



Dingman River

Beals Lake

Scotts Lake

Six Mile River

St. Clair Lake

Ellsworth Lake

Wilson Lake

Benway Lake

Hanley Lake

Intermediate Lake

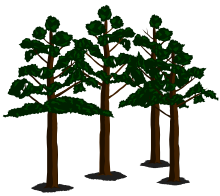
Intermediate River

Cedar River

Lake Bellaire

Elk River Chain of Lakes

Watershed Management Plan



Grass River

Clam Lake

Clam River

Torch Lake

Torch River

Lake Skegemog

Elk Lake

Elk River

Rapid River

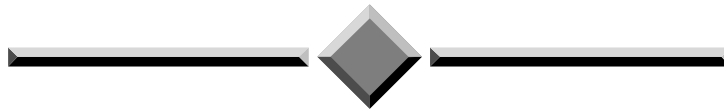
Bottle Creek

Williamsburg Creek

Lake of the Woods

Thayer Lake

*A working report describing the responsibilities,
funding needs, and time lines for coordinated activities
planned in the watershed*



Revision Date: July 2001

A decorative border surrounds the page. On the left side, there are two flowers: a larger one at the top and a smaller one below it, both with long stems. A large, thick, black swirl starts at the top right and curves around the right and bottom edges of the page.

PURPOSE

The purpose of the Elk River Chain of Lakes Watershed Management Plan is to preserve, protect, and enhance the land and water resources of the watershed, ensuring quality of life and economic viability.

INTRODUCTION

The *Elk River Chain of Lakes Watershed Management Plan* is an outline for action intended to shape the future of the Chain of Lakes region. The plan was prepared by the Conservation Resource Alliance (CRA) on behalf of a Watershed Steering Committee made up of more than 90 individuals and representatives of local government, professional organizations, business, and interest groups.

The plan is the result of a series of meetings where the Steering Committee heard reports from experts on the status and needs in the areas of water quality, wildlife, land development, education, and many other issues. A facilitated process was then used to organize the ideas and actions suggested by watershed stakeholders into a logical, time-oriented format.

The Watershed Management Plan was designed to function...

•**As a program management tool**, to:

- √ Facilitate collaboration and cooperation,
- √ Avoid duplication and inefficiency, and
- √ Help identify gaps related to watershed management activities.

•**As an educational tool**, to help show residents and visitors the “big picture” of watershed management and how any given activity fits in.

•**As a funding tool**, to help demonstrate to foundations, local donors, and public grant programs that watershed management activities are coordinated, and to show how a particular “proposed” project will lead toward meeting one or more goals.

Beneficiaries:

Implementation of the Management Plan will benefit many human and non-human groups:

bikers	fish	non-riparian	tourists/vacationers
birders	fishermen	residents	towns and villages
boaters	forests	riparian residents	vegetation
business operators	groundwater	skiers	wetlands
children	hikers	surface waters	wildlife
farmers	hunters	swimmers	
		timber operators	

Purpose and Goals:

The purpose and goals of the Watershed Management Plan are illustrated in Figure 1. Objectives were designed to fulfill each of the six goals, as identified in Figure 2.

List of Participants:

The persons listed below have participated in one or more of the Elk River Chain of Lakes work sessions conducted between June 1994 and August 1995. Many participants have elected to sign the plan, indicating their concurrence with the goals and objectives.

- John Arevalo, MDNR Land & Water Management Division _____
- Garth Aslakson, MDNR Surface Water Quality Division _____
- Marilyn Bagdonis, Three Lakes Association _____
- Tom Bauer, Michigan Dept. of Agriculture _____
- Ralph Bednarz, MDNR Inland Lakes Unit _____
- JoAnne Beemon, St. Clair Lake/Six Mile Lake Natural Area _____
- Amy Beyer, Conservation Resource Alliance _____
- Mrs. Jerry Bloom, summer resident _____
- Pepper Bromelmeier, Kalkaska and Antrim Soil & Water
Conservation Districts _____
- Richmond Brown, Antrim County Planning Commission _____
- Glen Chown, Grand Traverse Regional Land Conservancy _____
- Peg Comfort, Bellaire Schools _____
- Ben Eynon, Village of Elk Rapids _____
- Margie Fleet, Antrim County News _____
- Len Franseen, Three Lakes Association _____
- Doug Fuller, Tip of the Mitt Watershed Council _____
- William Gadwau, Central Lake Township _____
- Pete Garwood, Antrim County _____
- Don Gaskell, Torch Lake Township _____
- Warren Goodell, ESLA _____
- Laura Grantham, CRA _____
- Gail Gruenwald, Tip of the Mitt Watershed Council _____

Jim Haveman, Northwest Michigan CONSERVATION RESOURCE ALLIANCE Council _____
 Frank and Grace Herta, Milton Township _____
 John Hummer, Friends of the Jordan _____
 Milton Jacobi, Whitewater Township, Elk-Skegemog Lake Association _____
 Glen Kole, MSU Extension _____
 Ed Krigbaum, Elk-Skegemog Lake Association _____
 Larry Levensgood, Charlevoix County _____
 Jim Lively, Northwest Michigan Council of Governments _____
 Mike Merriwether, Antrim Conservation District _____
 Jack Norris, Three Lakes Association _____
 Jeanna Paluzzi, Grand Traverse Bay Watershed Initiative _____
 Janet Person, Antrim Conservation District _____
 Amy Pflughoeft, Northwest MI Council of Governments _____
 Mark Randolph, Grass River Natural Area _____
 Ty Ratliff, Northwest RC&D Council _____
 Sue Riegler, Clearwater Township resident _____
 Louis and Nancy Sanford, Elk-Skegemog Lake Association _____
 Phyllis Senske, Rapid River Township _____
 Heather Sommers, Northwest Michigan CONSERVATION RESOURCE ALLIANCE Council _
 Burt Stanley, MSU Extension _____
 Larry Sullivan, Charlevoix County Planning Department _____
 Maureen Kennedy-Templeton, Grand Traverse County
 Drain Commissioner _____
 Ron Tschudy, Grand Traverse Regional Land Conservancy _____
 Bill Weiss, Three Lakes Association _____
 Jim Wiesing, MSU Extension _____
 Christopher Wright, Grand Traverse Bay Watershed Initiative _____

Watershed Management Plan follows.

Figure 1

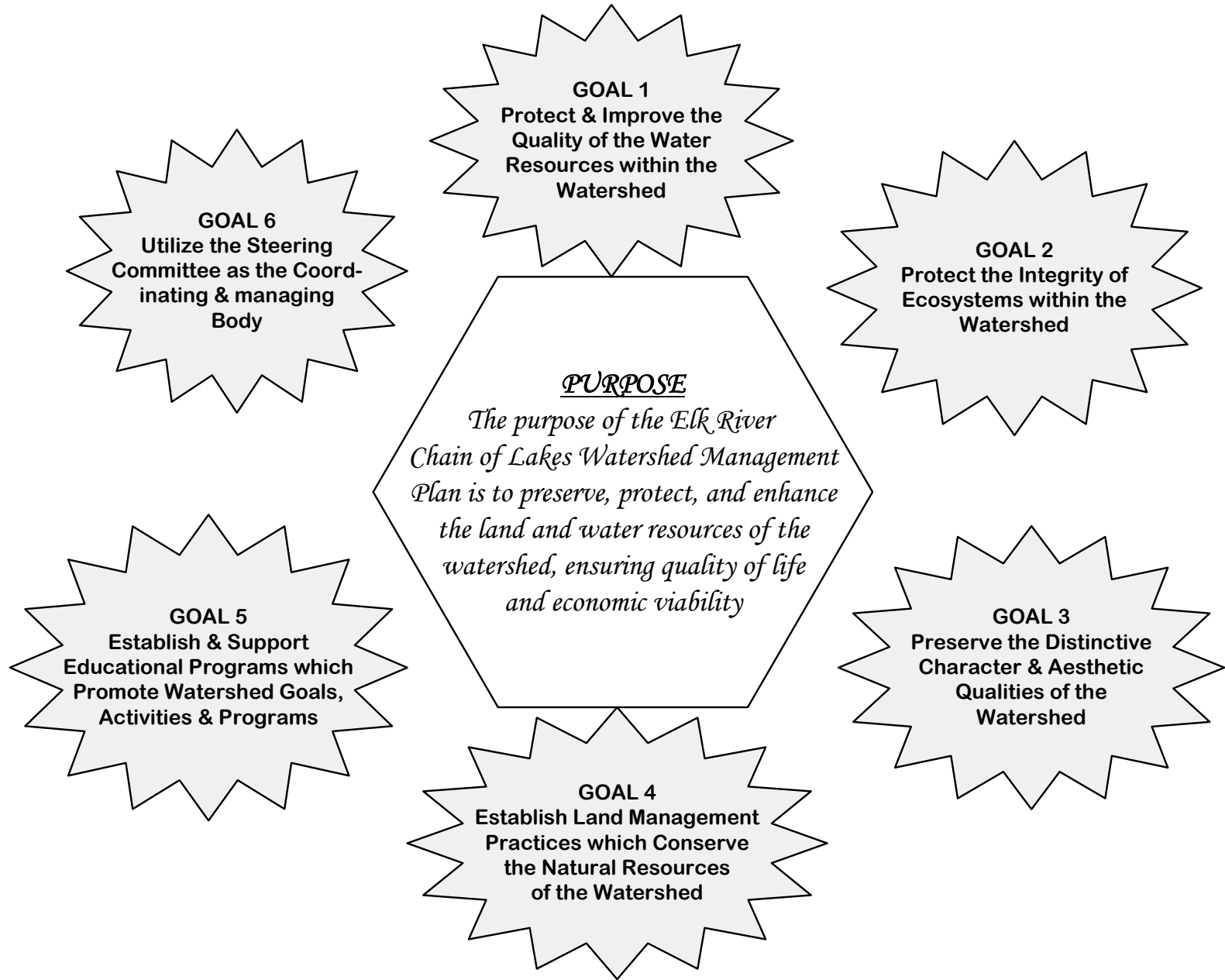
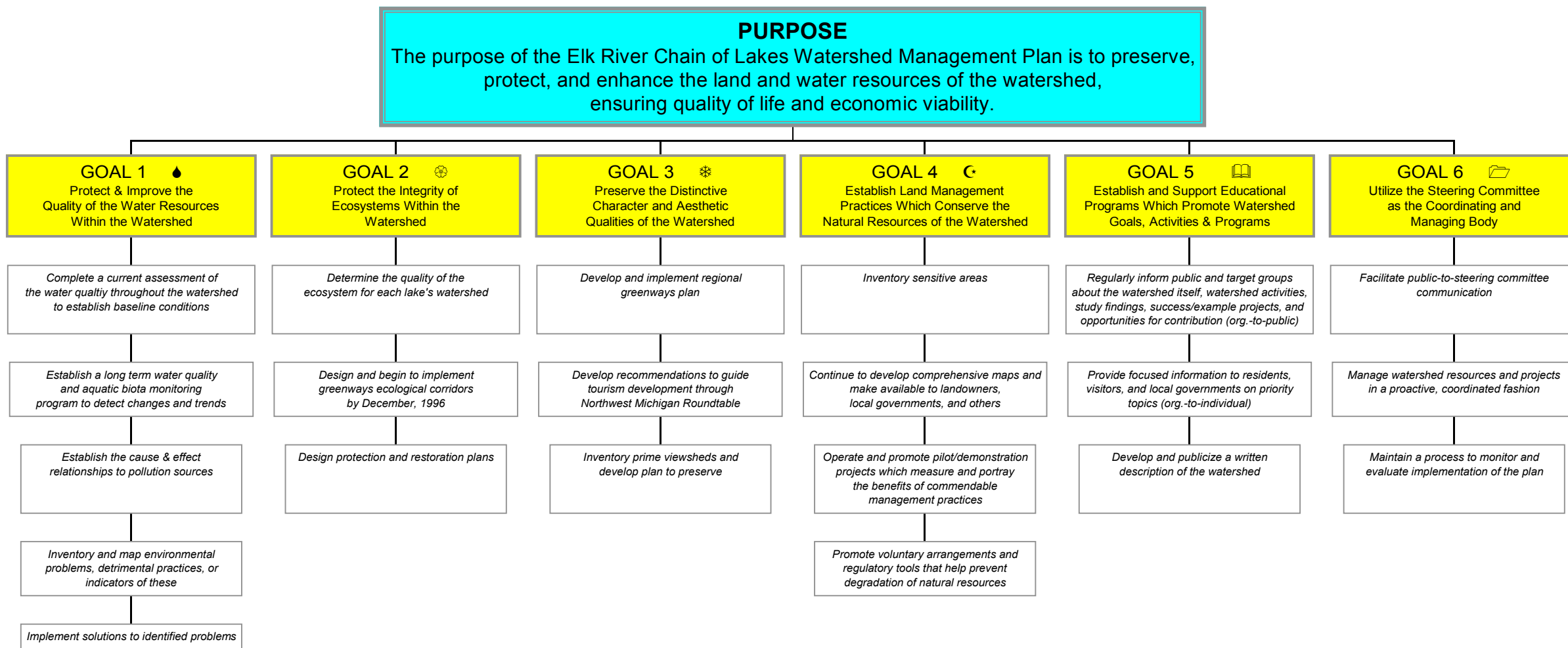


Figure 2 - Goals and Objectives of the Watershed Management Plan





GOAL 1: PROTECT & IMPROVE THE QUALITY OF THE WATER RESOURCES WITHIN THE WATERSHED

OBJECTIVE A: Complete a current assessment of the water quality throughout the watershed to establish baseline conditions



Actions & Strategies

1. Conduct initial stream monitoring

WHO? - Tip of the Mitt Watershed Council

🕒 *(completed by)?* - underway, funding dependent



Collaborators - MDNR



Funding Status – Need for increased monitoring

2. Conduct initial stream flow measurements

WHO? - Tip of the Mitt Watershed Council

🕒 *(completed by)?* - funding dependent



Collaborators - MDNR



Funding Status - Need

3. Conduct stream temperature monitoring (*hi priority)

WHO? - Antrim Conservation District

🕒 *(completed by)?* – Funding dependent



Collaborators – MDNR, Tip of the Mitt



Funding Status - Need

OBJECTIVE B: Establish a long term water quality & aquatic biota monitoring program to detect changes & trends



Actions & Strategies

1. Control and monitor for Eurasian Milfoil

WHO? - Lake Associations

🕒 *(completed by)?* – Underway as of 2001




Collaborators – Tip of the Mitt Watershed Council



Funding Status –May need additional funding for full implementation

2. Design & implement volunteer wetland monitoring program

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* – Design only is complete as of 2001, implementation is underway




Collaborators -



Funding Status -Have

3. Conduct baseline and trouble-spot monitoring of e-coli

WHO? - The Watershed Center-GTBay

 *(completed by)?* – Underway in 2000




Collaborators -



Funding Status - Have

4. Conduct dissolved oxygen monitoring in lakes that stratify

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* - Ongoing




Collaborators - Lake Associations



Funding Status - Have

5. Continue volunteer monitoring activities

WHO? Tip of the Mitt Watershed Council

 *(completed by)?* - Ongoing




Collaborators - Lake Associations



Funding Status - Have

6. Expand volunteer monitoring to additional lakes

WHO? Tip of the Mitt Watershed Council

 *(completed by)?* - Ongoing




Collaborators - Lake Associations



Funding Status - Have

7. Conduct Comprehensive Lake Monitoring every 3 years

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* - Ongoing




Collaborators -



Funding Status - Have

8. Conduct initial surveys for: attached algae, periphyton biomass, physio-chem analysis

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* - funding dependent




Collaborators -



Funding Status – Still need

9. Expand Adopt-A-Stream monitoring program

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* - Ongoing




Collaborators -



Funding Status - Need Partial

10. Conduct volunteer zebra mussel monitoring program (*hi priority)

WHO? - Three Lakes Association, Elk-Skegemog Lake Association

 *(completed by)?* - Ongoing



Collaborators –Tip of the Mitt



Funding Status - Have


OBJECTIVE C: Establish the cause and effect relationships to pollution sources



Actions & Strategies

1. Conduct septic impact evaluation

WHO? - Antrim Conservation District

 *(completed by)?* - funding dependent




Collaborators - District Health Department, Tip of the Mitt property owners, Lake Associations



Funding Status - Need

2. Assess cumulative impact associated with wetland loss (*hi priority)

WHO? - Tip of the Mitt Watershed Council, NWMCOG

 *(completed by)?* - Pilot implementation is underway as part of SWAMP project



Collaborators – MDEQ Coastal Programs



Funding Status – Need in order to expand implementation


OBJECTIVE D: Inventory & map environmental problems, detrimental practices or indicators of these



Actions & Strategies

1. Inventory shoreline and streambank erosion sites

WHO? -Antrim Conservation District

 *(completed by)?* – underway in 2001




Collaborators -



Funding Status –have partial funding through CMI (for inventory)

2. Inventory problem agricultural sites/practices

WHO? –Natural Resources Conservation Service

 *(completed by)?* - needs updating when implementation funding is ready



Collaborators -



Funding Status - Need (fund as first phase of implementation work)


OBJECTIVE E: Implement solutions to identified problems



Actions & Strategies

1. Restore wetlands

WHO? - Antrim Conservation District

 *(completed by)?* - inventory completed, wetland bank proposed as of 2001




Collaborators – Tip of the Mitt



Funding Status - Need Partial

2. Design and construct sediment control structures

WHO? - Antrim Conservation District

 *(completed by)?* - Ongoing




Collaborators – Act 451 Program



Funding Status - Have

3. Pursue funding to implement forestry best management practices

WHO? - Antrim Conservation District

 *(completed by)?* –ongoing



Collaborators –



Funding Status – County funds some, SIP funding to be pursued

Goal 1 (cont.)



4. Install agricultural best management practices on priority sites

WHO? - Antrim Conservation District



(completed by)? - Ongoing year to year



Collaborators - NRCS



Funding Status - Need Partial (have some through PL-566, Groundwater Stewardship program)

5. Improve priority water access sites

WHO? - Soil & Water Conservation District



(completed by)? - Started in 1996



Collaborators – Antrim County



Funding Status – Have partial (CMI)

6. Improve priority road/stream crossings

WHO? - Antrim Conservation District



(completed by)? – ongoing, much progress in 1999-2001



*Collaborators –*County road commissions




Funding Status – Have partial (CMI)



Goal 1 – Recently Completed Actions:


Initial near-shore aquatic macrophyte surveys

WHO? Tip of the Mitt Watershed Council

 *(completed)* – 1998




Collaborators -MDEQ

 *Funding* – MDEQ Section 319 grant through Conservation Resource Alliance


Inventory problem water access sites

WHO? - Antrim Conservation District

 *(completed)* - 1998, published 2001




Collaborators –Antrim County

 *Funding* – MDEQ Section 319 grant through Conservation Resource Alliance


Cladophora survey and sensitivity analysis

WHO? - Tip of the Mitt Watershed Council

 *(completed)* - 1998



Collaborators -Lake Associations

 *Funding* - MDEQ Section 319 grant through Conservation Resource Alliance

Write funding proposal for inventory of problem road/stream crossings

WHO? - Antrim Conservation District

 *(completed)* - 2000



Collaborators –County road commissions

 *Funding* – Antrim Conservation District



Goal 1 - Other Strategies and Actions Identified for Adoption in Future Workplans:

- ◆ Operate sustained integrated pest management program
- ◆ Install shoreline buffer strips (Tip of the Mitt is doing some of these)
- ◆ Erosion control on upper Rapid River
- ◆ Sample shallow aquifers
- ◆ Conduct periodic near-shore monitoring for: attached algae, periphyton biomass, physio-chem analysis
- ◆ Monitor rainfall and atmospheric deposition
- ◆ Install precipitation stations
- ◆ Monitor runoff
- ◆ Re-activate existing gauging stations
- ◆ Re-activate Intermediate R. gauging station (potential FEMA funding)
- ◆ Monitor shallow aquifers
- ◆ Evaluate adding phosphorous to volunteer monitoring
- ◆ Conduct periodic near-shore macroinvertebrate surveys
- ◆ Expand GREEN program (global rivers environmental education network)
- ◆ Prepare hydrology and nutrient budgets
- ◆ Evaluate environmental impacts of tourism and recreation activities
- ◆ Complete diagnostic studies of Grass River, Clam Lake, and Upper Chain
- ◆ Inventory and map water control systems (drains, storm outlets, dams, point sources)
- ◆ Map groundwater concerns (some has been completed)
- ◆ Identify areas constricting concentrated nutrients
- ◆ Inventory previously despoiled or abused land (Antrim County and Conservation District are inventorying brownfields)
- ◆ Inventory environmental problems on State land
- ◆ Continue swimmers' itch program
- ◆ Control or eliminate sources of groundwater contamination
- ◆ Develop gross values for ET, groundwater outflow, precipitation, surface water discharge, nutrient and sediment transport. (MSU Geologic Sciences is doing "Land Transformation Model" and sampling, including Chain of Lakes)

watershed. Also rigorous groundwater flow model is being developed for basin)

GOAL 2: PROTECT THE INTEGRITY OF ECOSYSTEMS WITHIN THE WATERSHED




OBJECTIVE A: Determine the current quality of ecosystem for each lake's watershed



Actions & Strategies

1. Convene a Fisheries Discussion Group in the watershed to determine status and needs related to fisheries management.

WHO? - Garth Aslakson and Amy Beyer

 *(completed by)?* – Ongoing since 1996, may re-activate as needed




Collaborators: Elk-Skegemog Lake Association Fish Committee, Soil and Water Conservation District, Fisheries Division of MDNR, Tom Bauer, Tip of the Mitt



Funding Status – Nominal funding only

2. Update creel surveys for Elk, Skegemog, and Torch Lake.

WHO? - MDNR Fisheries with Lake Association volunteer labor

 *(completed by)?* – Depends on lake association availability




Collaborators: Elk-Skegemog Lake Association, Three Lakes Association, CRA, COL Fish Committee,



Funding Status – Need volunteer support from lake associations

3. Monitor mercury in fish (different lakes in different years).

WHO? - MDNR Fisheries with MDEQ Surface Water Division

 *(completed by)?* – per year



Collaborators:



Funding Status – state funded



OBJECTIVE B: Design and begin to implement greenways ecological corridors



Actions & Strategies

1. **Inventory and map ecological corridors (done)**
2. **Develop technical overview of ecological corridor design, critiquing our methods to date**
WHO? - Conservation Resource Alliance w/consulting by Army Corps of Engineers expert
 (completed by)? - 2001
 Collaborators: Ecological Corridors Subcommittee members
 Funding Status-Have
3. **Select pilot corridor for implementation**
WHO? - Conservation Resource Alliance
 (completed by)? - end 2001
 Collaborators: Ecological Corridors Subcommittee members
 Funding Status-Have
4. **Conduct 5-7 year pilot Wild-Link program in selected corridor**
WHO? - Conservation Resource Alliance w/local partners
 (completed by)? – 2006-2008
 Collaborators: Private landowners, local conservation field partners
 Funding Status-Seeking, proposal in 2001
5. **Adjust Wild-Link approach based on pilot results and expand to full-scale implementation**
WHO? - Conservation Resource Alliance
 (completed by)? – 2006 earliest
 Collaborators: Many local partners
 Funding Status-Need
6. **Initiate volunteer reporting of target species in the watershed**
WHO? - GT Regional Land Conservancy
 (completed by)? – Depends on volunteer availability
 Collaborators: Lake and landowner association members, Grass River Natural Area
 Funding Status – Need volunteer support



7. Enhance waterfowl habitat

WHO? - MDNR – Wildlife Division

(completed by)? - begin as part of Wild-Link program implementation



Collaborators: Grass River Natural Area, Ducks Unlimited, Mid-Michigan Duck Hunter Assn., USDA-NRCS, Michigan Wildlife Habitat Foundation

Funding Status Need

8. Continue the regional (GT Bay and LT Bay) ecological corridor subcommittee to guide projects

WHO? - CRA with local partners

(completed by)? – want this to be ongoing



Collaborators: Ecological corridors subcommittee member groups

Funding Status Will fund as part of implementation project above

OBJECTIVE C: Design protection and restoration plans



Actions & Strategies

1. Evaluate and enhance muskie management and stocking program.

WHO? - MDNR Fisheries

(completed by)? –



Collaborators: COL Fish Committee,

Funding Status –

2. Continue fish stocking programs for individual lakes.

WHO? - MDNR Fisheries

(completed by)? – scheduled by MDNR



Collaborators:


Funding Status – MDNR funded



Goal 2 – Recently Completed Actions:

Publish Chain of Lakes Fisheries Guidebook

WHO? Tip of the Mitt Watershed Council

 *(completed)* – 2001




Collaborators –CRA, MDNR, Lake Associations



Funding – MDEQ Section 319 grant through Conservation Resource Alliance with publishing funds from , Herbert and Grace Dow Foundation, Dow Chemical Company, Ransom Fidelity Fund, and Frey Foundation

Identify and map ecological corridors throughout the watershed (also includes other GT and LT Bay counties – 7 total)

WHO? - Conservation Resource Alliance

 *(completed)* – 1999 (GTB) and 2001 (LTB)



Collaborators: NWMCOG, other Ecological Corridor Subcommittee member groups



Funding –MDEQ Coastal Programs and National Park Service RTCA grants through CRA

Identify localized habitat areas for target species in the COL Watershed

WHO? - GT Regional Land Conservancy

 *(completed)* - 2001



Collaborators: MDNR Wildlife Division



Funding –



Goal 2 - Other Strategies and Actions Identified for Adoption in Future Workplans:

- ◆ **Identify prime fish habitat and spawning areas (near-shore survey completed by Tip of the Mitt provides some good data)**
- ◆ **Identify impaired habitat/spawning area**
- ◆ **Establish biological and habitat survey stations on selected streams**
- ◆ **Collect sediment data**
- ◆ **Update creel surveys**
- ◆ **Evaluate fish ladder potential at Elk Rapids**
- ◆ **Seek designation of additional coldwater trout streams (proposed stream temperature monitoring program will support this)**
- ◆ **Implement projects growing out of the ecosystem protection and restoration plans**

GOAL 3: PRESERVE THE DISTINCTIVE CHARACTER AND AESTHETIC QUALITIES OF THE WATERSHED



OBJECTIVE A: Develop and implement regional greenways plan



Actions & Strategies

1. Inventory and map cultural/character features and trends

WHO? - Antrim County

(completed by)? – underway, make take several years



Collaborators – Antrim Conservation District, Grand Traverse Regional Land Conservancy



Funding Status - Have

2. Identify priority features and initiate protection actions

WHO? - GT Regional Land Conservancy

(completed by)? - underway



Collaborators: Antrim Conservation District, local & county planning departments



Funding Status - Have

3. Increase access to recreational and viewlands through local land trust

WHO? - Grand Traverse Regional Land Conservancy

(completed by)? – acquisition projects ongoing as funding allows



Collaborators: Antrim County



Funding Status - Need

4. Maintain existing parks and greenways

WHO? - MDNR/USFS/Local government

(completed by)? - Ongoing



Collaborators:



Funding Status - Need Partial


OBJECTIVE B: Guide tourism development through the Northwest Michigan Round Table



Actions & Strategies

1. Implement priority actions identified by the Roundtable for low-impact recreation

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* –




Collaborators: MSU Extension plus Roundtable Participants

 *Funding Status* -Need


2. Consider focus destination for nature education

WHO? - Possible lead by Planned Growth Committee

 *(completed by)?* – depends on support



Collaborators: Grass River Natural Area, GT Regional Land Conservancy, other Roundtable participants

 *Funding Status* -Need


OBJECTIVE C: Inventory prime viewsheds and develop plan to preserve



Actions & Strategies

1. Incorporate viewsheds in the land protection maps for the watershed

WHO? - Grand Traverse Regional Land Conservancy

 *(completed by)?* - Pieces are complete (US-31, US-131, M-66) - watershed-wide maps in 2001-2002



Collaborators: Local Governments

 *Funding Status* - Have

Goal 3 – Recently Completed Actions:

Map recreational trails in the watershed

WHO? Greenways project team

 *(completed)* – 1999




Collaborators - CRA, NWMCOG, Grass River Natural Area, local governments



Funding – MDEQ Coastal Programs and National Park Service RTCA support

Complete tourism roundtable report recommending actions

WHO? Tip of the Mitt Watershed Council

 *(completed)* – 1999




Collaborators –Resort and business owners, MSU Extension, CRA, Huron-Pines RC&D Council, local government planning officials



Funding – Mott Foundation

Complete an inventory of viewsheds in the watershed

WHO? - Grand Traverse Regional Land Conservancy

 *(complete)* – 2001



Collaborators: Local Governments



Funding -

Goal 3 - Other Strategies and Actions Identified for Adoption in Future Workplans:

- ◆ **Determine stewardship needs and educational opportunities for public lands**

GOAL 4: ESTABLISH LAND MANAGEMENT PRACTICES WHICH CONSERVE THE NATURAL RESOURCES OF THE WATERSHED



OBJECTIVE A: Inventory sensitive areas



Actions & Strategies

1. Field check wetlands identified through “SWAMP” project

WHO? - Antrim Conservation District

(completed by)? – beginning in 2001 if funded



Collaborators: NWMCOG, other “SWAMP” project members

Funding Status – Have proposed

2. Describe major wetlands

WHO? - Northwest Michigan Council of Governments/Tip of the Mitt Watershed Council

(completed by)? - October 1996



Collaborators:

Funding Status - Have

3. Inventory forested land

WHO? - Charlevoix Conservation District

(completed by)? – need to complete Charlevoix County



Collaborators: Antrim County, Antrim Conservation District

Funding Status -Have 319 funds

4. Track trends (development or conservation) in sensitive areas

WHO? - Soil & Water Conservation District/County

(completed by)? - 1998



Collaborators: NWMCOG, DNR, County Planning

Funding Status -Need partial



OBJECTIVE B: Develop comprehensive maps and make available to landowners, local governments, and others



Actions & Strategies

1. Digital Parcel -lines for entire watershed

WHO? - Northwest Michigan Council of Governments/County

🕒 *(completed by)?* - 2001



Collaborators: Lake Associations, Tip of the Mitt, MSU Extension, Village of Elk Rapids



Funding Status - Have

2. Update land use/land cover data

WHO? - Antrim County

🕒 *(completed by)?* – 2001-2002



Collaborators: NWMCOG, Antrim Conservation District



Funding Status - Have

OBJECTIVE C: Operate and promote pilot/demonstration projects which measure & portray the benefits of commendable management practices



Actions & Strategies

1. Negotiate easements, gifts, etc. from owners of critical lands

WHO? - Grand Traverse Regional Land Conservancy

🕒 *(completed by)?* - Ongoing



Collaborators: Antrim Conservation District, Grass River Natural Area, Six Mile/St. Clair, Antrim Co.



Funding Status – Challenge Fund in place, additional needs ongoing

2. Develop comprehensive composting education program, including workshops and demonstrations

WHO? - MSU Extension

🕒 *(completed by)?* - Ongoing and By Request



Collaborators: County Solid Waste, Michigan Department of Environmental Quality



Funding Status - Need Partial (MSUE currently prepared to do workshops as needed, but need funding for more comprehensive program)



OBJECTIVE D: Promote voluntary arrangements and regulatory tools that help prevent degradation of natural resources



Actions & Strategies

1. Develop and define goals for Partnership for Managed Growth

WHO? - Initial participants include lake associations and other non-profits

🕒 *(completed by)?* - 1998



Collaborators: participation needs to be broadened



Funding Status – needs will be determined

2. Develop strategy to strengthen enforcement of existing land use regulations (*hi priority)

WHO? - Partnership for Managed Growth

🕒 *(completed by)?* – 2001-2002



Collaborators: see 1. above



Funding Status – needs will be determined

3. Develop guidelines for impervious surfaces

WHO? - County or Partnership for managed growth

🕒 *(completed by)?* – to be determined



Collaborators: Antrim Conservation District, Tip of the Mitt, national resources



Funding Status: may need partial

4. Establish TMDLs (total maximum daily load) for sediment and nutrients in the watershed (*hi priority)

WHO? - MDEQ Surface Water Division

🕒 *(completed by)?* – to be determined



Collaborators:



Funding Status -

5. Assist townships to develop model ordinances

WHO? - Tip of the Mitt Watershed Council/Antrim County

🕒 *(completed by)?* - Ongoing



Collaborators:



Funding Status - Need Partial



Goal 4 (cont.)

6. Develop training sessions for local planners

WHO? - Tip of the Mitt Watershed Council/Antrim County

(completed by)? - Ongoing



Collaborators: MSU Extension



Funding Status - Need Partial

7. Stricter enforcement of soil erosion ordinance

WHO? - Antrim Conservation District/Antrim County

(completed by)? - Ongoing



Collaborators:



Funding Status - Have

8. Implement purchase of development rights project

WHO? - Antrim County, Conservation District

(completed by)? Decision in 2001



Collaborators: GT Regional Land Conservancy, townships (Milton and Torch Lake), landowners, MSU Extension



Funding Status -Need

9. Evaluate septic inspection and permitting rules

WHO? - Antrim County

(completed by)? - ongoing



Collaborators: Health Department, Antrim Conservation District, others, MSU Extension, Natural Resources Conservation Service, Michigan Department of Agriculture



Funding Status - Have

Goal 4 – Recently Completed Actions:

Inventory wetlands through the “SWAMP” project

WHO? – Tip of the Mitt

 *(completed)* – 2000



Collaborators - SWAMP project team

 *Funding* – MDEQ Coastal Programs

Describe major wetlands in the watershed

WHO? SWAMP project team

 *(completed)* – 1999



Collaborators -

 *Funding* – MDEQ Coastal Programs

Inventory of forested lands in Antrim and Kalkaska Counties

WHO? Antrim Conservation District

 *(completed)* – 2000



Collaborators -

 *Funding* –


Digital contour elevations for watershed

WHO? Now available through MDNR

 *(completed)* – 2000



Collaborators -

 *Funding* – MDNR funded


Refine & update soil survey data and produce in digital form

WHO? Natural Resource Conservation Service

 *(completed)* – 1999




Collaborators -

 *Funding* – NRCS


Provide “touch screen” systems at Torch Lake, Banks, & Milton Townships

WHO? Land Information Access Association

 *(completed)* – 1998



Collaborators - townships, Antrim County

 *Funding* – Grants from MDEQ Coastal Programs, Kellogg Foundation, Mott Foundation, and Rotary Charities




Produce and distribute GIS maps to landowners & local governments

WHO? NWMCOG

 *(completed)* – 1998




Collaborators - CRA, Tip of the Mitt, Lake Associations, Antrim Co.

 *Funding* – MDEQ Section 319 grant through CRA


Enact stricter soil erosion rules

WHO? Antrim County, Antrim Conservation District

 *(completed)* – Stormwater Ordinance 1998



Collaborators - townships

 *Funding* – County


Propose wetlands protection ordinance

WHO? Antrim County, Antrim Conservation District

 *(completed)* – 2000 (action pending)



Collaborators - townships

 *Funding* – County

Goal 4 - Other Strategies and Actions Identified for Adoption in Future Workplans:

- ◆ **Monitor ongoing and proposed developments**
- ◆ **Develop open space policies**
- ◆ **Adopt consistent zoning classifications (underway through NWMCOG mapping project funded by Coastal programs)**
- ◆ **Instate uniform zoning around surface waters**
- ◆ **Zone for non-intrusive, low impact development**
- ◆ **Pass noise ordinance to regulate oil & gas processing facilities**
- ◆ **Enforce Act 347 for roads and pipelines for oil & gas sites**
- ◆ **Pressure DNR and committees to adopt remaining Oil & Gas Task Force Report recommendations**
- ◆ **Submit comments on underground injection well permit applications (Michigan Land Use Institute, Antrim Conservation District, and Lake associations have been doing some of this) *hi priority**
- ◆ **Trace and evaluate the “development classifications” being assigned to State lands that are up for lease in the watershed**
- ◆ **Coordinate citizens to “watch over” State land & report problems**

GOAL 5: ESTABLISH AND SUPPORT EDUCATIONAL PROGRAMS WHICH PROMOTE WATERSHED GOALS, ACTIVITIES & PROGRAMS



OBJECTIVE A: Regularly inform public and target groups about the watershed itself, watershed activities, study findings, success/example projects, and opportunities for contribution (organization-to-public)



Actions & Strategies

1. Develop a coordinating body or function for environmental education (potentially through the Environmental Ed Consortium) (*hi priority)

WHO? - Antrim Conservation District, Partnership for Managed Growth
🕒 *(completed by)?* – 2001-2002



Collaborators: Tip of the Mitt, MSU Extension



Funding Status – Needs unknown

2. Consider repeating the Chain of Lakes Watershed Day

WHO? - Antrim Conservation District
🕒 *(completed by)?* – evaluate for 2002



Collaborators: all Steering Committee members



Funding Status - Need

3. Initiate stewardship program through local religious/spiritual groups (field trips & education)

WHO? - St. Clair Six Mile Lake Association
🕒 *(completed by)?* - ongoing



Collaborators: MSU Extension, NRCS



Funding Status - Need Partial

4.. Educate public on benefits of good forest management practices

WHO? - MSU Extension
🕒 *(completed by)?* - January 96 and Ongoing



Collaborators: Antrim SWCD Forester, GRNA, DNR, Stewardship Quarterly



Funding Status - Have

5. Produce riparian landowners' guidebook

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* – Ongoing as interest develops




Collaborators: Lake Associations



Funding Status – Need for additional lakes

6. Install watershed boundary signs

WHO? - Tip of the Mitt Watershed Council or Antrim Conservation District

 *(completed by)?* – 2001-2002




Collaborators: Watershed Center GT Bay



Funding Status - Need

7. Biweekly “Conservation Corner” in Antrim County News

WHO? - Antrim Conservation District

 *(completed by)?* - Ongoing




Collaborators:



Funding Status - Have

8. Install signs for recently-installed buffer strips

WHO? - Partnership for Managed Growth

 *(completed by)?* – 2001-2002



Collaborators: Tip of the Mitt, MSU Extension



Funding Status - Have

OBJECTIVE B: Provide focused information to residents, visitors, and local governments on priority topics (organization-to-individual)



Actions & Strategies

1. Provide information about oil & gas leasing and surface owner rights to landowners with severed mineral rights (*hi priority)

WHO? - Antrim Conservation District

 *(completed by)?* - Ongoing and By Request




Collaborators: MSU Extension, Torch Lake Protection Alliance



Funding Status – Need for expansion

2. Expand scope of GRNA education programs

WHO? - GRNA

 *(completed by)?* - Ongoing




Collaborators: Steering Committee Members



Funding Status - Need Partial

3. Conduct additional field trips through GRNA program

WHO? - GRNA

 *(completed by)?* - Ongoing




Collaborators:



Funding Status - Need Partial

4. Conduct shoreline stewardship program

WHO? - Three Lakes Association

 *(completed by)?* - Ongoing




Collaborators: Tip of the Mitt, MSU Extension



Funding Status – Have from Rotary Charities

5. Replicate the Six Mile Lake kiosk at Intermediate Lake

WHO? - Intermediate Lake Association

 *(completed by)?* – depends on funding




Collaborators: Six Mile/St. Clair Lake Association



Funding Status - Need

6. Implement real estate developers education program

WHO? - Tip of the Mitt

 *(completed by)?* – 2002?




Collaborators: Association of Realtors



Funding Status - Need

7. Provide info on fertilizer sources/availability and soil testing to landowners

WHO? - MSU Extension

 *(completed by)?* - Ongoing




Collaborators:



Funding Status - Have

8. Provide lawn care & fertilization info to landowners

WHO? - MSU Extension

 *(completed by)?* - Ongoing




Collaborators:



Funding Status - Have

9. Provide technical assistance to private forest owners

WHO? - Antrim Soil & Water Conservation District

 *(completed by)?* - Ongoing




Collaborators:



Funding Status - Have

10. Conduct Farm*A*Syst, Home*A*Syst, Lake*A*Syst, Turf*A*Syst, and Field*A*Syst assessments

WHO? - Northwest Michigan Groundwater Stewardship group, lake associations

 *(completed by)?* - Ongoing




Collaborators: MSU Extension, Natural Resources Conservation Service



Funding Status - Have

11. Shoreline landowners' seminars/workshops based on survey results

WHO? - Tip of the Mitt Watershed Council

 *(completed by)?* - Ongoing




Collaborators: Lake Associations



Funding Status -Have

12. Do population buildout scenarios

WHO? - Northwest Michigan Council of Governments

 *(completed by)?* -



Collaborators:



Funding Status - Need


OBJECTIVE C: Develop and publicize a written description of the watershed



Actions & Strategies

1. Use databases to produce maps/descriptions as needed by watershed projects

WHO? - Tip of the Mitt, Northwest Michigan Council of Governments

 *(completed by)?* - Ongoing



Collaborators: Steering Committee Members

 *Funding Status* – Data provided by MDEQ Section 319 project; may need mechanisms to cover map production costs

Goal 5 – Recently Completed Actions:

Riparian landowners’ handbook for Elk-Skegemog Lakes

WHO? – Elk Skegemog Lake Association

 *(completed)* – 1998




Collaborators - Fen’s Rim Publications

 *Funding* – Lake association

Real estate development education program

WHO? – Tip of the Mitt

 *(completed)* – 2000



Collaborators MSU Extension

 *Funding* -

**Goal 5 - Other Strategies and Actions
Identified for Adoption in Future Workplans:**

- ◆ Produce video showing nearshore problems and prevention.
- ◆ Produce informational video about the watershed
- ◆ Initiate speakers’ bureau
- ◆ Historical piece added to maps/descriptions (tie into trends analysis, landowners handouts)



GOAL 6: UTILIZE THE STEERING COMMITTEE AS THE COORDINATING AND MANAGING BODY

OBJECTIVE A: Facilitate public-to-steering committee communication



Actions & Strategies

1. Conduct periodic public meetings to hear input

WHO? - CRA to facilitate

🕒 *(completed by)?* – 3-4 times per year as needed



Collaborators: All Steering Committee members



Funding Status – Antrim County allocation supports this with in-kind from CRA

2. Invite public participation in many projects

3. Evaluate a toll-free call in line, staffing, and follow up mechanisms

OBJECTIVE B: Manage watershed resources and projects in a proactive, coordinated fashion



Actions & Strategies

1. Develop volunteer chair person for Steering Committee

WHO? - CRA, Pete Garwood (current chair) to facilitate

🕒 *(completed by)?* 2001



Collaborators: All Steering Committee members



Funding Status – probably N/A, but paid position will be explored

2. Integrate the Partnership for Managed Growth with current Steering Committee structure (possibly as a standing subcommittee?)

WHO? - Take up as Steering Committee action

🕒 *(completed by)?* – 2001



Collaborators: All Steering Committee members



Funding Status – N/A

3. **Seek out financial and other resources needed to implement plan**
4. **Facilitate communications and Watershed Management Plan implementation**
5. **Periodic review of organizational structure, roles, responsibilities**
6. **Coordinate activities of work completion, such as final reports**

OBJECTIVE C: Maintain a process to monitor and evaluate implementation of the plan



Actions & Strategies

1. Annually review the progress of the Watershed Management Plan

WHO? - CRA will initiate

 *(completed by)?* – every few years as needed



Collaborators: All Steering Committee members



Funding Status – Antrim County allocation supports this with in-kind from CRA


2. Explore new directions for the plan

3. Plan future projects

Goal 6 – Recently Completed Actions:

Developed and Updated Watershed Management Plan

WHO? Conservation Resource Alliance

 *(completed)* – 1995 first edition, updates in 1997, 2001



Collaborators - Full Steering Committee



Funding – CRA and Antrim County allocation