II. Introduction of Members and Guests
- III. Presentation of Meeting Notice as posted
- IV. Brief explanation of Procedures
- V. Receive Resolution(s) from Local Governing Unit(s) creating Lake Board
- VI. Discuss proposal for Engineering Feasibility Study
- VII. Discussion/development of Special Assessment Roll(s) by Local Governing Unit(s)
- VIII. Public Comment
- IX. Other Business
- X. Adjournment

Box III.5.4. Sample Lake Board Meeting Minutes

LAKE IMPROVEMENT BOARD MEETING MINUTES

_____ (DATE)
The meeting of the Lake Improvement Board for _____ Lake was held at _____, on the _____ day of _____, 20___. The meeting was called to order by _____, (Chairperson, Secretary, etc.), at _____ (time)

Present: (Board Members Present)
Absent: (Board Members Absent)
Also Present: (Guests)

APPROVAL OF MINUTES:

It was moved by _____, supported by _____, to approve the minutes of the Lake Improvement Board meeting held _____.

Adopted: Yeas: ___ OR *Motion Carried Unanimously*
Nays: ___

PRESENTATION OF LAKE BOARD TREASURER'S REPORT AND INVOICES:

It was moved by _____, supported by _____, to approve invoice number _____, for payment in the amount of \$ _____ to _____.

Adopted: Yeas: ___ OR *Motion Carried Unanimously*
Nays: ___

OLD BUSINESS:

NEW BUSINESS:

PUBLIC COMMENT: (IF ANY)

ADJOURNMENT:

There being no additional business, it was moved by _____, supported by _____, that the _____ meeting of the Lake Improvement Board for _____ Lake be adjourned at _____ (time)

Adopted: Yeas: ___ OR *Motion Carried Unanimously*
Nays: ___

STATE OF MICHIGAN

COUNTY OF _____

I hereby certify that the foregoing is a true and complete copy of the minutes of the Lake Improvement Board for _____ Lake, _____ County, Michigan held on the ___ day of _____, 20__ and that the said minutes are on file at the Office of the _____ County Drain Commissioner and are available to the public. I further certify that notice of the meeting was posted at least 18 hours before the meeting at the Office of the _____ County Drain Commissioner, which is the principal office of the Lake Improvement Board for _____ Lake.

(Name)

Lake Improvement Board Secretary
Dated: _____

Box III.5.5. Sample Letter Requesting Professional Services

LETTER SENT TO ATTACHED LIST

Interoffice Copies:

_____ Lake Board File

Reference: _____ Lake Board, _____ Township

_____ County, Michigan

Gentlemen:

The _____ Lake Improvement Board wishes to receive proposals for professional engineering services to undertake a study and to prepare a report for improvement of _____ Lake.

Attached is a copy of the "Request for Professional Services" which provides the necessary details. Please submit your proposals no later than 5:00 p.m. on _____ (date) to the following:

_____ Lake Improvement Board
c/o _____ County
Drain Commissioner's Office
_____ (address)
_____ (address)
Attention: _____

At the Lake Board's option, low bidders may be requested to make a presentation at a meeting of the _____ Lake Improvement Board to explain their proposal.

Very truly yours,

_____ LAKE IMPROVEMENT BOARD

Attachments

cc: w/attachments: Lake Improvement Board Members

Box III.5.6. Sample Proposal Requesting Professional Services

The _____ Lake Board is seeking the services of a licensed, professional engineer to evaluate the lake and its berms, and to present recommendations for its improvement. _____ Lake is a ____ acre lake and is located in portions of _____ Township in _____ County, Michigan.

As required by Public Act No. 451 of 1994, Part 309, Inland Lake Improvements, as amended, the services will involve preparation of an engineering feasibility report, an economic study report, and estimates of cost. The following items, while not all inclusive, will each be considered for study and report:

1. Evaluation of all lake berms for structural integrity and stability at the legal lake level of _____ feet above sea level, including recommendations for repair and future maintenance.
2. Analyze aquatic plant growth and make recommendations for removal and control. Prepare a map which shows the locations and types of aquatic vegetation, and approximate lake bottom contours.
3. Determine the lake water quality with respect to oxygen content and its relationship to fish population; determine possible adverse effects of stratification, and recommend whether aeration and/or other water conditioning are required.
4. Determine the lake water quality using the following listed parameters and recommend appropriate action to improve water quality:
 - a. pH
 - b. Oxygen concentration
 - c. Phosphorous concentration
 - d. Nitrogen concentration
 - e. Chlorophyll a concentration
 - f. Secchi disk transparency
 - g. Theoretical nutrient budget
5. Prepare estimates of costs for each of the above items, individually, with an analysis of effects of proposed assessments on interested landowners and residents.
6. Estimate how long it will take to complete the study report. State when you will be available to work on the study.
7. Please provide references of similar projects you have completed in the past.

Interested registered professional engineering firms possessing expertise in lake improvement projects are invited to submit a proposal including fees for services. Fees are to be quoted as Lump Sum not to exceed a Maximum Amount.

Please submit two copies of proposals in a sealed envelope to:

(Lake Improvement Board Secretary)

_____ Lake Improvement Board

_____ (address)
_____ (address)
_____, Michigan 4_____

It is anticipated that the contract for services will be awarded to a firm qualified to perform this type of work for the most appropriate fee. The award of contract will also be contingent upon the approval of a special assessment roll to finance the cost of the engineering feasibility study. The _____ Lake Improvement Board reserves the right to reject any and all proposals received. Selection of the professional engineering firm will be made by the _____ Lake Improvement Board and its decision will be final.

Section 6 – Hearing of Practicability and Hearing of Assessment

After the engineering consultant hired by the Lake Board has completed the feasibility study report, the Lake Board will need to hold two public hearings. The first hearing addresses the project being proposed by the consultant's report, and is called the "Hearing of Practicability". The consultant's report will include the recommended activities, their costs and how the costs will be spread within the assessment district to pay for the project. The hearing will allow citizens to learn about the recommendations for action and to comment on them. If the proposed project is accepted the Lake Board will hold a second hearing to determine if the cost of the project to be paid by each property owner in the special assessment district has been properly calculated. This hearing is called the "Hearing of Assessment".

For the Hearing of Assessment the special assessment roll must be mailed 1st class to each property owner in the special assessment district in accordance with Act 162, Public Act of 1962. The mailing must include the individual's name, address, the property number of the property, and the time and place of the hearing and the type of project the assessment is supporting. An owner of or party to interest in real property to be assessed may appear in person to protest the special assessment or may protest the special assessment by letter filed with the Lake Board, at or prior to the time of review, in which case personal appearance is not required. If the special assessment is protested as provided above, the owner or any party having interest in the real property may file a written appeal of the special assessment with the Michigan Tax Tribunal within 30 days of confirmation of the Special Assessment Roll being published in a newspaper of general circulation.

The Lake Board has the option of holding the two hearings on the same evening or conducting them separately. The hearings are usually held on separate evenings for the initial funding cycle. This allows adjustments to be made to the recommended actions and costs from comments received in the Hearing of Practicability before holding the Hearing of Assessment. In subsequent funding cycles, if the community has accepted and approves of the project and its costs, it is more efficient to hold the hearings on the same evening.

For the Hearing of Practicability within 60 days of receiving and accepting the Feasibility Study the Lake Board will take the following actions:

1. Hold a public hearing to review the consultant's report and "determine the practicability" of the project.
2. Publish a hearing notice twice in a newspaper of general circulation in each local unit of government affected. The first publication shall not be less than 20 days prior to the time of the hearing. Sample letters to the local newspaper and hearing of practicability notice are provided in Box III.6.1. and Box III.6. 2. respectively.
3. Note: The law does not require Notice of Hearing of Practicability to be sent by first class mail to all residents within the proposed special assessment district. However, the Lake Board can determine this. Sending first class mail notices can greatly reduce confusion and conflict among citizens who will be included in the special assessment district.

4. By resolution, determine the practicability of the project and costs within 10 days after the hearing, or at the time of the hearing. The resolution must be published once in a newspaper of general circulation in each local unit to be affected.

For the Hearing of Assessment the Lake Board will undertake the following actions:

1. Obtain from the local assessor a copy of the proposed assessment roll with the amounts of the individual assessments, property description and names of the owners.
2. Keep one copy of the assessment roll at the county drain commissioner's office and another at the township(s) office for the residents to examine.
3. Also, obtain a set of mailing labels for the assessment district for the first class mailing.
4. Note: Do not schedule the hearing until the proposed assessment roll and mailing labels have been received. The assessment hearing legal notice states that a copy of the assessment roll will be available for public examination, so the roll needs to be available before the ad is placed.
5. Publish twice in a newspaper of general circulation in each local unit of government affected. The first publication shall not be less than 10 days prior to the time of the hearing. Sample letters to the local newspaper and hearing of assessment notice are provided in Box III.6.1. and Box III.6. 3. respectively.
6. Provide a notice of the public hearing to all property owners in the special assessment district by first class mail (see Box III.6.4. for a sample letter).
7. After the hearing, the Lake Board may confirm the assessment roll as reported, as amended, as corrected by it, or may annul it and direct a new roll be made.
8. When an assessment roll has been confirmed, the Secretary of the Lake Board shall send a letter to the local assessing official(s) directing the assessments therein be collected, and the Clerk of each local unit shall endorse therein the date of confirmation.
9. Notice of Confirmation of the special assessment roll must be published twice in the same manner as the Notice of the Public Hearing in a newspaper of general circulation.

Items to have at the Hearing of Practicability or Assessment

Sign-in sheet	Legal and correspondence files
Pens or pencils	Index cards (for those who wish to speak)
Tape recorder – blank tapes	Extension cord
Hearing agenda	Extra copies of agenda
Map(s) of lake and community	Special assessment district map
Minutes from last meeting	Copy of notice of hearing
Copy/legal advertisement	Copy of feasibility study
Letters from public	Copy of 1st class mailing
Copy of assessment roll for assessment hearing	

Box III.6.1. Sample Letter to Local Newspaper for Publication of Hearing Notice

January 2007

Ms. _____
_____ Column Newsweekly
Legal Ad Department
P.O. Box _____
_____, Michigan _____

Reference: **Notice of Hearing for the Lake Improvement Board for _____ Lake**

Dear Ms. _____:

Please publish the enclosed Legal Notice in the following editions of your newspaper:

Wednesday, July 24, 20__
Wednesday, July 31, 20__

Please provide this office with one (1) Affidavit of each publication and bill the Lake Improvement Board for _____ Lake for the cost. The Affidavit and bill should be sent to:

(Lake Board Secretary)
Lake Improvement Board for _____ Lake

Very truly yours;

, Secretary

Enclosure
cc: Lake Improvement Board Members
Lake Improvement Board File
Treasurer (municipality)

Box III.6.2. Sample Hearing of Practicability Notice Sent to Local Newspaper

**CHARTER TOWNSHIP OF _____
_____ COUNTY, MICHIGAN
NOTICE OF PUBLIC HEARING
_____ LAKE – LAKE IMPROVEMENT BOARD
SPECIAL ASSESSMENT DISTRICT NO. _____
HEARING OF PRACTICABILITY
OCTOBER 10, 20____
TO THE OWNERS OF THE FOLLOWING DESCRIBED PROPERTIES:**

T2N, R10E, Section 7, all properties abutting and/or with _____ Lake,
_____ Township, Michigan, _____ County, Michigan.

Notice is hereby given that the Lake Board for _____ Lake, Charter Township of _____, County of _____, will meet on **Tuesday, October 10, 20____**, _____ **Township Hall**, _____ **Road, 4:00 p.m.**, to hear and consider the practicability of **(proposed activity)** for the _____ **Lake**. All interested persons are welcome to attend and comments will be heard. Residents can review the engineering evaluation and assessment district by accessing the following website:

[http://www._____](http://www._____.)

The engineering evaluation may also be viewed at the following locations:

This Hearing is called pursuant to the provisions of Part 309, P.A. 451 of 1994, as amended March 1, 2005.

_____ Lake-Lake Board
Ms. _____
_____ TOWNSHIP CLERK

Box III.6.3. Sample Hearing of Assessment Notice Sent to Local Newspaper

**CHARTER TOWNSHIP OF _____
_____ COUNTY, MICHIGAN
NOTICE OF ASSESSMENT HEARING
_____ LAKE – LAKE IMPROVEMENT BOARD
SPECIAL ASSESSMENT DISTRICT (S.A.D.) NO. _____
FEBRUARY 5, 20____**

TO THE OWNERS OF THE FOLLOWING DESCRIBED PROPERTIES:

T2N, R10E, Sections 17 and 18, all properties abutting and/or with access to _____ Lake,
_____ Township, _____ County, Michigan.

Notice is hereby given that the Lake Board for _____ Lake, Charter Township of _____,
County of _____, will meet on **Monday, February 5, 20____**, _____ **Township Hall**,
_____ **Road, 4:00 p.m.**, to review, hear any objections to, and confirm a Special Assessment
Roll. Riparian parcels are assessed \$_____ and lake access parcels are assessed \$_____ per
year.

Any person may appeal and be heard at the said Hearing, which is called pursuant to the
provisions of Part 309 of Public Acts No. 451 of 1994, as amended, provides that the special
assessment must be protested at the Hearing held for the purpose of confirming the special assessment
roll before the Michigan Tax Tribunal may acquire jurisdiction of any special assessment dispute.
Appearance and protest of the special assessment the time and place of review is required in order to
appeal the amount of the special assessment to the Michigan Tax Tribunal. An owner of or party in
interest in property to be assessed, or his or her agent, may appear in person to protest the special
assessment or may protest the special assessment by letter filed with **Ms. _____, Clerk**,
_____ **Township**, _____ **Road**, _____, **MI _____**, prior to the time of review, in
which case personal appearance is not required. If the special assessment is protested as provided
above, the owner or any party having an interest in the real property may file a written appeal of the
special assessment with the Michigan Tax Tribunal within 30 days after the confirmation of the special
assessment roll has been published in a newspaper of general circulation.

Ms. _____
_____ Township Clerk

Box III.6.4. Sample Letter to Property Owners for the Assessment Hearing

NOTICE OF ASSESSMENT HEARING
LAKE IMPROVEMENT BOARD FOR _____ LAKE
TOWNSHIP OF _____, _____ COUNTY, MICHIGAN

February 13, 20__

(Individual Homeowner)

SIDWELL NUMBER: _____ UNITS(S) OF BENEFIT: 1.0

PROPOSED ANNUAL ASSESSMENT: \$ _____

NOTICE IS HEREBY GIVEN that the Lake Improvement Board for _____ Lake, Township of _____, County of _____, will meet at _____, _____ Conference Room, _____, _____, Michigan, at _____ P.M. on _____, _____, 20__. The meeting will be to review, to hear any objections to, and to confirm a Special Assessment Roll for the purpose of the continuation of a Lake Improvement Program for 20__, 20__ and 20__. Any person may appeal and be heard at the said Hearing, which is called pursuant to the provisions of Section 30913 of Act 451 of the Public Acts of 1994, as amended.

The total proposed Special Assessment Roll, to be collected annually is estimated at \$_____.00 that will be assessed approximately \$_____ per lot. The Special Assessment Roll is on file at the _____ Township Offices for public examination.

An owner of or party in interest in property to be assessed, or his or her agent, may appear in person to protest the Special Assessment, or may protest the Special Assessment by letter filed with the Township of Waterford at or prior to the time of review, in which case personal appearance is not required. Appearance and protest of the Special Assessment at the time and place of review is required in order to appeal the amount of the Special Assessment to the Michigan Tax Tribunal.

LAKE IMPROVEMENT BOARD FOR _____ LAKE
_____, CHAIRMAN

Section 7 – Financing Projects

Lake Boards have three methods available to finance lake improvement projects in anticipation of the collection of special assessment. They are:

1. Borrow money from a local lending institution. Sometimes a local unit of government will create a revolving fund from which the Lake Board may borrow money and then repay the revolving fund when the special assessments are collected.
2. Issue lake level orders. These are promissory notes issued to the contractor that promises payment upon collection of funds from the special assessment district. In cases when the contractor does not wish to hold such a note, a purchaser for the lake level orders would have to be found, in some cases, local units of government have purchased lake level orders.
3. Bonding is permitted by the statute, but most Lake Boards have been advised to use other statutory authority if bonding a project is necessary.

Most Lake Boards will borrow money only to pay for the feasibility study and other initial costs, such as public notices. The actual project is not initiated until the first special assessment is collected and available for expenditure. This could be 12 to 18 months or longer after the first meeting of the Lake Board.

Once funds are available to begin the project the chairperson of the Lake Board will advertise for bids. The contract must be awarded to the lowest bidder giving adequate security for the performance of the contract, but the Lake Board may reserve the right to reject any and all bids. The Lake Board may contract with a local, incorporated, nonprofit homeowner association, the membership of which is open on a nondiscriminatory basis to all residents within the geographic area to be assessed or serviced, without advertising for public bids provided the homeowner's association can provide security for the performance of the contract.

Box III.7.1. provides an example bid document that would go to possible contractors who would conduct the work the Lake Board and local community is proposing to undertake. Once a contractor is selected a contract would be entered into between the Lake Board and the selected contractor. Box III.7.2. gives an example contract. Example specifications for the contract are presented in Box III.7.3.

Box III.7.1. Sample Bid Document

BID DATE: _____
BID TO: _____ Lake Board

_____, Michigan _____
BID FROM: _____(Company Name of Bidder)
_____(Company Address)
_____(Company Address)
_____(Telephone Number)

In compliance with your invitation for bids, bidder hereby proposes to perform all work related to aquatic plant control of:
_____(Township)
_____(County), Michigan

- In strict accordance with the contract documents, within the time set forth therein, and at the prices stated below.
- By submission of this bid, the bidder certifies that this bid has been arrived at independently without consultation, communication or agreement as to any matter relating to this bid with any other bidder or with any competitor.
 - Further, the bidder also certifies that he/she has examined the contract documents and the location of the work described herein and is fully informed as to the nature of the work and the conditions relating to its performance.
 - The bidder understands that the acreage listed is approximate only and subject to either increase or decrease. The bidder agrees that the unit prices named will be used if additions or deductions are made to the quantity of work.
 - The bidder shall include and be deemed to have included in his bid all Michigan sales and use taxes currently imposed by legislative enactment and as administered by the Michigan Department of Revenue on the bid date.
 - All work described in the contract documents and required for completion of the project shall be considered as incidental work unless designated as a pay item on the Bid Form.

The undersigned, having familiarized himself/herself with the instructions to bidders and the specifications, hereby proposes to perform everything required and to provide and furnish all of the labor, materials, equipment, and all utility and transportation services necessary to perform and complete all the work required for aquatic plant control and removal on Lake _____ in a workmanlike manner, all in accordance with the specifications at and for the following named price to wit:

ITEM DESCRIPTION	BASIS OF BID	BID PRICE
Aquatic Plant Control	_____ Cost Per Acre	\$_____ Per Acre

Statement of equipment materials proposed to be utilized on _____ Lake: Trucks (model, year, and date of purchase); Harvesters (state manufacturer, model, year, depth of cut, width of cut and date of purchase); Herbicides (if any are to be used); and personnel to be used. Also include estimated time to complete the treatment.

Contract extensions beyond calendar year 20__ at the amount bid, plus three percent of the base bid per year, are contingent upon the discretion of the Board.

In the interest of expediting the award of this contract, the undersigned may be required to show that he/she has performed work similar to that included under the proposed contract for which this bid is offered.

In submitting this bid, it is understood that the right is reserved by the Board to reject any and all bids and to waive defects in the bids.

Signed this _____ day of _____, 20__

SIGNATURE: _____ **NAME AND TITLE:** _____
(Printed)

Box III.7.2. Sample Contract for Work to be Completed

CONTRACT

THIS AGREEMENT, made and entered into this day _____ of _____, 20____, by and between the _____ Lake Improvement Board hereinafter called the "Board" and _____ hereinafter called the "Contractor", to wit:

1. That the bid form, instructions to bidders, insurance requirements, specifications and addenda hereto attached or herein referred to, shall be and are hereby made a part of this agreement and contract.
2. That the Contractor shall furnish all labor, materials and equipment necessary and do all the work as set forth in the bid according to the specifications and contract documents, which have hereinbefore been made a part of this contract in a manner, time and place as herein set forth.

IN CONSIDERATION WHEREOF, said Board promises and agrees to pay to said Contractor the sum provided in the attached bid, dated _____, 20____, \$ _____ per acre (_____ dollars/acre).

Payment shall be made upon satisfactory completion of the _____ work based on a review of the daily log records and a visual inspection by the Board's Consultant.

For the faithful performance of all of the stipulations, terms and conditions of this agreement, said parties respectfully bind themselves and their successors, heirs, executors, administrators and assign.

IN WITNESS WHEREOF, the parties have hereunto set their hands, in duplicate, the day and year first above written.

_____ **LAKE
LAKE IMPROVEMENT BOARD**

By: _____ Name: _____ Title: _____
(Signature) (Printed)

WITNESS: _____ Name: _____
(Signature) (Printed)

Contractor

By: _____ Name: _____ Title: _____
(Signature) (Printed)

WITNESS: _____ Name: _____
(Signature) (Printed)

Box III.7.3. Sample Contract Specifications

1. DESCRIPTION OF WORK

The work shall consist of ...

2. SPECIFICATIONS FOR THE _____ LAKE BOARD CONTRACT

The scope of work shall be limited to that provided for in this agreement and specifically these Specifications. In no event shall the work conducted by Contractor exceed the scope of work authorized by section 30902 of the Natural Resources and Environmental Protection Act being MCL 324.309902.

a. Aquatic plant control shall consist of ...

b. Contractor shall keep records in a format to be provided by the Lake Improvement Board and available for review as basis for all work completed.

c. Contractor, at its sole expense, shall comply with all federal, state and local statutes or ordinances and obtain any permits necessary to accomplish the work under this agreement.

3. TIME OF COMPLETION

Work under this contract shall consist of a regular schedule ... and begin on or after May 1 of each year, and to conclude on or before October 31 of each year.

4. TERM OF CONTRACT

The work will be performed each year for five (5) years, beginning in December of 20__ and continuing through December 20__, unless terminated.

5. TERMINATION AND OPTION TO RENEW

a. This contract shall terminate at the conclusion of the term of the contract as provided herein. In addition, during the term of the contract, the Board has sole right to terminate this contract prior to the expiration of the term if for any reason the Board is dissatisfied with the services provided by the Contractor. Should the Lake Improvement Board exercise its option and terminate this contract, a 30-day written notice must be provided to Contractor.

b. The Board shall have the right to renew or extend this Agreement.

c. As a condition to entering into this Agreement and any subsequent extension, the Contractor shall provide upon request of the Board, copies of the Contractor's federal tax returns and statement of revenue and interest earned by Contractor.

6. SUBCONTRACTORS

a. Contractor shall not transfer, sublet, or subcontract any portion of the work required under this Agreement without the prior written consent of the Board.

b. In the event that the Contractor desires to request the Board's approval to subcontract any portion of this contract, the name(s) and qualifications of any subcontractor shall be submitted to the Board. If the Board agrees to permit Contractor to subcontract any portion of this contract, Contractor shall accept full responsibility for the performance of any subcontractor. All provisions of this contract shall apply equally to any subcontractor. Contractor indemnifies the Board as to subcontractor and will ensure that the Board is protected from any liability that may occur as a result of any subcontractor's performance under this Agreement. The Board shall in no way be obligated to approve any request for consent to subcontract merely by virtue of Contractor's submission of such a request.

7. PAYMENT

The Board promises and agrees to pay the Contractor in a timely manner for the cost to complete the work. It is understood that services under this agreement are contingent upon Board's appropriation of the necessary funds on an annual basis to utilize these services, and therefore the total amount shall not exceed the approved budget unless approved by the Board.

On or before May of each year, the Contractor shall submit an invoice to the Board's Contract Administrator or other designee for partial payment on account for contracted work. Within 30 days of the end of the calendar year, the Contractor shall submit a final invoice with its year-end report to the Board's Contract Administrator or other designee for all expenses for work performed less the partial payment on account with and any other payments made, with the difference settled between the parties within thirty (30) days after approval by the Board.

The Board reserves the right to make partial payments on account of the amount due Contractor as the services progress. The Board shall have no obligation to make payment until a proper invoice of service is submitted.

The Board, the Board's consultant or at its direction, the Lake Property Owners Association, may inspect and certify the amount of work satisfactorily performed.

(continued on next page)

Box III.7.3. Sample Contract Specifications (continued)

8. INSURANCE REQUIREMENTS

a. Contractor shall not commence work, nor allow any subcontractor to commence work, under this contract until all insurance requirements stated in this section have been complied with.

b. Contractor shall procure and maintain during the life of this contract, except where otherwise indicated, the following insurance coverage:

1. **WORKER'S COMPENSATION** – Insurance affording coverage in accordance with the Worker's Compensation Laws of the State of Michigan. In addition, coverage included for Employer's Liability shall provide a limit of liability of not less than \$100,000.00.

2. **COMPREHENSIVE GENERAL LIABILITY** – Providing not less than \$1,000,000.00 Combined Single Limit Comprehensive policy (bodily injury, property damage and contractor's protective liability).

3. **COMPREHENSIVE AUTO** – Insurance affording fleet automatic coverage on all owned, non-owned or hired vehicles with limits of liability of not less than \$250,000.00 per person and \$500,000.00 per occurrence for Bodily Injury Liability and \$100,000.00 Property Damage Liability per occurrence.

c. **NOTICE OF REDUCTION OR CANCELLATION** – All policies affording the various coverage required by this section shall be endorsed to provide for a 10-day prior written notice to be delivered to the Lake Improvement Board for Lakeville Lake before any of the coverage afforded by these policies are either reduced or canceled.

d. **ADDITIONAL NAMED INSURED** – In the policies to be issued as required herein, the named insured shall include the County of _____, the Lake Improvement Board for _____ Lake and the individual members of the Lake Improvement Board for _____ Lake.

e. **OWNERS PROTECTIVE ENDORSEMENT** – The policies shall include an Owners Protective Endorsement for the Board for _____ Lake.

9. CERTIFICATE OF INSURANCE

Certificates of Insurance for the coverage shall be delivered to the Board for _____ Lake. These certificates shall clearly indicate that the provisions of the applicable policy are in compliance with all requirements of this section. If coverage confirmed by these certificates will expire prior to the termination date of this contract, certificates for renewals must be delivered to the Board prior to the expiration date.

10. HOLD HARMLESS AGREEMENT

Contractor shall indemnify and save harmless _____ County, its elected officers and employees, the Board for _____ Lake and the individual members of the Board for _____ Lake from any and all claims, demands, payments, attorney fees, suits, actions, recoveries, and judgments, or every name and description brought or recovered against them or either / or any of them for or on account of any injuries to or death of any person or any other loss or damages to persons or property received or sustained by any person or persons whatsoever by reason of the performance of the work of this contract, and on account of liability or obligation imposed directly or indirectly upon the County, the Association, and all additional named insured, by reasons of any law of the State of Michigan or of the United States, now existing or which shall hereafter be enacted, imposing any liability or obligation or providing for compensation to any person or persons on account of, or arising from the death of, or injuries to employees. The Contractor shall pay, settle, compromise and procure the discharge of any and all such claims and all such losses, damages, expenses, liabilities, and obligations, and shall defend at its own cost and expense, and any and all claims, demands, suits and actions made or brought against _____ County, the Board for _____ Lake and all additional named insured, for or upon any such claim.

In case the said Contractor shall fail, neglect, or refuse to comply with any of the provisions of this paragraph, _____ County, the Board for _____ Lake or any additional named insured may at its option but without obligation to do so, in order to protect itself and all additional named insured, from liability, defend any such claim, demand, suits, or action and pay, settle, compromise and procure the discharge thereof, in which case the said Contractor shall repay _____ County, the Board for _____ Lake, and all additional named insured, any and all such loss, damage, and expense, including attorney's fees paid, suffered or incurred by the same. So much of the monies due, or to become due, to Contractor under this agreement as shall be deemed necessary by the Board for _____ Lake shall or may be retained by the Board until every and all such claims, demands, suits, actions, recoveries, judgments, liabilities and obligations have been settled and discharged and evidence to that effect furnished the Board, or the Board may collect the same in whole or in part in any lawful manner from said Contractor.

Nothing in this section shall be construed to apply whenever the damages arising out of bodily injury to persons or damage to property are caused by or result from the sole negligence of any indemnity hereunder, its agents or employees.

(continued on next page)

Box III.7.3. Sample Contract Specifications (continued)

11. NO WAIVER OF RIGHTS

The Board's review, approval, acceptance of, or payment for any of the services required under the Agreement shall not be construed to operate as a waiver by Board of the rights under the Agreement or of any cause of action arising out of the performance of the Agreement by the Contractor. Contractor shall be liable to Board in accordance with applicable law for all damages to Board caused in whole or part by Contractor's negligent acts in the performance of any of the services furnished under the Agreement.

Notwithstanding any other provision in this Agreement, no provision in this Agreement is intended, nor shall any such provision be construed, as either waiving or constituting a waiver of any public or governmental immunity afforded to the Board, and/or Board's agents, employees, representatives as provided by applicable statutes and/or court decisions.

12. OTHER TERMS AND CONDITIONS

- a. That Contractor shall secure and solely employ the necessary personnel to perform the services described herein and all personnel shall be employees or shall be under the direct control and supervision of Contractor. Contractor shall accept responsibility for and make payments as required by law for worker's compensation insurance, social security, income tax reductions, unemployment compensation, and any other taxes or payroll deductions as required by law for its employees. All personnel or employees, working under this agreement on behalf of Contractor shall be professionally qualified to perform the duties required.
- b. That any and all employees employed by Contractor are employed at Contractor's own expense (including taxes and insurance) and Contractor remains solely responsible for and fully liable for the conduct and supervision of any of its employees. Contractor warrants that services performed by Contractor's assistants and/or subcontractors shall fully comply with the terms of this agreement.
- c. That Contractor's relationship to the Board is that of an independent contractor. This contract shall not cause the Board to be liable for, or Contractor to accrue benefits such as, but not limited to, worker's compensation, retirement, pension, vacation pay, sick pay, merit increases, annual leave days, promotion, disability pay, insurance of any kind, or any other rights or liabilities arising out of the contract to hire or employer-employee relationship.

13. SECTION HEADINGS AND SEVERABILITY

- a. All section headings contained herein are for convenience of reference only and are not intended to define or limit the scope of any provisions of this contract.
- b. If any provision of this contract is held invalid or unenforceable, such provision shall be deemed deleted from this contract and/or shall be replaced by a valid and enforceable provision which so far as possible achieves the same objectives as the severed provision was intended to achieve, and the remaining provisions of this contract shall continue in full force and effect.

14. ENTIRE AGREEMENT

The terms contained in this contract constitute the entire agreement between the parties with respect to the subject matter hereof, superseding all prior understandings, proposals and other communications, oral or written. This contract may only be modified by amendment signed by both parties.

15. LAW

This Agreement shall be interpreted in accordance with the laws of the State of Michigan.

16. DISPUTES

All disputes arising under this Agreement or in any the result of this Agreement shall be filed in the Circuit Court for the County of _____, State of Michigan; the District Court for ____nd-3rd Division for the State of Michigan; or the United States District Court for the _____ District of Michigan, _____ Division if the court otherwise has jurisdiction.

Section 8 – Deactivate a Lake Improvement Board

A lake board for a public inland lake is dissolved if all of the following requirements are met:

1. The governing body of each local unit of government in which all or part of the lake is located holds a public hearing on the proposed dissolution, determines that the Lake Board is no longer necessary for the improvement of the lake because the reasons for the establishment of the Lake Board no longer exist, and approves the dissolution of the Lake Board. The governing body of each local unit of government in which all or part of the lake is located may hold the public hearing on the dissolution of the lake board upon petition of 2/3 of the freeholders owning land abutting the lake. Notice of the public hearing shall be published twice in a newspaper of general circulation in each local unit of government in which all or part of the lake is located. The first notice shall be published not less than 10 days before the date of the hearing.
2. All outstanding indebtedness and expenses of the Lake Board are paid in full.
3. Any excess funds of the Lake Board are refunded based on the last approved special assessment roll. However, if the amount of excess funds is small, the excess funds shall be distributed to the local units of government in which all or part of the lake is located, apportioned based on the amounts assessed against each local unit of government and lands in that local unit on the last approved special assessment roll.
4. The Lake Board determines that it is no longer necessary for the improvement of the lake, because the reasons for its establishment no longer exist, and adopts an order approving its dissolution.

PART IV: ADDITIONAL SUPPORT

Section 1 – Advice from Lake Board Members

The responsibility for lake management is no simple task. It requires some knowledge of lake and land or watershed management principles and strategies. A lake board member doesn't have to be an expert on all the issues, but he/she needs to have some knowledge of many topics. The board member should know enough to ask probing questions of the experts and translate the meaning of ecological issues and administrative processes for the lake community citizens. That means the board member should have some understanding of aquatic ecology, fisheries biology, land management, state and local laws, marketing, leadership and educational strategies, as well as local community resources and assets.

This section was written by a committee of lake association and lake board members who identified issues an understanding of which has been helpful to them with their lake management responsibilities. These issues include:

- State Laws and Programs
- Local Government and Lake Protection
- Leadership Skills
- Working with Professional Providers
- Responsibilities of a Board Member
- Products that a Board could Produce

State Laws and Programs

It is not possible to list and discuss all State laws and programs that may impact upon a local lake management project, but more frequently cited laws and programs are identified. This section is divided into units with information on:

- Grants
- Monitoring
- Laws and Permits, and
- Partnerships.

Grants

Nonpoint Source Program

Nonpoint source (NPS) pollution is caused when rain, snowmelt, or wind carry pollutants off the land and into lakes and streams. Michigan's Nonpoint Source Program has been established to assist local units of government, non-profit organizations, and others to reduce nonpoint source pollution. The basis of the program is watershed management and the program works with

stakeholders to develop and implement plans to protect lake and stream watersheds. The Program consists of five parts:

- Technical assistance to help develop and implement watershed management plans,
- Information and education, including tools to educate people about nonpoint source pollution,
- Grants, to implement local watershed best management practices, land use planning tools and information/education activities,
- Compliance and enforcement, including investigation of complaints, and participating in enforcement actions,
- Monitoring and field investigations to determine the effectiveness of best management practices, and monitoring related to comprehensive watershed management programs.

More information about the Nonpoint Source Program and the grants issued by the program may be found at the web site www.michigan.gov/nps.

Michigan Natural Resources Trust Fund

The objective of the Michigan Natural Resources Trust Fund's grant program is to provide funding to local units of government for the acquisition and development of lands and facilities for outdoor recreation or the protection of significant natural resources of environmental importance or scenic beauty. Any local government including school districts, or authorities constituted to provide recreation are eligible. Local units must have an approved plan to be eligible. A match on either acquisition or development projects is required from the local applicant. Grant priorities are set by the Michigan Natural Resource Trust Fund Board. Information about applications for project grants may be found on the web site: www.michigan.gov/dnr-grants.

Clean Water Revolving Fund and Strategic Water Quality Initiatives Fund

Michigan's Water Pollution Control Revolving Fund, is a low-interest loan (2.5%) financing program that assists qualified local municipalities with the construction of needed water pollution control facilities. The Strategic Water Quality Initiatives Fund (SWQIF) provides low-interest loans for water pollution control projects involving the on-site upgrade or replacement of failing septic systems or for the removal of groundwater or storm water from sanitary or combined sewer leads. Information about the programs is available on the web site: www.michigan.gov/deqcleanwaterrevolvingfund.

Inland Fisheries Grants

The Inland Fisheries Grant Program's purpose is to provide funding and technical assistance to local units of government and non-profit groups to enhance inland fisheries and fishing opportunities in Michigan. Responsibilities of the grant applicant are outlined in handbook

available on line. Grant applicants should work with the Fisheries Division Management Unit for the project area to ensure formulation of a high quality project and proper completion of the grant application.

Any individual, nonprofit organization or local unit of government (including school districts) may apply for an Inland Fisheries Grant. The minimum grant amount is \$5,000 and the maximum is \$200,000 per project. The grantee must provide at least 50 percent of the total project cost in the form of local match. The local match may be from: cash or in-kind donations.

The main objectives of the Inland Fisheries Grant Program are to:

- 1) Maintain and enhance aquatic environments;
- 2) Rehabilitate degraded fish communities;
- 3) Foster educational and interpretive communications on inland fisheries, and;
- 4) Provide additional fishing opportunities and public access.

The Michigan DNR determines a focus area for each year's grant projects. Only those applications that meet the focus area for that year will be eligible for funding. More information about the program is available at the web site www.michigan.gov/documents/dnr/IC1961_262124_7.pdf

Marine Safety Grants to Counties

The purpose of this grant program is to promote safe recreational watercraft activities through enforcement and education. Grants are available to county sheriff departments. The amount available is determined by a need study done for each county by the DNRE. More information is available on the web site www.michigan.gov/documents/IC1929-2_159097_7.pdf.

Monitoring

Cooperative Lakes Monitoring Program

With 11,000 lakes, it is impossible for the Michigan Department of Natural Resources and Environment to adequately monitor more than a handful of lakes annually. In order to collect important long-term data on more Michigan lakes the State joined with Michigan Lake and Stream Associations, Inc. (MLSA), to form the Cooperative Lakes Monitoring Program (CLMP), which is now also supported by Michigan State University Extension, the Huron River Watershed Council and the Great Lakes Commission.

The CLMP monitoring program began in 1974 as a trial project to collect data on Michigan's lakes. The effort proved to be highly successful. The Program grew and now 250 to 300 lake communities are participating in the program each year.

Participants begin their involvement in the Program by taking water clarity readings of their lake with a simple device called a Secchi disk. Readings are taken either weekly or every other week throughout the summer season. At the end of the summer the readings are sent to the Program management team. The data is analyzed and a report is returned to the lake community. Participants may also collect water samples in the spring and late summer for total phosphorus analysis.

After the volunteer samplers have demonstrated that they can successfully collect good water quality data with the Secchi disk, they are eligible to register for more advanced sampling of other water quality parameters. Advanced sampling may include: chlorophyll samples, using a meter to measure dissolved oxygen and temperature values from the lake surface to the lake bottom, and identifying and mapping the aquatic plants in the lake.

Training is critical to insure the data collected in the program is accurate and precise. Training is provided for each parameter at the MLSA annual conference each year. For some parameters the training is optional but recommended especially for new participants. For the advanced parameters participation in the training is required for the first year a lake community is involved in monitoring the parameter.

There is a cost to the lake community for each parameter sampling in which they participate. These costs vary depending upon professional and staff time needed to analyze and report the data for that measurement. For most parameters costs are minor, ranging from \$15 to \$50. A few parameters have higher costs to cover more technical professional analysis. A report is provided to all participants. For those lake communities that have been in the program for several years, a special analysis of the data is performed to see how the lake has changed over time.

Those interested in learning more about the program or participating in the program should visit the web site of MLSA, www.mlswa.org or the MiCorps web site www.micorps.net.

Stream Monitoring

The Department of Natural Resources and Environment and the Great Lakes Commission (GLC) have two grant opportunities for volunteer stream monitoring: the Volunteer Stream Monitoring Grant Program and the Volunteer Stream Monitoring Start-Up Grant Program. The Volunteer Stream Monitoring Grant Program provides grants for monitoring in wadeable streams. The grants provide training and support for the volunteer groups to help them collect data on the state's water resources which is used to support the DNRE's efforts to protect and manage the state's water resources. The grants may be used to fund a local monitoring coordinator and/or purchase monitoring supplies.

The Volunteer Stream Monitoring Start-Up Grant Program provides funding for newly forming volunteer monitoring groups to assist these groups in designing a monitoring strategy for their community and aid in the development of a full proposal for the Volunteer Stream Monitoring

Grant Program. Start-up grant recipients will have access to resources and training and can use the start-up money to conduct research on a monitoring project and strategy.

Local units of government and nonprofit organizations are eligible to receive grant funding from both the Monitoring and Start-Up Programs. Grant application packages are available online at: <http://www.micorps.net/app/gap10> and <http://www.micorps.net/app/startup10>.

Laws and Permits

National Pollution Discharge Elimination System

The National Pollution Discharge Elimination System (NPDES) permit process was initiated by The Federal Water Pollution Control Act amendments of 1972. The purpose of the program is to control the discharge of pollutants into surface waters by imposing effluent limitations to protect the environment. The Act had a goal to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water". This is more commonly known as the "fishable, swimmable" goal.

The enactment of the 1972 amendments marked a distinct change in the philosophy of water pollution in the United States. The amendments maintained the water quality-based controls, but also included technology-based control strategies. The treatment technology-based discharge standards are promulgated by the U.S. Environmental Protection Agency (EPA). Dischargers are placed in categories based on industrial processes or on the type of wastewaters generated. As treatment technology improves, these federal standards are expected to become more restrictive in order to progress toward the goal of zero discharge. As permits expire they must be reissued with limits reflecting the most recent treatment technology standards.

The 1977 amendments to the legislation, known as the Clean Water Act (CWA), shifted emphasis from controlling conventional pollutants to controlling toxic discharges. This era of toxic pollution control is referred to as the second round of permitting. The concept of BAT controls was clarified and expanded to include toxic pollutants.

In addition to treatment technology-based standards, the Clean Water Act also required that minimum receiving water quality standards be achieved. Water quality standards are promulgated by the states. The Michigan standards are designed to not only protect for aquatic life ("fishable") and recreation ("swimmable"), but also for all other uses of the receiving waters, including agriculture, public and industrial water supply, and navigation.

On February 4, 1987, Congress amended the CWA with the Water Quality Act (WQA). The amendments outlined a strategy to accomplish the goal of meeting water quality standards set by the States. The WQA required all States to identify waters that were not expected to meet water quality standards after technology-based controls on point sources have been imposed. The State must then prepare an individual control strategy to reduce toxics from point and nonpoint sources in order to meet the water quality standards. The WQA also established new schedules for storm water discharges to be regulated by NPDES permits.

For more information about the NPDES permit program visit the web site www.michigan.gov/deq/0,1607,7-135-3313_3682_3713-10197--,00.html

Inland Lakes and Streams

The Michigan Department of Natural Resources and Environment (MDNRE) is responsible for protecting the natural resources and the public trust waters of Michigan's inland lakes and streams under the authority of Part 301, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The MDNRE also administers the federal permit program which regulates the dredging or filling of inland lakes and streams under Section 404 of the Federal Clean Water Act (except in coastal areas where the US Army Corp of Engineers retains this authority).

Part 301 covers inland lakes and streams, meaning any natural or artificial lake, pond, or impoundment; a river, stream, or creek, or any other body of water that has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water. Inland lake or stream does not include the Great Lakes, Lake St. Clair, or a lake or pond that has a surface area of less than 5 acres.

A permit is required under this act to:

- Dredge or fill bottomlands
- Construct, enlarge, extend, remove, or place structures on bottomlands.
- Erect, operate, or maintain a marina.
- Create, enlarge, or diminish an inland lake or stream.
- Structural interfere with the natural flow of an inland lake or stream.
- Construct or enlarge an artificial channel, pond, or similar waterway where the purpose is the connection with an existing inland lake or stream, or where any part of the artificial waterway is located within 500 feet of the ordinary high water mark of an existing inland lake or stream.
- Connect any natural or artificially constructed waterway, pond or lake with an existing inland lake or stream for any purpose.

Fee payment must be submitted with the permit application. Fees can range from \$50 to \$2,000.

For more information about this permitting program see the web site [onestophelp.state.mi.us/wiki/Inland_Lakes_and_Streams_Permit_\(Part_301\)](http://onestophelp.state.mi.us/wiki/Inland_Lakes_and_Streams_Permit_(Part_301))

Wetlands

Michigan's wetland program is defined by, Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Wetlands are a significant factor in the health and existence of other natural resources of the state, such as inland lakes, ground water, fisheries, wildlife, and the Great Lakes. Types of wetlands include

deciduous swamps, wet meadows, emergent marshes, conifer swamps, wet prairies, shrub-scrub swamps, fens, and bogs.

The Wetland Program oversees activities proposed in regulated wetland areas and reviews permit applications for dredging; filling; draining surface water; or constructing, operating, or maintaining any use or development in a wetland. In accordance with Part 303, wetlands are regulated if they are any of the following:

- Connected to or located within 1,000 feet of the Great Lakes.
- Connected to or located within 500 feet of an inland lake, pond, river, or stream.
- Located within 500 feet of an inland lake, pond, river or stream.
- Greater than 5 acres in size.

The law requires that persons planning to conduct certain activities in regulated wetlands apply for and receive a permit from the state. A permit is required from the state for the following:

- Deposit or permit the placing of fill material in a wetland.
- Dredge, remove, or permit the removal of soil or minerals from a wetland.
- Construct, operate, or maintain any use or development in a wetland.
- Drain surface water from a wetland.

More information about the Wetlands permitting program is available at the web site onestophelp.state.mi.us/wiki/Wetlands_Protection_Permits_%28Part_303%29.

Aquatic Nuisance Control

The Michigan Department of Natural Resources and Environmental has the responsibility for issuing permits for the application of pesticides in waters of the state to control aquatic nuisances, such as aquatic plants, under the authority of Part 33 of the Natural Resources and Environmental Protection Act, 1994 PA 451. The purpose of the permit is to regulate aquatic nuisance control projects so that the work will be conducted during certain times, under certain conditions, and with safeguards as are necessary to protect the public health, welfare, and the aquatic environment.

Any chemical treatment for the purpose of aquatic nuisance control located below the ordinary high water mark; or waters of the state, except ponds, which are defined as a small body of standing water without a permanent or intermittent outlet, which has a surface area of less than ten acres, no record of threatened or endangered species, and is owned by a single individual or corporation, or is owned by more than one person and written permission for the proposed chemical treatment has been obtained.

Treatment is restricted to the area which is described in the permit and which is either under the legal control of the applicant or under the legal control of parties who have granted the applicant permission to perform the treatment. A chemical employed for aquatic nuisance control must be registered with the U.S. Environmental Protection Agency and the Michigan Department of Agriculture for the nuisance control activity for which it is proposed.

Fees with the permit application and are based on the size of the proposed treatment area.

- For treatment of areas less than ½ acre, the required fee is \$75.00.
- For treatment of areas of ½ acre or more but less than 5 acres, the required fee is \$200.00.
- For treatment of areas of 5 acres or more but less than 20 acres, the required fee is \$400.00.
- For treatment of areas of 20 acres or more but less than 100 acres, the required fee is \$800.00.
- For treatment of areas of 100 acres or more, the required fee is \$1,500.00.
- Application fees for a Certificate of Coverage are \$75.00.

Information about the program and permits may be obtained at the web site onestophelp.state.mi.us/wiki/Aquatic_Nuisance_Control_Permits

Endangered Species

About 400 species are listed as threatened or endangered in Michigan. Each of these species can usually be found in only a few places. Many can only be seen or heard during a few weeks each year. A species rare in Michigan may be common elsewhere in the United States. That species would be state listed, but not federally listed. Sometimes a species is common in Michigan, but endangered throughout the rest of the United States. That species might be added to the federal list before state listing. Federally listed species automatically receive protection under state law.

Endangered species are in danger of extinction. Threatened species are in danger of becoming endangered. Threatened and endangered species are protected by law; they may not be killed, harassed, handled, or possessed without a permit. Species of special concern are rare or have declining populations, but do not yet meet the criteria for threatened status.

Today, habitat loss due to lawns, pavement, climate change, and invasive species are the greatest threats to endangered species in Michigan. Individuals and communities can plant a native plant garden to make food and shelter for wildlife like butterflies or birds. People can also learn how to decrease the amount of carbon dioxide for which you are responsible. A property owner can check their property for invasive exotic plants and remove them. Finally, everyone can support the Nongame Fund through donations or the purchase of a Loon License Plate.

Exotic Species

Michigan's efforts in exotic species management are overseen by the Michigan Aquatic Nuisance Species Council. The Council was created by Executive Order of the Governor in 2002. The Order implements a primary recommendation of the multi-stakeholder group that developed Michigan's Aquatic Nuisance Species Management Plan Update, released in October, 2002.

The purpose of the Council is to advise the Office of the Great Lakes and the Departments of Natural Resources and Environment, Agriculture and Transportation on implementation of the updated plan, including:

- the state's efforts to prevent and control aquatic nuisance species' introduction and spread,
- information/education activities about aquatic nuisance species,
- the coordination of research and monitoring activities pertaining to aquatic nuisance species, and
- revising and updating the Management Plan as necessary.

There are nine members on the Council representing the directors of the four state departments and five at large members appointed by the Governor. The Council is chaired by the Director of the Office of the Great Lakes. The Council meets 2 times per year in the spring and fall and meetings are open to the public. More information about the Council and Plan are available on the web site www.michigan.gov/deq/0,1607,7-135-3313_3677_8314-60394--,00.html.

Dam Safety

Dams in Michigan are regulated by Part 307, Inland Lake Levels, and Part 315, Dam Safety, of The Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Dams are regulated by Part 315 when they are over 6 feet in height and over 5 acres are impounded during the design flood. Dams are regulated by Part 307 when a circuit court issues an order establishing the level at which the lake is to be maintained.

Permits are required for the construction, enlargement, repair, alternation, removal, abandonment and reconstruction of state regulated dams. Inspection reports are required every three to five years based on their hazard potential rating.

The Dam Safety Program with the MDNRE is responsible for ensuring the safety of Michigan's regulated dams. The program focuses on ensuring that dams are properly constructed, inspected and maintained, and that the owners have adequately prepared for potential emergencies. For more information about this program visit the web site www.mi.gov/damsafety.

Partnerships

Michigan Inland Lakes Partnership

In Michigan the responsibility for management of lakes does not reside with any one agency or organization. Not only do federal, state, tribal and local agencies have management responsibilities, but the actions of citizens and environmental organizations (nongovernmental organizations, or NGOs) also can have significant positive or negative influences upon the quality of lakes. To proactively protect and manage its inland lakes Michigan must focus the many interests and responsibilities to achieve a sustainable resource for present and future

generations. One of the solutions to this dilemma is a collaborative partnership among all the agencies, organizations and citizens to focus management actions.

The Michigan Inland Lakes Partnership (Partnership) was developed to engage state and local agencies, Native American Nations, outreach institutions (universities and other educational institutions), non-governmental organizations (NGOs), businesses, industries and citizens in a collaborative effort to ensure the quality, sustainability and ecological diversity of lakes, while considering society's needs. The Partnership promotes communication and cooperation between partners, communities and citizens interested in the management of Michigan's inland lakes, educates leaders, and strengthens stewardship efforts.

The Partnership supports efforts to research, monitor, evaluate and regulate ecosystem impact sources, such as nutrient enrichment, exotic species, soil erosion, consumptive uses, overcrowding and others, in order to develop and promote proactive, sustainable and science-based management practices. The Partnership encourages a system of voluntary and regulatory management approaches.

The partners have selected four goals as projects for the first three years of the partnership.

- Manage Invasive Species
- Manage Lakes as Sustainable Ecosystems
- Educate Communities and Citizens
- Manage Watersheds to Reduce Pollutant Inputs

To learn more about the Partnership visit its web site www.michiganlakes.msue.msu.edu.

Michigan Natural Shoreline Partnership

Many inland lakes have had a significant lose of native shoreline habitat as development has replaced this habitat with turf and hard armored seawalls at the water edge. Many studies, including a recently completed large study of the nation's lakes by the Federal Environmental Protection Agency have shown that this habitat lose has a significant negative impact upon a lake's water quality and upon the ecology of the plants and animals that depend upon the native shoreline habitat for reproduction, protection and growth. Many states, including Michigan are now working to protect remaining native shoreline habitats and restoring them where they have been lost.

The Michigan Natural Shoreline Partnership was created with the goal of promoting natural shorelines of inland lakes through the use of "green" landscaping technologies and bioengineered erosion control practices. The Partnership is made up of public-private agencies and organizations including governmental agencies, industry associations, industry representatives, academic institutions and environmental and non-profit organizations.

The Partnership has four strategic goals:

1. Train contractors on natural shoreline protection to assist the landscape and construction industry in the transition to new technologies and create new opportunities for natural shoreline protection and restoration.
2. Provide education and outreach to lakefront property owners and the public on natural shoreline management.
3. Encourage development of demonstration sites and research on natural shoreline protection.
4. Encourage local and state policies that promote natural shoreline management.

For more information about the Partnership and the work it is doing, visit their web site (www.michiganlakes.msue.msu.edu/MichiganNaturalShorelinePartnership.aspx).

Local Government and Lake Protection

County and Township Planning and Zoning

Two documents set the tone for local planning efforts. These are the comprehensive plan and zoning ordinance. The comprehensive plan, also called a master plan or land use plan, is a guide that is intended to shape local land use decisions. It is the vision for the area being planned. Plans make recommendations about the placement of public services like schools, roads, as well as sewer and water lines. They also serve as the foundation for zoning ordinance regulations—which subsequently control the location, intensity, and design of a community’s land uses.

As a guide, the plan is not the rule and law and cannot enforce where and how something is constructed. A community might adopt an excellent comprehensive plan, but it will only be effective if its goals are acted upon. Zoning, budget commitments, and partnerships with community agencies and organizations such as lake boards can help put the plan into practice. Townships, cities, villages, counties and regions are all allowed to develop plans under the Michigan Planning Enabling Act. This act specifies what’s included in the plan, how it is approved and changed if necessary, and who has authority over the plan.

A zoning ordinance is a law or code that regulates how properties within a government may be used. By defining allowable uses of land, establishing standards for development, and offering incentives for different development types or patterns, zoning offers a number of opportunities to achieve a plan’s objectives.

According to the Michigan Zoning Enabling Act, the zoning ordinance shall be based on a plan. Because zoning affects the use and value of private property, the law is very specific about how zoning ordinances are structured, what is included, and where limitations can be imposed on zoning authority. There are many court decisions that affect zoning authority and form precedence for future decisions.

Zoning uses many techniques that can be applied to protect lakes. Some of these are zoning districts, set backs, permitted uses, special uses, shoreline protection and buffers, cluster development, anti-funneling, and overlay provisions. Getting involved at the local level allows

riparian owners to have a significant say in the type of development around them and how well their lakes are protected.

Drain Commissioner Responsibilities

Drain Commissioners have a variety of responsibilities that may have impacts on lakes. First, they are members by right of any legal lake improvement board. They automatically sit on these boards by State law and help to make decisions that directly impact lakes. These may include the level of assessment, contractors used for weed harvest and invasive weed control, as well as selection of a consultant.

If a lake has a legally established lake level, the drain commissioner is charged with operating and maintaining the water control structure within the guidelines established by the circuit court. This oftentimes includes record keeping to document lake levels and opening or closing the dam as determined by the court order. Most lay people are easily confused by apparent water levels and unless there is an established gage, they often feel the water is either too high or too low for their purposes.

Drain commissioners often develop stormwater ordinances. These are implemented at the township city, village or county level. They can be effective at substantially reducing the sediment and nutrient levels entering lakes or streams. Stormwater should receive some treatment before it is discharged into a lake. In-stream sediment basins or wetlands are often times used to remove sediment and reduce nutrients.

Township Boards under Public Act 188

A township by motion of the board or by petition of owners of 51% of the land area may initiate a special assessment district (SAD) for implementing lake projects. This allows funds to be collected by assessment for paying for improvements. The township board authorizes the preparation of a plan that describes the improvements and their location along with an estimate of the costs. The Township is required to have a hearing to obtain public opinion and a second one to establish the assessment roll for the special assessment district. A township also has the authority to pay management costs out of general funds.

Soil Erosion and Sedimentation Enforcement

Each county provides an enforcement officer to implement the Soil Erosion and Sedimentation Control Act. This is a state act that permits any earth disturbing activity within 500 feet of a lake or stream or exceeds more than one acre in size. The application for a permit activates a review process that mandates the implementation of best management activities to reduce or control erosion and the movement of sediment. This is especially important on lake shore development. A permit oftentimes requires the use of silt fence, temporary seeding, water control structures

such as rock dams and final revegetation. It also oversees the installation of shoreline protection such as rock riprap and sea walls.

Conservation Districts and Health Departments

Conservation districts are located in many counties. They can be useful to riparian owners by providing advice for water quality protection and establishing vegetative cover. They also frequently sell plants, shrubs and trees that can be used for establishing buffers. Cost sharing conservation practices may be available.

Health Departments permit well drilling and septic tank installation. They generally can do testing to determine the ability of a soil to infiltrate and percolate water as well as effectively treat septage. They also determine proper setbacks for wells, septic tanks and lakes or streams.

Other Statutes that may Impact Lake Development

Many other laws may impact lake development depending on their location and relation to other environmental conditions. Some State laws of concern are:

- Wetlands Act
- Inland Lakes and Streams Act
- Aquatic Nuisance Control
- National Pollution Discharge Elimination System
- Exotic Species
- Dam Safety

Information about these State laws can be found in the Unit on **State Laws and Programs**.

Literature Cited or Resources:

Ardizone, K.A. and M.A. Wyckoff; Filling the Gaps: Environmental Protection Options for Local Governments; 2003; Lansing, MI; Michigan DEQ
Lucas, Sarah; The Master Plan; The Zoning Ordinance; Citizen Planning Series; Northwest Michigan Council of Governments; Traverse City, MI

Leadership Skills

Sitting at the table in the front of the room and leading a lake community in its decision making process is a privilege and responsibility. Being prepared to lead can facilitate the community through a course of action that can sometimes be difficult and challenging. Being unprepared to lead could be painful for the individual and devastating for the community. A poorly facilitated

process could result in years of division and mistrust. A good leader will prepare for her role by understanding the community circumstances and knowing the tools and skills needed to lead.

This discussion is not a comprehensive presentation of leadership. The purpose of the discussion is to identify some important leadership issues and refer the individual on to more comprehensive resources. Before taking a seat at the head table, an individual should know and understand:

1. The local community
2. The community's history
3. The lake environment
4. The local government
5. Leadership styles
6. Diversity/personality differences
7. Decision making
8. Meeting dynamics

The publication *Developing Community Leadership – A Guide for MSU Extension* (2005) provided information for this section of the manual.

The Local Community

Every community is different. The differences can be economic, social, political, and environmental. Understanding the community will allow the leader to identify similarities and differences in the community's priorities and needs as well as relate to the community's social goals and local environmental conditions. A leader who knows the community will also know the community leaders, political and social, as well as the influential organizations within the community. A leader should be able to address the following. What (who) are the community's:

- Major priorities,
- Needs,
- Leaders,
- Environmental assets,
- Environmental liabilities,
- Economic conditions,
- Social programs,
- Governance,
- Resources, and
- Public participation.

Resources such as *Community Culture and the Environment – A Guide to Understanding a Sense of Place* (2002) can help a leader have a better understanding of community values and processes that relate to environmental issues, thus resulting in more effective partnerships and approaches to solve environmental problems.

The Community's History

Past events and relationships have shaped the local community. Current situations and conditions can be better understood by knowing the history from which they evolved. Additionally, history may be seen as a continuum, future conditions are often built upon past and current events and actions. A leader who understands the community's history will have a good feel for where the community has been and where it is going. A leader should have knowledge of a community's:

- Native conditions,
- Early settlement,
- Achievements,
- Failures,
- Leaders,
- Major events and crises, and
- Research/studies.

A short report addressing the above issues can help provide prospective and be informative for new members to the community.

The Lake Environment

To guide a community through a lake management effort, a leader must have some understanding of lakes in general and the lake of concern in particular. It should not be assumed that all lakes are the same and what works for one lake will work for another. Just like humans all lakes are unique. Given their size, volume, shape and flushing rate they respond differently to sediments and nutrients coming from the watershed. Some are capable of assimilating large amounts of phosphorus with few observable impacts. Others are dramatically altered by even minor increases in phosphorus.

Some lakes with high flushing rates can be easily restored once degraded and others are extremely difficult to restore once their high quality conditions are lost. For many lakes protection management may be the only feasible management option. Waiting for problems to develop before implementing management is acquiescing to irreversible change.

The Natural Resources Conservation Service (NRCS) document, *A Procedure to Estimate the Response of Aquatic Systems to Changes in Phosphorus and Nitrogen Inputs* (Newton and Jarrell, 1999) may help the leader have a basic understanding of lakes. The document has a good primer on eutrophication that is informative and easy to understand. The document also has a

Environmental and Administrative Contacts

- Project consultant,
- Township assessor and clerk,
- County commissioners
- County drain commissioner
- Project contractors,
- State agency staff issuing permits,
- Relevant professional organizations

key that may help a leader identify his community's lake type. The document may be obtained at the web site www.sera17.ext.vt.edu/Documents/Procedure_Aquatic.pdf.

The Local Government

Local government can be traced back to the beginnings of human culture. In those early days a patriarch, tribal leader or spiritual priest gave the orders and meted out punishment. Most in the family or clan benefitted as the family was more effective at securing resources and competing with the families in the adjoining valleys. However, the primary beneficiaries of the government were the patriarch, tribal leader or spiritual priest. Over time government grew but didn't really evolve. The patriarch, tribal leader and spiritual priest were replaced by a pharaoh, Caesar, or king. If the leader was effective the nation prospered. However, again the primary beneficiaries were the pharaoh, Caesar or king.

Finally in the 13th century government began to evolve, with the early development of democracy. At last everyone in the community had a say in the decision making processes and could share in its

benefits. **The important point of this discussion is this: even in a democracy, just as in early governments, decision making and benefits go primarily to those that participate.** An effective lake community leader will know and be a participant in local government.

Local Government Services which may be Important in a Lake Management Effort

- Land use regulations
- Sewer/drainage authority
- Building permits
- Soil erosion permits
- Road maintenance
- Parks
- Economic development
- Recreation programs
- Lake improvement boards
- Property tax assessment
- Libraries
- Public works projects

For more information about how local government can benefit lake management efforts see the section in this chapter on local government and the publication, *Filling the Gaps: Environmental Protection Options for Local Governments* (Ardizzone and Wychoff, 2003).

Leadership Styles

Leadership is not only a position but a style. In the military, the sergeant gives an order and the platoon implements it, no questions asked. In the Peace Corps a volunteer works behind the scene to enable a community to reach its own decision on an issue and implement their plan. Dr. Lela Vandenberg in the publication *Developing Community Leadership – A Guide for MSU Extension* (2005) identified six approaches to leadership (see box below).

There is no one best approach to leadership that is right in each and every situation. The community circumstances and personalities should guide the most appropriate leadership approach. Leadership in lake management is particularly challenging because in Michigan under riparian law doctrine, property owners have legal rights recognized by the courts. The

community would probably be very suspicious and resistant to plans put forward by a leader that did not engage them in the development of management options and implementation of the program. They would probably see this as a usurpation of their rights.

Additionally, the lake community may have many, even hundreds of owners all with unique interest and priorities. It may be difficult, if not impossible, to have the community arrive at consensus on a course of action. The leader will have to have a decision making style that the community can appreciate and still be effectual.

Leadership Approaches

Personal Influence – The leader uses his knowledge and skills to determine what actions the community should take.

Situational – The leader uses analytical skills to fit actions to needs.

Reciprocal – The leader and community through good communication use a mutual influence process to make decisions.

Transformational – The leader uses her charismatic, visionary, and inspiring skills to transform and motivate the community.

Servant – The leader serves behind the scenes so others are able to identify and act upon their priority needs.

Shared – Everyone in the community is considered to be a co-leader committed to collective visioning and action.

Dr. Lela Vandenberg

Diversity/Personality Differences

As stated above in the lake community there may be hundreds of citizens. Each of these individuals comes to a meeting of the community with their unique experiences, values and personalities, including the leaders. A person's personality affects how they view the world and react to issues. A leader should understand how his personality influences his leadership skills as well as how the personalities of others influence the dynamics of the group/community.

Understanding one's own personality type and those of others can increase acceptance of differences that might otherwise be a source of conflict. This can result in a more thoughtful and respectful group leading to more effective and productive meetings and decisions.

There are many resource tools used in leadership development curricula to develop an understanding and appreciation for personality types.

MBTI is probably the most extensively used personality inventory. It utilizes data regarding how a person sees information, makes decisions, uses their resources and adjusts themselves to life's circumstances. From this information sixteen different personality types are identified. It takes about three to four hours to complete the basic session.

Two of the more commonly used tools are the Myers-Briggs Type Indicator (MBTI) and True Colors. A leader should take advantage of the opportunity to participate in one of these training sessions, if available. MSU Extension may be able to provide information about where and when these training sessions are held.

True Colors is less rigorous than the MBTI and provides insight about four personality differences. This personality tools is good for groups and leadership teams just getting started. It takes about one to three hours to complete.

Decision Making

Everyone is probably familiar with the decision making processes of authoritative decree and voting with simple majority rule. In authoritative decree the supervisor sends a memo indicating, “I want the report by Tuesday”. Authoritative decree would certainly not work for making decisions in most lake communities, even for a lake improvement board with public works authority. It would undoubtedly result in concerted mistrust and opposition.

Voting with simple majority rule may also not be constructive in many lake communities. Such voting could divide the citizens into two “warring camps” each “pulling out all the stops” to secure their objective. The author represented the State on lake improvement boards for 20 years. The only lake board that he ever experienced dissolving because of a lawsuit was the result of accepting a vote with majority rule. At a large and vocal public meeting the board took a straw vote of the community present to determine how to proceed. The people were obviously very equally divided. The board sided with the faction which had about 51 percent of the vote. A week later a lawsuit was filed; the board dissolved and has never been reformed.

Other forms of decision making may include compromise, multi-voting, voting with supermajority and consensus. Consensus decision-making constructs a solution that everyone can accept, even if it is not their chosen option. Consensus may have a significant place in lake management. A lake project will usually have many groups and stakeholders. Some of these groups may not have worked together in the past. Some of the players may have significantly diverging agendas. Developing trust so the groups can work together will be important. Arriving at consensus in the beginning of the project may take some time, but it may be a great time and money saver in the long-term. Arriving at a consensus in large groups may not be possible, but the concepts and process may still be useful in developing more acceptable alternatives.

Meeting Dynamics

Meetings may be the most significant dynamic in a lake management program. It is at the meeting that the community comes together to exchange ideas, receive and provide input, make decisions, evaluate success and build relationships. It is the leaders’ responsibility to insure that the meetings work and produce results. Below are some meeting considerations:

- Set up the meeting for maximum participation – secure the place, date, and time,
- Plan the meeting – prepare an agenda that will work for the time allotted,
- Advertise the meeting place, date and time,
- Confirm the attendance of board members and presenters,
- Prepare the meeting room, audio/visual equipment and materials needed,
- Welcome participants,
- Begin on time,
- Have the agenda available as a handout,
- Have a sign-in sheet and name tags if necessary,
- Stay on the agenda, unless it becomes absolutely necessary to depart from it,
- Record the meeting minutes,
- Answer everyone’s questions to the fullest extent possible,
- Don’t let one person or group dominate the discussion,
- Encourage input from those that don’t seem to be participating,
- End on time, and
- Evaluate the meeting.

Potential Meeting Materials

- Pens and pencils
- Attendance sheet
- Agenda
- Easels
- Tape recorder/tape
- Extension cord
- Projectors
- Masking tape
- Name tags
- Camera
- Handouts
- Participant directory
- Laser pointer
- Markers
- Evaluation forms
- Sticky notes

Literature Cited

Ardizone, K.A. and M.A. Wyckoff. *Filling the Gaps: Environmental Protection Options for Local Governments*. 2003. Lansing, MI: Michigan DEQ.

Bush, E. et. al. *Developing Community Leadership*. 2005. East Lansing, MI: MSU Extension.

U.S. EPA. *Community Culture and the Environment: A Guide to Understanding a Sense of Place*. 2002. Washington D.C.: U.S. EPA.

Resources

Brown, C.R. and G.J. Mazza. *Leading Diverse Communities: A How-To Guide for Moving from Healing Into Action*. 2005. San Francisco: Jossey-Bass.

Doyle, M. and D. Straus, *How to Make Meetings Work*. 1993. New York, NY: Berkley Books.

Kelsey, D. and P. Plumb. *Great Meetings! How to Facilitate Like a Pro*. 1999. Portland, ME: Hanson Park Press.

Northouse, P.G. *Leadership, Theory and Practice*, 2nd Edition, 2001. Thousand Oaks, CA: Sage Publications, Inc.

Snyder, M.M. *Building Consensus: Conflict and Unity*. 2001. Richmond, IN Earlham Press.

Working with Professional Providers

The first decision a lake management board or team needs to make is to settle on how to handle development and implementation of the management project. Three options are available. One choice is the do-it-yourself method. This would work well if the lake community has the expertise required to produce and manage the plan. Individuals with expertise in science, management and education would be needed. If that expertise is lacking, choices two and three probably make better sense. Choice two is to hire a consultant and rely on them to provide expertise. This method has a higher cost, but would provide personnel with experience and knowledge specific to the community's needs. The consultant would also help the community develop bid document and work with the contractors hired to implement the project. The consultant would oversee the treatments and make recommendations for succeeding years. The third option is to hire a full-service company. These companies produce the management plan, conduct the lake survey, and implement the treatment strategies.

There are pros and cons for each of the three options. What works best for any lake community will depend upon the distinctiveness of the community and the availability of expertise and funds. If the lake community uses a Lake Improvement Board to manage the lake the Board by law is required to hire an engineering consultant to develop the project.

Working with Consultants

When working with a consultant the management team should understand the options available and the timelines for completion of studies, public hearings, and contract letting needed to

complete the task of lake improvement. If using a Lake Improvement Board or doing a Township Public Works project the laws governing these management organizations identify many of the required time lines. Periodically the citizen management must follow up with the consultant to ensure that meeting dates, times and places for scheduled. Consultant can do pre and post lake surveys to determine the success of the project and provide recommendations for further action. If possible, the management team should accompany the consultant on surveys to observe and offer insight about your lake. This should improve the working relationship between the community and the consultant.

The consultant selected to oversee the lake management project should be knowledgeable with issues like:

- Budget/Special assessment district development
- Notice and posting for meetings and hearings
- Lake management treatment strategies and options
- Required permits
- Obtaining contractor services
- Answering questions of a technical nature in such a way that the citizens understand.

Where to Find a Consultant

To identify possible consultants to interview search the web sites and publications of organizations like the Michigan Chapter North American Lake Management Association, (www.mcnalms.org) and Michigan Lake & Stream Associations, Inc. (www.mlswa.org). Additionally consulting firms will also have exhibit tables at conferences sponsored by these organizations and others that promote water resource management in Michigan.

Working with Contractors

It is very desirable to establish a good working relationship with the contractor working on the lake management project. Contractors can secure proper permits for the project. If the project involves aquatic plant herbicide treatments permit information is available at the web site http://www.michigan.gov/deq/0,1607,7-135-3313_3681_3710-134667--,00.html. Permit costs range from \$75 to \$1500 depending upon the size of the treatment area. The Contractor should be able to provide sufficient liability insurance. They should also send out treatment notices, post treatment areas if necessary and do follow-up treatments if necessary.

The full service contractor should help the lake community develop a complete and through management plan including how the lake will be surveyed, possible treatments that could be used, water clarity and quality, and impacts upon fish and other animal populations. The contractor should supply information with regard to technical and safety information of the products and/or procedures used in the project. The better the communication and cooperation between the contractor and the management team prior to treatment implementation the fewer the complaints later. The contractor working with the management team should use meetings,

email, a website, local newspapers, signs on crucial roads and access sites, phone calls, word of mouth, and any other means to inform the community of the project. The lake community should be given the opportunity to evaluate the success of the project and make recommendations for future efforts.

Where to Find a Contractor

To identify possible contractors to interview search the web sites and publications of organizations like the Michigan Chapter North American Lake Management Association, (www.mcnalms.org) and Michigan Lake & Stream Associations, Inc. (www.mlswa.org). Additionally contractors will also have exhibit tables at conferences sponsored by these organizations and others that promote water resource management in Michigan. Additionally, information on contractors that conduct aquatic plant herbicide treatment can be found at the Michigan Department of Agriculture and the web site of the Michigan Aquatic Managers Association (www.mamagroup.org/membership.html).

Board Member Responsibilities

Products that a Board can Produce

Section 2 – Publications, Web Sites, and Training Opportunities

This Section is not a comprehensive list of all publications, web sites and training opportunities that may be helpful to a lake manager. Such a list would be massive and quickly be outdated. Instead the documents, sites and opportunities listed approach the topics of lake and watershed management more holistically, rather than focusing on one issue such as aquatic plants. Additionally, these documents, sites and opportunities have often been cited and used by lake managers over the years giving them a degree of respected guidance.

Publications

A Model Lake Plan for a Local Community – produced by the University of Wisconsin Extension. The publication uses a fictitious Lake Hale in Phantom County as a model to help lake communities gather and summarize information, debate the alternatives and implement decisions.

A Procedure to Estimate the Response of Aquatic Systems to Changes in Phosphorus and Nitrogen Inputs – produced by the Natural Resources Conservation Service (1999). Lakes are

not equal in their response to phosphorus loading and abatement. This publication allows a community to identify the type of lake it has and the lake's ability to assimilate phosphorus and its response to phosphorus abatement efforts.

Clean Water in Your Watershed: A Citizens Guide to Watershed Protection – produced by the Terrene Institute (Washington, D.C.) and the U.S. Environmental Protection Agency (1993). The Guide is designed to help citizens work with local, state, and federal governmental agencies to design a watershed protection or restoration project.

Developing a Watershed Management Plan for Water Quality: An Introductory Guide – produced by Michigan State University and the Michigan Department of Environmental Quality (2000). The Guide was written to help local units of government and nonprofit organizations develop watershed plans that could be supported by State funding and management programs.

Diet for a Small Lake: A New Yorker's Guide to Lake Management- produced by the New York State Department of Environmental Conservation and the Federation of Lake Associations, Inc. (1990). The Guide is designed to be a step-by-step manual for government and the lake communities to produce a lake management plan resulting in the protection of the lake and optimum use and enjoyment by the community.

Filling the Gaps: Environmental Protection Options for Local Governments – produced by the Michigan Department of Environmental Quality and the Planning and Zoning Center, Inc. (2003). The purpose of this publication is to provide local governmental officials with the information about the tools available to them to make good land use decisions that will provide a community with a quality environment now and in the years to come.

Handbook to Developing Watershed Plans to Restore and Protect Our Waters – produced by the U.S. Environmental Protection Agency (2008). This document provides guidance to states and local governments regarding technical tools and sources of information for developing watershed management plans.

Managing Lakes and Reservoirs – produced by the North American Lake Management Society, the Terrene Institute and the U.S. environmental Protection Agency (2001). The manual was written by professional lake managers for citizens and local communities to provide a comprehensive manual on lake ecology and management.

Restoration and Management of Lakes and Reservoirs, 3rd Edition – by Cooke, G. D. et al./Taylor & Francis Group (2005). This publication is a very comprehensive lake management book, but technical and targeted to professional lake managers. Each lake management strategy is given extensive technical and scientific review.

The Watershed Project Management Guide – by Thomas Davenport/Lewis Publishers (2003). This publication is technical but an excellent, comprehensive treatment of watershed management.

Web Sites

waterontheweb.org This web site has educational programs and water quality data that explain and demonstrate lake ecology.

www.epa.gov/owow/nps The U. S. EPA web site for nonpoint source pollution has much information supporting watershed management including: federal laws and regulations, funding opportunities, available publications, educational resources, training opportunities and web links.

www.epa.gov/lakessurvey This U.S. EPA web site has the recently completed study of the nation's lakes.

www.epa.gov/watertrain This web site provides online training in watershed management. Self-paced training modules varying in time from 1/2 hour to 2 hours are divided into six themes: watershed management overview, watershed ecology, watershed change, analysis and planning, management practices and community/social/water law.

www.glsc.usgs.gov/files/research/InlandLakesManual.pdf This U.S. Geological Survey web site is a comprehensive lake sampling manual.

www.michigan.gov/dnre The web site of the State agency has information on law, rules, permits, funding sources and informational resources. The site is somewhat difficult to navigate.

www.micorps.net The Michigan Clean Water Corps is a network of volunteer monitoring programs in Michigan. It was created through an executive order to assist the Department of Natural Resources & Environment (DNRE) in collecting and sharing water quality data for use in water resources management and protection programs.

www.nalms.org The web site of the North American Lake Management Society provides information about lake management activities happening across the country, including research, publications and conferences.

www.mcnalms.org The Michigan Chapter of the North American Lake Management Society web site provides information about lake management in Michigan.

www.mlswa.org The web site of Michigan Lake and Stream Associations, Inc. has much information about lake management in Michigan including information about the Lake and Stream Leader's Institute, the Cooperative Lakes Monitoring Program, the Riparian magazine, and conferences and training opportunities.

www.michiganlakes.msue.msu.edu This is a web site of the Michigan Inland Lakes Partnership. It is a reasonably comprehensive web site with links to many other sites of organizations and agencies working on Michigan lakes.

www.midwestglaciallakes.org The mission of the Midwest Glacial Lakes Partnership is to protect, restore and enhance Midwestern glacial lakes fish and aquatic communities through

partnerships that foster fish habitat conservation and improve the quality of life for the American people.

www.uwsp.edu/cnr/uwexplakes This is the web site for the University of Wisconsin and The Wisconsin Lakes Partnership. The web site has a lot of information. The web site is Wisconsin based but most of the issues are similar to those in Michigan.

Training Opportunities

Lake and Stream Leaders' Institute

Many most lake community members are unfamiliar with water resource management options and do not have the educational experiences to assist them with the responsibilities of being a water resource leader. For stakeholders to be active participants in partnership resource management, they must have access to appropriate training and informational materials. To address this need the Michigan State University and Michigan Lake and Stream Associations, Inc. (MLSA) with support from Trout Unlimited have initiated the Lake and Stream Leaders' Institute.

The goal of the Institute is to develop a core of local water/land resource leaders who will promote lake, stream and watershed management partnerships with state natural resource agencies and encourage and instruct other citizens in resource management. The Institute employs a combination of classroom activities, field experiences, homework assignments and an applied project to prepare participants in lake, stream and watershed management planning and program implementation. After completing the Institute program, participants are engaged in an Alumni Program to promote communication, continued learning possibilities and opportunities for service.

Any citizen/resident interested in Michigan lakes, streams and watershed management may apply including high school and college students. Applicants must make a firm commitment to attend all sessions and prepare an applied project. Participants are selected from a cross-section of applicants from:

- environmental and conservation organizations
- local government
- private landowners and managers
- under-served communities
- tribal communities
- educational institutions
- agricultural interest
- elected officials
- community organizations
- concerned, active citizens and
- other water resource management interest

A brochure about the Institute is available from MLSA. Also questions about the Institute may be addressed to Michigan State University Extension staff member Dr. Jo Latimore (latimor1@msu.edu).

MSU Online Training – Soils Management

Michigan State University's Institute of Water Research, the then Department of Resource Development and the then Michigan Department of Environmental Quality developed and placed online an educational course to address the issue of controlling sedimentation. The course is seven weeks and provides training on:

- Construction site management of sedimentation,
- Identification of sedimentation control measures,
- Developing sedimentation control plans,
- Vegetative stabilization,
- Sediment basins and diversions, and
- Estimating runoff.

The course would be beneficial for environmental organizations, watershed groups, drain commissioners, contractors, and developers. Registration for the course is available at vu.msu.edu/preview/h2Osoil.

MSU Online Training – Watershed Management Profession Certification Program

MSU offers four courses on watershed management which provide certification in Watershed Management and/or three MSU credits for each course.

- Course 1: Watershed Concepts is an introduction to watershed hydrology and management.
- Course 2: Building and Implementing Watershed Management Plans works a watershed plan through data collection, public consultation and evaluation.
- Course 3: Watershed Assessments and Tools addresses water quality monitoring, bio-assessment protocols, and pollutant loading modeling.
- Course 4: Legal, Financial and Institutional Frameworks looks at federal, state and local laws for financing and organizing a watershed management program.

Information about these courses is available at "Education Online" at the web site www.iwr.msu.edu.

MSU Online Training – Watershed Management

MSU offers an eight-week non-credit, internet-based watershed management course. The course provides an understanding of watershed management, EPA's Phase II storm water regulations

and other possible community initiatives to protect local water resources. Topics in the course include:

- The hydrologic cycle,
- Nutrient and pesticide movement,
- Stream flow,
- Water quality models,
- Point and non-point source pollution,
- Federal, state and local laws and rules,
- Best management practices.

A certification of completion is awarded based upon homework, final exam and participation in web discussions. For more information about the course visit “Outreach & Education” at “Virtual University” at www.iwr.msu.edu.

Section 3 – Organizations that may be Helpful

North American Lake Management Society

The North American Lake Management Society (NALMS) is a national/international professional lake management society. The purpose of NALMS is to forge partnerships among citizens, scientists, and professionals to foster the management and protection of lakes. The interest of the Society is not just lake research but the application of that research to the effective management of lakes. To bring this management to reality there is the need to engage local citizens who are extensively involved in the implementation of lake protection strategies. The Society calls these citizen managers, practitioners and has structured the Society to ensure that these individuals’ interests and needs are identified and addressed. Therefore the Society is a distinctive collaboration of university scientist, professional lake managers and contractors, and citizen practitioners.

To promote lake science and technology transfer, the Society has several educational outlets. An annual conference is hosted each year where researchers can present their most recent projects. Additionally these conferences have training sessions for practitioners to give them the most recent information regarding important issues of lake management. Society publications include a scientific journal and a magazine called LakeLine for practitioners. Of course the Society has a web site (www.nalms.org) and a book store to share information regarding lake ecosystems and management.

While national/international in scope, NALMS also has state affiliates to better focus management on the distinctive conditions in each state or region of the country.

Michigan Chapter North American Lake Management Society

In Michigan the Michigan Chapter of the North American Lake Management Society (McNALMS) is an affiliate of the national Society. As an affiliate of the national organization, McNALMS reflects the goals, membership and outreach objectives of the Society. McNALMS members are roughly equally divided between university researchers, professional lake managers and contractors and local lake board and association citizens. McNALMS publishes a newsletter, has a web site (www.mcnalms.org) and host an annual conference.

Besides the traditional outreach venues, McNALMS goals include greater collaboration among lake management agencies and organizations and advocating for legislation and programs to support lake management in Michigan.

Michigan Lake and Stream Associations, Inc.

Michigan Lake and Stream Associations, Inc. (ML&SA) is a non-profit corporation, made up of organizations, corporations, associations and individuals who share an interest in the protection and management of Michigan's water resources. The corporation was organized in 1961 and now has hundreds of individual and association members. Membership is open to any individual, lake, stream, or watershed association/organization, or corporation who shares a concern and interest in Michigan's water resources.

The primary goal of ML&SA is to assist lake, river and stream, and watershed associations and individual riparian property owners in the management of their waterfront property. Another goal is to prevent the degradation, contamination and pollution of the surface waters of the state of Michigan.

MLSA publishes the magazine *The Riparian*, holds regional and statewide conferences, supports the Cooperative Lakes Monitoring Program, the Lake and Stream Leader's Institute and many other projects. For more information about MLSA visit their web site www.mlswa.org.

Michigan Department of Natural Resources and Environment

The Department of Natural Resources and Environment (MDNRE) is responsible for the stewardship of Michigan's natural resources and for the provision of outdoor recreational opportunities; a role it has relished since creation of the original Conservation Department in 1921. Its traditional responsibilities of fish, wildlife, parks and forest have been greatly expanded over the years. It now has responsibilities in air and water quality, land management, waste and toxic materials management and many more.

The best place to get information about the MDNRE is at their web site www.michigan.gov/dnre. However, the site is large and somewhat difficult to navigate.

Watershed Councils

Watershed council's are generally established to protect and manage the ecology of a river ecosystem. Most are nonprofit organizations made up of a community's residents, businesses, and local governments. A watershed council can bridge political boundaries within a river watershed by building partnerships between the local units of government. The watershed council can use its collaborative resources to address water pollution, wetland protection, citizen education, and land-use planning.

A watershed council can serve as a place where local units of government and citizens discuss problems and seek solutions to critical issues affecting the river and the citizens that use and enjoy it. Even though a watershed council has no enforcement powers, it can accomplish its goals through the use of technical data, information and citizen stewardship to influence decisions made by local and state agencies.

Some watershed councils that have been significantly involved in lake management in the past include:

- The Huron River Watershed Council – www.hrwc.org
- The Clinton River Watershed Council – www.crwcc.org
- The Muskegon River Watershed Assembly – www.mrwa.org
- Tip of the Mitt Watershed Council – www.watershedcouncil.org

Michigan Inland Lakes Partnership

The purpose of the Michigan Inland Lakes Partnership is to engage state and local agencies, Native American Nations, outreach institutions (universities and other educational institutions), non-governmental organizations (NGOs), businesses, industries and citizens in a collaborative effort to ensure the quality, sustainability and ecological diversity of lakes, while considering society's needs. The Partnership is promoting communication and cooperation between partners, communities and citizens interested in the management of lakes, educating leaders, and strengthening stewardship efforts.

The Partnership is supporting efforts to research, monitor, evaluate and regulate ecosystem impact sources, such as nutrients, exotic species, soil erosion, consumptive uses, overcrowding and others, in order to develop and promote proactive, sustainable and science-based management practices.

During its first three years the Partnership has identified four goals:

- Manage Invasive Species,
- Manage Lakes as Sustainable Ecosystems,
- Educate Communities and Citizens, and
- Manage Watersheds to Reduce Pollutant Inputs.

More information about the Partnership is available at the web site www.michiganlakes.msue.msu.edu.

PART V: APPENDICES

Section 1 – Tax Tribunal Act

Section 2 – Lake Improvement Act