

Section I: Goals and Objectives

VISION

The vision of the Greater Bear Watershed Management Plan, developed by the stakeholders in the watershed, is to build a consensus for actions by individuals, private organizations and governmental partners that will achieve common objectives through: cooperative, coordinated efforts that support sustainable use and development of the water resources; encourage closely related wise land use practices; and, enhance historical and cultural amenities that make the area a prosperous, attractive place to live, work, and recreate for present and future generations.

GOALS AND OBJECTIVES

There are eight major goals for the Greater Bear Watershed and a series of recommended objectives and actions for each of these goals. The first five relate directly to identified protected and desired water uses in the watershed and the categories for the goals follow those established in the report used to identify existing or potential threats to legally protected uses of the surface and groundwater resources within the watershed. The sixth goal reflects the concerns expressed during the public meetings related to the economic well-being and general quality of life in the watershed. The residents of the watershed specifically identified lack of youth employment opportunities, the increasing percentage of the population in the watershed over 65, the value of scenic vistas, and the growing evidence of abandoned and blighted properties as major concerns. The final two goals focus on next steps in the implementation of the watershed plan, namely, plan leadership and periodic evaluation of progress.

- **Pathogens Affecting Humans**—Minimize presence of pathogenic organisms that impair swimming, wading, fishing, boating, water skiing and other full or partial body contact water recreation activities.
- **Ecosystem Health**—Protect and restore essential physical habitat, and maintain compliance with water quality standards designed to protect fish, wildlife, and other aquatic organisms.
- **Hazardous Materials**—Prevent future and reduce current impacts on people (fish consumption advisories) and the environment.
- **Invasive Species**—Control abundance and further distribution of exotic species injurious to protected human uses (i.e., swimming, boating, fishing, etc.) and native plants and animals.
- **Groundwater**—Protect quality and quantity of domestic and agricultural water supplies and the source of cool, clean water to surface lakes and streams.
- **Joint Planning and Development**—Coordinated local economic and land use planning to preserve and optimize local assets and expand sustainable economic development and related employment.
- **Sustainable Implementation of Greater Bear Watershed Plan**—Formation of Greater Bear Watershed Management Plan Coordinating Committee and identification of leadership responsibilities.
- **Evaluation and Revision of Management Plan Progress**—Periodic assessment of progress in implementing actions and in meeting objectives, and targets for plan revisions and updates.

IMPLEMENTING PLAN RECOMMENDATIONS

The Greater Bear Watershed Coordinating Committee is a relatively new group comprising representatives of many organizations involved with different activities that affect the health and quality of the watershed. These groups have a history of collaboratively implementing projects to monitor and improve conditions of the watershed; efforts have frequently been conducted with a subwatershed focus. Many of the highest priority actions for implementing the watershed management plan relate to

developing an organizational framework to ensure plan recommendations are achieved for the watershed as a whole. In 2013 the steering committee will form a Coordinating Committee to implement plan recommendations by partnering with groups active in the development of the plan and groups that indicated a willingness to implement recommendations. Implementation activities related to this effort are summarized under goals 7 and 8 in Exhibit 89.

In addition to formalizing the organizational and implementation structure to achieve plan recommendations selected priority activities expected to commence in 2013 include the items identified below. These activities include items from the Education Plan. Further detail about these actions and others are included Exhibits 89; 91; and 92.

- Maintain and enhance the www.bearwaters.org website to include additional educational materials
- Develop a contact directory of groups and individuals to engage in watershed activities
- Meet with representatives of the local units of government active within the watershed to discuss plan recommendations and opportunities for collaboration
- Conduct sampling for pathogens affecting humans such as *E. coli* in Greater Bear waterways
- Commence planning activities to conduct various land inventories to further assess hardened shoreline around Bear Lake and implement a demonstration project, storm water drains, and agricultural properties and management practices
- Continued monitoring of Bear Lake, Bear Creek, and tributaries for various physical, biological, and chemical parameters
- Continued treatment of Bear Lake for Eurasian milfoil
- Implement stream habitat restoration projects in Bear Creek
- Seek funding to implement one stream bank erosion restoration project on Bear Creek
- Seek funding to implement a restoration project at the first downstream road stream crossing blocking fish passage to Bear Creek and its tributaries.
- Secure funding to implement a pilot project to obtain a portable boat cleaning station to decrease the risk of unintentional spread of invasive species within the watershed, including a staff person for its operation
- Convene representatives of other watershed groups to assess opportunities for collaboration and cooperation to implement plan recommendations

Exhibit 89 outlines the goals, including priorities and estimated costs for the recommended actions to achieve the respective goals. In some instances the exhibit provides specific references in support of the actions recommended. The exhibit also identifies potential agency partners and organizations by the following acronyms:

Potential Partners

- **Nonprofit Organizations**—Bear Creek Watershed Council (BCWC), Bear Lake Improvement Board (BLIB), Bear Lake Property Owners Association (BLPOA), Bear Lake Watershed Alliance (BLWA), Conservation Resource Alliance (CRA), Cooperative Weed Management Area (CWMA), Grand Traverse Regional Land Conservancy (GTRLC), and Manistee County Alliance for Economic Success (AES)
- **Federal Agencies**—Department of Agriculture, Soil Conservation Service (SCS) and United States Forest Service (USFS); and Department of the Interior, United States Fish and Wildlife Service (USFWS)

- **State of Michigan Agencies**—Michigan departments of Natural Resources (MDNR), Environmental Quality (MDEQ), Transportation (MDOT), Community Health (MDCH), and Agriculture and Rural Development (MDARD)
- Michigan State University—Extension (MSUE)
- **Local Government**—Bear Lake, Lake Improvement Board (LIB), Villages of Bear Lake, Kaleva, and Copemish (Villages); townships within the watershed (Twps) [Benzie County: Colfax and Joyfield Townships; Manistee County: Arcadia, Bear Lake, Brown, Cleon, Copemish, Dickson, Maple Grove, Marilla, Onekema, Pleasanton, Springdale Townships; Wexford County: Wexford Township]. See Exhibit 4 in the Description of the Greater Bear Watershed section, for information on the extent to which the watershed extends into these communities.
- **Manistee County Government**—Soil Conservation District (MSCD), Road Commission (MCRC), Planning Department (MCPD), Emergency Response Management (MERM)
- **Native American Tribal Government**—Little River Band of Ottawa Indians (LRBOI)
- **Regional Government**—Northwest Michigan Council of Governments (NWMCOG), District #10 Health Department (D#10HD)

If additional partners not identified express interest in plan implementation they should be engaged as appropriate.

Estimated Cost and Timeline

The timeline begins when the plan is completed. Prioritization of tasks should be re-evaluated two years after the plan is approved. Estimated costs for implementing the goals over the 10-year horizon of the plan are identified by task in Exhibit 89. Estimates are subject to change as new information becomes relevant or as conditions in the watershed change.

Exhibit 89 contains a timeline that begins from plan completion. Many tasks will not be implemented immediately and may occur over many years of watershed plan implementation. Years in which recommendations are suggested to occur are indicated as such with an “X” in a box corresponding to the year. If conditions change or opportunities to pursue tasks emerge, the Greater Bear Watershed Plan implementation partners should re-evaluate the relative priorities and distribution of resources. Similarly, many tasks will require ongoing actions throughout the course of this plan. Information and education activities are also an important aspect of achieving the eight watershed goals. Many supporting information and education activities are included in Exhibit 92.

EXHIBIT 89. Recommended Actions to Achieve Watershed Plan Goals

Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
GOAL 1. Pathogens Affecting Humans – Minimize presence of organisms that impair swimming, wading, fishing, boating, water skiing and other full or partial body contact water recreation activities.															
1.A. Monitor Bear Lake for bacteria on routine basis to assure residents and visitors that the state WQS for total body contact recreational activities is being met from May 31-October 1 of each year.	1.A.1. Conduct <i>E. coli</i> bacteria sampling at the Township Park, the MDNR access site and at three other locations on Bear Lake every two weeks during the months of June, July, and August for three years. Thereafter, adjust sampling frequency and locations based upon previous three years' results. (see Monitoring Plan)	BLPOA, BLWA, D#10HD, Bear Lake Twp, Bear Lake Village, Pleasanton Twp	High	Establish monitoring plan in '13 Annual monitoring	\$20,000–\$30,000	X	X	X	X	X	X	X	X	X	X
1.B. Assure that Bear Creek meets state WQS for partial body contact recreational activities throughout the year.	1.B.1. In conjunction with the first year of sampling in Bear Lake, conduct additional <i>E. coli</i> sampling twice during the summer period at 4 bridge crossing locations on Bear Creek for one year. Thereafter, adjust locations and frequency based upon first year results (see Monitoring Plan)	BCWC, CRA, D#10HD, LRBOI	High	Establish monitoring plan in '13 Sampling as necessary	\$10,000–\$30,000	X	X	X	X	X	X	X	X	X	X

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Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
1.C. Reduce sources of human pathogens	1.C.1. Support adoption of local ordinances that prohibit artificial feeding of waterfowl in or on the riparian properties adjacent to Bear Lake	BLPOA, BLWA, Twps, Bear Lake Village, MCPD	Medium	I/E materials on Web in '13 Provide sample language to Twps and village '15	\$10,000			X	X	X	X	X	X	X	X	
	1.C.2. Seek funding to develop and distribute educational materials to area residents and visitors that explains the human health risks associated with artificial feeding of waterfowl, uncontrolled pet and livestock waste, and failing onsite wastewater treatment systems, and the BMPs that minimize these sources of human pathogens (see Education Plan)	BCWC, BLPOA, BLWA, Villages, MCPD	High	I/E materials on Web in '13 Triennial distribution (see Education Plan)	Estimated cost included in I/E plan	X	X				X					
	1.C.3. Seek funding for and implement demonstration projects that would encourage the application of BMPs to reduce sources of human pathogens along Bear Lake, Bear Creek and/or tributaries	BCWC, BLWA, BLPOA, CRA, MSCD, MDEQ, MDNR	Medium	ID sites in '13 (see 1.B.1); Provide I/E materials to ag land owners '14; Prepare proposal in '15; Implement '16/'17	\$75,000	X	X	X	X	X						

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Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Goal 2. Ecosystem Health – Protect and restore essential physical habitat, and maintain compliance with water quality standards designed to protect fish, wildlife and other aquatic organisms.															
Nutrient Management															
2.A. Reduce nutrients and other surface runoff pollutants from entering Bear Lake, incorporating principles of Low Impact Design	2.A.1. Perform engineering study to identify sources and contribution of pollutants from unmanaged storm water entering the lake and recommend storm water BMPs to reduce loadings	BLPOA, BLWA, CRA, MCPD	High	Field work '13; GIS Maps '14; Die Test '15; ID BMPs '16;	\$35,000– \$100,000	X	X	X	X						
	2.A.2. Implement cost-effective BMPs for management of storm water discharged by conduits and drains to the lake using the principles of Low Impact Design.	BLPOA, BLWA, MCRC, Twps, Village	High	Complete 2.A.1 As necessary	\$100,000– \$250,000				X	X	X	X	X	X	X
	2.A.3. Stencil storm water drains indicating they flow to Bear Lake	BLPOA, MCRC, Twps, Village	High	Complete 2.A.1 20%/year '15 -20	\$10,000			X	X	X	X				
	2.A.4. Seek funding for and implement demonstration projects that would encourage the application of BMPs on private riparian property to retain and filter runoff	BCWC, BLWA, BLPOA, CRA, MDEQ, MDNR	Medium	Secure funding & complete 1 project '13-'14	\$25,000	X	X								
	2.A.5. Distribute educational materials on BMPs that can be used by homeowners to retain and filter runoff from impervious surfaces on their property (see Education Plan)	BCWC, BLPOA, BLWA, CRA, MSCD, MCPD	Medium	I/E materials on Web in '13 Triennial distribution (see Education Plan)	Estimated cost included in I/E plan	X	X				X				

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Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
2.B. Reduce nutrients and other pollutants from entering Bear Creek and tributaries from riparian properties	2.B.1. Produce and distribute educational materials to residential, business, and farming riparian property owners on how to apply BMPs to reduce nutrient & sediment loading to Bear Creek and tributaries (see Education Plan)	BCWC, MSCD	Medium	Materials on Web '13; Educational forum '14; ID properties '15	Estimated cost included in I/E plan	X	X	X	X						
	2.B.2 Conduct an assessment of agricultural properties and management practices with the farming community to determine properties to implement BMPs	BCWC MDARD, MDEQ, MSCD	High	Aerial inventory '13; ID Ag land '14; ID Parcels '15; Approach land owners '15-'22	\$35,000	X	X	X	X	X	X	X	X	X	X
2.C. Monitor productivity of Bear Lake	2.C.1. Measure transparency, chlorophyll a and/or total phosphorus throughout the open water season to detect changes in trophic status (see Monitoring Plan)	BLIB BLPOA, BLWA, Twps, Villages	High	Annual Monitoring	\$20,000	X	X	X	X	X	X	X	X	X	X
	2.C.2. Measure rooted plant biomass to measure changes (see Monitoring Plan)	BLIB BLPOA, BLWA, Twps, Villages	Medium	Sample '16 Compare to prior studies '17	\$5,000- \$10,000				X	X					

Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
						X	X	X	X	X	X	X	X	X	X	X
Habitat Protection																
<p>2.D. Protect remaining wetlands and natural shore vegetation on Bear Lake, Bear Creek, and tributaries to maintain natural filter for nutrients and other pollutants contained in storm water runoff and provide habitat for aquatic species</p>	<p>2.D.1. Develop and distribute educational materials to riparian property owners on the value and importance of riparian wetlands and vegetative shoreline areas (See Education Plan)</p>	<p>BCWC, BLPOA, BLWA, CRA</p>	<p>High</p>	<p>I/E materials on Web '13 Triennial distribution (see Education Plan)</p>	<p>Estimated cost included in I/E plan</p>	X	X	X	X	X	X	X	X	X	X	
	<p>2.D.2. Support adoption/enforcement of congruent local regulations that require impervious surface setbacks from waterbodies, and other provisions to reduce impacts on aquatic habitat</p>	<p>Twps, Villages, MCPD</p>	<p>Medium</p>	<p>I/E materials on Web '13; Draft sample language/manual '14; Meet with local officials '15 (ongoing)</p>	<p>\$20,000</p>	X	X	X	X	X	X	X	X	X	X	X
	<p>2.D.3. Conduct an assessment of remaining wetlands and determine highest priority parcels for continued preservation. Acquire fee ownership and/or easements by public or private entities to provide long-term protection.</p>	<p>GTRLC, MDNR</p>	<p>Medium</p>	<p>Landowner Workshop '13/14 80 Acres/year on average</p>	<p>\$1,000,000</p>	X	X	X	X	X	X	X	X	X	X	X
<p>2.E. Restore in-stream and shoreline habitat/vegetative cover</p>	<p>2.E.1. Insert woody debris in selected areas in Bear Creek where MDNR Fisheries has determined lack of natural cover is limiting resident trout populations like the area proximate to the Coates Highway bridge (Tonello 2011)</p>	<p>BCWC, CRA, MDNR, LRBOI</p>	<p>Medium</p>	<p>ID locations '13 Write proposals '14 Complete 5 sites/10 yrs</p>	<p>\$50,000</p>	X	X	X	X	X	X	X	X	X	X	
	<p>2.E.2. Establish shoreline trees and/or shrubs along Bear Creek where the lack of shade is a contributing factor to summer stream temperatures higher than WQS for trout and salmon (Tonello 2011)</p>	<p>BCWC, CRA, MDNR, LRBOI</p>	<p>Medium</p>	<p>ID locations '13 Write proposals '14 Complete 5 sites/10 yrs</p>	<p>\$100,000</p>	X	X	X	X	X	X	X	X	X	X	
	<p>2.E.3. Implement at least one demonstration project on Bear Lake where hardened erosion protection is modified to incorporate habitat restoration</p>	<p>BLWA, CRA, MSCD, MDNR</p>	<p>High</p>	<p>ID property '13 Implement '14 Hold I/E event '15</p>	<p>\$50,000</p>	X	X	X	X	X	X	X	X	X	X	

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Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	2.E.4. Develop a shoreline inventory of Bear Lake to identify priority locations for restoration projects	BLPOA, BLWA , MDNR, MDEQ, MCPD	High	Develop methodology '13; Field Assessment '14; Develop map '15	\$10,000–\$30,000	X	X	X							
2.F. Restore bank stability on Bear Creek where historical logging practices and related activities or current uses have removed natural vegetative cover	2.F.1. Continue to restore severely and moderately eroding priority sites and evaluate effectiveness at previously restored sites using inventory and ranking of bank erosion sites compiled by the Conservation Resource Alliance; update the inventory as appropriate www.northernmichiganstreams.org	CRA , LRBOI, MDNR, BCWC	High	5 sites/5 yrs	\$1,500,000	X	X	X	X	X	X	X	X	X	X
2.G Minimize barriers to fish migration associated with road crossing and reduce their sediment load on Bear Creek and tributaries	2.G.1 Enhance fish migration where blockage now exists and reduce sediment load at road stream crossings using the road stream crossing inventory compiled by Conservation Resource Alliance; update the inventory as appropriate www.northernmichiganstreams.org	CRA , LRBOI, MDNR, BCWC	Medium	5 sites/5 yrs	\$1,500,000	X	X	X	X	X	X	X	X	X	X
2.H Monitor fish populations in Bear Lake, Bear Creek and tributaries	2.H.1 Conduct routine fish population monitoring surveys for three consecutive years commencing '11-13 and '17-19 (see Monitoring Plan)	MDNR , LRBOI	High	Completed (Y/N)	\$25,000	X				X	X	X			

Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022				
Goal 3. Hazardous Materials – Prevent future and reduce current impacts on people (fish consumption advisories) and the environment																			
3.A. Control use, storage, and disposal of hazardous materials	<p>3.A.1 Support and encourage use of current household hazardous waste disposal program provided by the Manistee Soil Conservation District and promote use of non-toxic materials www.manisteeecd.org/programs_hazard.html</p> <p>3.A.2. Develop and distribute information to residents, private businesses, municipal governments, and schools on BMPs to prevent release of hazardous materials into the environment, including the new statewide ban on burning of certain waste (see Education Plan)</p>	<p>MSCD, See long list of partners on their website</p> <p>MSCD, See long list of partners on their website</p>	Medium	<p>I/E Materials to Web '13; Meet with MSCD to assess needs '15/16</p> <p>I/E materials on Web '13 Triennial distribution (see Education Plan)</p>	<p>\$10,000</p> <p>Estimated cost included in I/E plan</p>	X		X	X										
3.B. Update contingency roadway accident spill response plans	<p>3.B.1. Support development of a locally generated and state approved contingency plan and training for first responders for road accidents involving fuel or other hazardous materials to minimize runoff to surface waters of Bear Lake, Bear Creek and its tributaries that includes the accessibility and deployment of temporary booms, absorbent materials, and the ability to temporarily prevent discharges from Bear Lake into Little Bear Creek</p>	<p>BLPOA, BLWA, BCWC, MERM, Michigan State Police, MDEQ, Twps</p>	High	<p>Review existing plans '13; Determine if equipment and materials is available '14 Obtain supplies as needed; Conduct training as needed</p>	<p>\$25,000– \$75,000</p>	X	X												
3.C. Reduce human exposure to hazardous materials from atmospheric sources outside of the watershed that bioaccumulate in area fish	<p>3.C.1. Provide updated and reliable information to anglers on consumption guidelines for fish contaminated with PCBs and mercury from atmospheric deposition (see Education Plan)</p>	MDCH , MDNR	Low	<p>Link to MDCH on website '13 Add I/E materials to Web '13</p>	<p>Estimated cost included in I/E plan</p>	X													

Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Goal 4. Invasive Species – Control abundance and further distribution of exotic species injurious to protected human uses (i.e., swimming, boating, fishing, etc.) and native plants and animals															
4.A. Control abundance of Eurasian milfoil in Bear Lake	4.A.1. Continue control of Eurasian milfoil following annual assessments by using selective herbicides in targeted areas and limiting herbicide application to 24D or other chemicals specifically targeted to control of Eurasian milfoil. Limit signs and information provided to residents to use advisories for the chemicals actually used in treatment. 4.A.2. Promote the development and use of biological controls or other alternatives to reduce or avoid the use of chemical controls	BLIB, BLPOA, BLWA, MDNR	High	Complete annually	\$200,000– \$1,000,000	X	X	X	X	X	X	X	X	X	X
4.B. Limit the spread of wetland invasive species such as <i>Phragmites</i> sp. and purple loosestrife	4.B.1 Formalize existing efforts to monitor and remove <i>Phragmites</i> sp. and purple loosestrife from wetland areas adjacent to Bear Lake	BLPOA, MDNR; Other watershed groups	High	Meet with statewide and local groups beginning '14	\$10,000	X	X	X	X	X	X	X	X	X	X
4.C. Control the unintentional introduction and spread of invasive plant and animal species in the watershed including general watershed technical assistance in Manistee county	4.C.1. Support the development of a pilot program that would involve distribution of information to the public, landscapers, and property developers on the harmful effects of invasive species on native flora and fauna and methods of control, and support monitoring programs to identify problem species and sources (see Education Plan). 4.C.2 As part of pilot program, purchase a portable boat cleaning station and provide staff support for its operation at public access sites on Bear Lake	BCWC, BLIB, BLIBLPOA, Manistee Co. BLWA, CRA, USFS	High	Summarize/review existing efforts '14 Develop action plan '15	\$10,000	X	X	X	X	X	X	X	X	X	X
		BCWC, BLIBLPOA, Manistee Co. BLWA, CRA, USFS	Medium	Initiate cooperative program between USFS and Manistee Co '13 Re-evaluate annually	\$800,000 (tasks 4.C.1 & 4.C.2)	X	X	X	X	X	X	X	X	X	X
		BLPOA, BLIB, BLWA, MDNR, Manistee Co USFS	High	Initiate cooperative program between USFS and Manistee Co '13 Re-evaluate annually		X	X	X	X	X	X	X	X	X	X

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Goal 5. Groundwater — Protect quality and quantity of domestic and agricultural water supplies and the source of cool, clean water to surface lakes and streams															
5.A. Protect existing quality of drinking water supplies	5.A.1. Support enforcement of wellhead protection ordinances in villages of Bear Lake and Kaleva	MCPD, Villages, MSUE, MDEQ	High	Add materials to Web '13 Triennial distribution	\$10,000	X		X	X			X			X
	5.A.2 Provide information on testing individual water supplies and BMPs to prevent contamination including need to effectively plug abandoned water wells, mineral wells, and hydrocarbon wells (see Education Plan)	D#10HD, MSUE, MDEQ	Medium	Obtain existing info; add to website '13 Triennial distribution	Estimated costs included in I/E plan	X		X	X				X		
5.B. Protect quality/quantity of groundwater to Bear Lake and Bear Creek	5.B.1 Encourage Manistee County to continue to monitor the regulation of new agricultural and industrial groundwater withdrawals/uses to assure no significant adverse impacts on the quantity or quality of groundwater	MDEQ, BCWC, MCPD	Medium	Manistee Co continues to review permit applications on an ongoing basis	\$50,000	X	X	X	X	X	X	X	X	X	X
	5.B.3 Support the development and distribution of materials to encourage watershed residents, commercial entities, and visitors to conserve water (see Education Plan)	BLPOA, BLWA, BCWC, NWMCOG, Twps, Villages	Low	Materials added to Web '13 Triennial distribution	Estimated cost included in I/E plan	X		X	X				X		

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Goal 6. Joint Planning and Development – Coordinated local economic and land use planning to preserve and optimize local assets and expand sustainable economic development and related employment															
6.A. Encourage sustainable economic development and job creation	6.A.1. Support ongoing efforts to expand informal collaboration and formal joint planning and economic development by local governmental units that maximize the potential of local natural and human assets, including the Lakes to Land regional initiative, Comprehensive Economic Development Strategy (CEDS), Kaleva and Maple Grove Township joint Recreation Plan, USFS Forest Management Plan, State Forest Management Plan, Manistee Co Recreation Plan and others	AES, MCPD, NWMCOG, MDNR, USFS, Twps, Villages	High	Lakes to Land regional initiative Convention of Communities '13 State Forest Management Plan '14 Ongoing based on planning cycles	\$1,000,000	X	X	X	X	X	X	X	X	X	X
6.B. Reduce urban and rural blight	6.B.1 Encourage coordinated local township and village adoption and enforcement of clean-up requirements for blighted properties to preserve property values and quality of life for watershed residents and visitors	AES, MCPD, NWMCOG, Twps, Villages	High	Complete ordinance/enforcement review '14 Analysis & recommendations '15	\$50,000		X								
6.C. Protect scenic vistas, cultural and historical sites	6.C.1. Identify sites and establish land use plans and zoning that preserve scenic vistas and cultural and historical sites that can be promoted for the enjoyment of residents and visitors	AES, MCPD, NWMCOG, LRBOI, Twps, Villages	Medium	Manistee Co Recreation Plan inventory '15	\$50,000			X							

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6.D. Improve public recreational access to surface waters through the Explore the Shores and other programs	6.D.1. Identify sites to add additional recreational access to watershed resources to support natural resource-based tourism	AES, MCPD, MDNR, NW/MCG, BLWA, BLPOA, BCWC, Twps, Villages	Medium	Identify new sites by '15	\$10,000	X	X	X								
		AES, MCPD, MDNR, NW/MCG, BLWA, BLPOA, BCWC, Twps, Villages	Medium	Complete plan '17	\$100,000-\$500,000											
		AES, MCPD, MDNR, NW/MCG, BLWA, BLPOA, BCWC, Twps, Villages	Low	Implement '18 - 22												
6.E Coordinate watershed planning and implementation with other organizations	6.D.3. Improve wayfinding to access areas through signage, maps within the watershed and electronic resources such as the Explore the Shores website	AES, LRBOI, MCF, NW/MCOG, MDARD, MDEQ, USFWS	High	Complete '19	Estimate included in I/E plan	X	X	X	X	X	X	X	X	X	X	
		AES, LRBOI, MCF, NW/MCOG, MDARD, MDEQ, USFWS	High	Convene '13	\$35,000											
	6.E.1 Convene other watershed councils/organizations, including the Lakes to Land Regional Initiative and Explore the Shores to assess opportunities for collaboration and cooperation among watershed groups and organizations.	AES, LRBOI, MCF, NW/MCOG, MDARD, MDEQ, USFWS	High	Convene '13	\$35,000	X	X	X	X	X	X	X	X	X	X	
				Strategy developed '15												
				Secure implementation funding '16-'17												

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						X	X	X	X	X	X	X	X	X	X
Goal 7. Sustainable Implementation of Greater Bear Watershed Plan – Formation of Greater Bear Watershed Management Plan Coordinating Committee and identification of leadership responsibilities															
7.A. Establish the infrastructure for GBWMP Implementation	7.A.1. Designate current Greater Bear Watershed Management Plan Steering Committee as interim Coordinating Committee	Existing Coordinating Committee	High	Completed '13	\$500	X									
	7.A.2 Obtain written commitments from individuals and organizations on the Coordinating Committee to cooperate in plan implementation	Existing Coordinating Committee	High	Draft MOU '13 Distribute and Execute MOUs '13 and ongoing	\$5,000	X	X	X	X	X	X	X	X	X	X
	7.A.3. Expand Implementation Partners to include other interested organization/individuals critical to implement the elements of the plan	Existing Coordinating Committee/ Implementation Partners	High	Engage community stakeholders '13 and ongoing	\$2,500	X	X	X	X	X	X	X	X	X	X
	7.A.4. Adopt operating procedures for the coordinating committee, elect officers and appoint committees, establish meeting frequency of at least twice a year. Accept offers by implementation partners to serve as the default fiduciary for grant management in the absence of other capacity to manage grant applications and administration.	Existing Coordinating Committee/ Implementation Partners	High	Draft operating procedures '13 Adopt procedures '13/14 Evaluater/revise operating practices '15 Ongoing implementation	\$2,500	X	X	X	X	X	X	X	X	X	X
7.B Establish a charitable giving & philanthropic strategy to support plan implementation .	7.B.1 Establish a fund(s) at the MCCF and explore other philanthropic opportunities to finance plan implementation .	MCCF, Implementation Partners	High	Fund established '13/14	\$1,000– \$10,000	X	X	X							

Greater Bear Watershed Management Plan

Objectives	Actions	Potential Partners (lead in bold)	Priority	Milestone(s)	Estimated Cost	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Goal 8. Evaluation and Revision of Management Plan Progress – Periodic assessment of progress in implementing actions and in meeting objectives, and targets for plan revisions and update.															
8.A. Annual assessment of progress	8.A.1 Formalize the process by which the Coordinating Committee and Implementation Partners collect and track data to monitor implementation of the plan including financial support.	Implementation Partners	High	Complete in '13/'14	\$1,000–\$5,000	X	X								
	8.A.2. Review progress in implementing actions identified in plan and make appropriate adjustments in timelines. Summarize progress and activities annually (See Education Plan).	Implementation Partners	High	Complete annually	\$50,000	X	X	X	X	X	X	X	X	X	X
	8.A.3. Determine progress in meeting goals and objectives, particularly attainment of State Water Quality Standards, and establish, with public input, targets/ revised goals and objectives for the next decade	Implementation Partners & Coordinating Committee	High	Complete '22	\$50,000–\$100,000										

SOURCE: Public Sector Consultants, and the Greater Bear Watershed Management Plan Steering Committee, 2013.

Estimated costs for each task identified above by goal and the total cost are summarized in Exhibit 90. The estimated cost of implementing goals and objectives ranges from \$7,072,500 to \$8,655,500 for the 10-year horizon of the plan. These figures are estimated costs and include staff time, volunteer time, supplies, and materials. Estimates are subject to change as additional information becomes available. Additional costs are calculated for the Education Plan.

EXHIBIT 90. Estimated 10-Year Costs to Achieve Tasks by Plan Goal

Goal	Estimated Cost (Low)	Estimated Cost (High)
Pathogens Affecting Humans	\$115,000	\$145,000
Ecosystem Health	\$4,485,000	\$4,725,000
Hazardous Materials	\$35,000	\$85,000
Invasive Species	\$1,020,000	\$1,820,000
Groundwater	\$60,000	\$60,000
Joint Planning and Development	\$1,245,000	\$1,645,000
Sustainable Implementation of Greater Bear Watershed Plan	\$11,500	\$20,500
Evaluation and Revision of Management Plan Progress	\$101,000	\$155,000
Total	\$7,072,500	\$8,655,500

SOURCE: Public Sector Consultants, and the Greater Bear Watershed Management Plan Steering Committee, 2013.
 NOTE: Estimated costs include multiple resources such as volunteer time, staff time, materials, and equipment.