Estimates of Technical and Financial Assistance Needed

For each of the structural and non-structural management measures described in Section 4.5 that support achievement of Goal 1 (Restoration of Water Quality), there are widely varying degrees of financial and technical assistance needed. Estimating financial and technical assistance for each management measure over the ten year implementation period of this plan is challenging since many of the measures are highly dependent on site-specific characteristics. This plan is a general implementation plan designed at the whole watershed level, therefore many of the site-specific characteristics are unknown and will be determined as projects develop. For these reasons, we propose a graduated level of cost estimates (Table 1) and technical assistance needs (Table 2).

Table 1. Graduated cost scale used to estimate approximate costs of proposed implementation activities.

Cost Classes	Description	Included Actions	Estimated Annual Costs
Class 1	Generally only staff time is needed	Meetings, presentations	$1,000-$5000
Class 2	Includes all above costs plus printing, postage, advertising costs and speaker fees	Mailings and workshops	$4,000-$8,000
Class 3	Includes all above costs plus consultant fees (planning and design)	Field inventory, special data collection, site-specific planning and design	$8,000-$10,000
Class 4	Includes all above costs plus consultant fees (construction costs).	Construction and implementation of projects	>$10,000-$100,000 * larger construction may exceed the $100,000 threshold

Note that the costs associated with the implementing the Information and Education Strategy are included in Appendix B.

Table 2. Graduated technical assistance needs scale to estimate approximate needs for implemented proposed activities.

Assistance Levels	Description	Included Actions	Sources
Level 1	No special assistance needed, can be handled by MACC staff	Distribute information, meetings, presentations	MACC/Partners
Level 2	Some technical assistance needed	Local outside experts needed, meetings, workshops, presentations, technical assistance	Universities, local and state level agricultural agencies, State of Michigan staff/regulators,
Level 3	Moderate technical assistance needed	Low level consulting help, planning and data collection, develop project and recommendations, grant applications	Local consultants, developers, engineers, planners
Level 4	Significant technical assistance needed	High level consulting help, project implementation, construction, troubleshooting	Specialty consultants, developers, engineers, planners

Appendix P: Implementation Schedule of Proposed Actions, Milestones, Costs and Funding Sources

Pollutant	Source/Cause (High and Mod Priority Only)	Mgt Measure	Schedule[1]	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
Nutrients Sediment Hydrology	Agricultural Runoff/ Loss of wetlands	Wetland Restoration	Short term	1. Create mailing list of landowners in areas of high potential wetland restoration areas. 2. Identify vacant parcels and those owned by local units of government. 3.Distribute information on wetland restoration funding opportunities. 4. Hold two informational sessions for local residents.	Class 2	$3,000 acre not including land costs Maintenance Costs: Moderate to high, burning, invasive species removal, planting, (budget 2-5% of installation costs)	Level 2	Ducks Unlimited NRCS Programs Section 319 Grant Funds EPA GLRI Grant Funds Sustain Our Great Lakes grant funds Great Lakes Basin Program for Soil Erosion and Sediment Control funds NOAA Great Lakes Habitat Restoration Program North American Wetlands Conservation Act Grants Private donors Private landowners
			Mid term	5. Meet with interested landowners and conduct field visits. 6. Identify parcels and partners for wetland restoration projects for those acres. 7. Pursue grant funding or government cost-share programs for wetland projects (at least 5 grant applications). 8. Secure funding and start restoration activities for 50% of wetland projects.	Class 3		Level 3	
			Long term	9. Create mailing list of landowners in moderate potential wetland restoration areas. 10. Distribute information on wetland restoration opportunities. 11. Schedule individual meetings with landowners in these areas. 12. Pursue grant funding or outright land purchase for remaining 50% of wetland projects. 13. Secure funding and start restoration activities for remaining 50% of wetland projects.	Class 4		Level 4	
		Wetland Protection Ordinance	Short term	1. Create inventory of current wetland protection ordinances in local units of government in the Macatawa Watershed. 2. Review and evaluate ordinances, identify needed improvements or revisions. 3. Present findings to local units of government.	Class 1	$8,000 per ordinance Maintenance Cost: Low, Periodic Updating, ~<$100/year	Level 1	Local units of government, MACC membership dues, communuity foundations, EPA CARE grant (Community Action for a Renewed Environment)
			Mid term	4. Conduct workshop for local units of government on wetland protection. 5. Provide technical assistance and sample ordinances.	Class 2		Level 2	
			Long term	6. Work to implement 4 new ordinances.	Class 3		Level 3	

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Pollutant	Source/Cause (High and Mod Priority Only)	Mgt Measure	Schedule[1]	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
Nutrients Sediment Temp *E.coli*	Agricultural Runoff/ Lack of riparian buffers	Increase Buffers	Short term	1. Create mailing list of riparian landowners in highly critical agricultural areas. 2. Identify parcels owned by local units of government and private residents. 3.Distribute information on buffer importance geared at residential land use. 4. Hold two informational sessions for residential homeowners.	Class 2	$300/acre Costs for BMPs are included in 2010 and 2002 Agricultural Inventory (Appendix R) Maintenance Costs: Low to moderate, mowing to occasional repair, ~$10/acre	Level 1	NRCS Programs Section 319 Grant Funds EPA GLRI Grant Funds Sustain Our Great Lakes grant funds Great Lakes Basin Program for Soil Erosion and Sediment Control funds Private landowners
			Mid term	5. Document installation of 45% of needed buffers. 6. Distribute information to agricultural landowners. 7. Identify highly critical parcels. Hold one-on-one meetings. 8. Provide technical assistance to landowners to utilize government cost-share programs and conservation easements for buffers. 9. Document installation of 30% of needed buffers.	Class 2		Level 2	
			Long term	10. Create mailing list of landowners in moderately critical agricultural areas. 11. Identify parcels owned by local government and private residents. 12. Provide technical assistance to landowners to utilize government cost-share programs and conservation easements for buffers. 13. Document installation of final 25% of needed buffers.	Class 2		Level 2	
		Riparian Overlays Zoning	Short term	1. Create inventory of current riparian protection ordinances in local units of government in the Macatawa Watershed. 2. Review and evaluate ordinances, identify needed improvements or revisions. 3. Present findings to local units of government.	Class 1	$8,000 per ordinance Maintenance Cost: Low, Periodic Updating, ~<$100/year	Level 1	Local units of government, MACC membership dues, community foundation, EPA CARE grant (Community Action for a Renewed Environment)
			Mid term	4. Conduct workshop for local units of government on riparian protection strategies. 5. Provide technical assistance and sample ordinances.	Class 2		Level 2	
			Long term	6. Work to implement 5 new ordinances.	Class 3		Level 3	

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Pollutant	Source/Cause (High and Mod Priority Only)	Management Measure	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
Nutrients Sediment Hydrology	Agricultural Runoff/ Lack of BMPs	Implementation of various BMPs	Short term	1. Create mailing list of landowners in highly critical agricultural areas. 2. Identify parcels owned by local units of government and private residents. 3. Widespread distribute of information on important BMPs. 4. Hold five informational sessions for landowners.	Class 2	Cover Crops ($35/acre, same for maint.) Grassed Waterway ($3,000-$5000/acre no tile, $100/acre maint.) Conservation Tillage ($10/acre not including equipment purchase, <$1 acre maint.) Critical Area Planting ($500-$1000/acre, <$10/acre maint.) Grade Stabilization ($4000-$8000, <$10 maint.) Drainage Water Management ($3/acre covered, $100/yr maint.) Gypsum Amendments $50/ton (2-3 tons per acre, as needed) Two Stage Ditch ($10-$12/ft, <$100 year maint.) Costs for traditional BMPs are included in 2010 and 2002 Agricultural Inventory (Appendix R)	Level 2	NRCS Programs Section 319 Grant Funds EPA GLRI Grant Funds Sustain Our Great Lakes grant funds Great Lakes Basin Program for Soil Erosion and Sediment Control funds NRCS Conservation Innovation Grants Private landowners
			Mid term	5. Identify highly critical parcels. Hold one-on-one meetings. 6. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 7. Document installation of 50% of needed BMPs. 8. Promote installations locally and generate awareness. 9. Conduct tour of locally installed BMP projects.	Class 3		Level 3	
			Long term	10. Create mailing list of landowners in moderately critical agricultural areas. 11. Identify parcels owned by local government and private residents. 12. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 13. Document installation of final 50% of needed BMPs.	Class 4		Level 4	
		MAEAP Verification	Short term	1. Create list of all currently MAEAP-verified farms. 2. Promote awareness of MAEAP and conduct tour or panel discussion for other farmers. 3. Identify mailing list of target landowners in highly critical agricultural watersheds.	Class 2	NA- varies depending on needed improvements, typically $1000-$10,000 Maintenance Costs: typically <$500/year	Level 2	NRCS Programs, Community Foundations, Private Landowners
			Mid term	4. Hold informational meeting and Phase 1 meeting (MAEAP required class) 5. Document 10 farms that complete the first phase of MAEAP verification (applicable checklists). 6. Document 5 new MAEAP verified farms.	Class 2		Level 2	
			Long term	7. Identify mailing list of target landowners in moderately critical agricultural watersheds. 8. Hold informational meeting and/or Phase 1 meeting (MAEAP required class). 9. Document 10 farms that complete the first phase of MAEAP verification (applicable checklists). 8. Document 5 new MAEAP verified farms.	Class 2		Level 2	

Appendix P: Implementation Schedule of Proposed Actions, Milestones, Costs and Funding Sources

Pollutant	Source/Cause (High and Mod Priority Only)	Management Measure	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
Nutrients *E.coli*	Agricultural Runoff/ Improper or overapplication of fertilizers/manure	Nutrient Management Plans Manure management plans	Short term	1. Work with local NRCS offices to estimate current adoption levels and areas of focus. 2. Create mailing list of row crop farmers in highly critical agricultural areas. 3. Distribute information on importance of nutrient/manure plans. 4. Hold two informational sessions for farmers with local experts.	Class 2	$20-30/ac Maintenance Costs: Low to Moderate, ~5% of original cost	Level 2	NRCS Programs, Private Landowners
			Mid term	5. Document development of 10 new plans. 7. Identify highly critical parcels. Hold one-on-one meetings. 8. Provide technical assistance to landowners to utilize government cost-share programs technical service providers.	Class 3		Level 3	
			Long term	9. Create mailing list of landowners in moderately critical agricultural areas. 10. Distribute information and promotional materials. 11. Provide technical assistance to landowners to utilize government cost-share programs and technical service providers. 12. Document development of 15 new plans.	Class 3		Level 3	
Nutrients Sediment Hydrology	Urban Residential Sources Wetland Loss	Wetland Protection Ordinance	Short term	1. Create inventory of current wetland protection ordinances in local units of government in the Macatawa Watershed. 2. Review and evaluate ordinances, identify needed improvements or revisions. 3. Present findings to local units of government.	Class 1	$8,000 per ordinance Maintenance Cost: Low, Periodic Updating, ~<$100/year	Level 1	EPA CARE grant (Community Action for a Renewed Environment)
			Mid term	4. Conduct workshop for local units of government on wetland protection. 5. Provide technical assistance and sample ordinances.	Class 2		Level 2	
			Long term	6. Work to implement 4 new/updated ordinances.	Class 3		Level 3	

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Pollutant	Source/Cause (High and Mod Priority Only)	Management Measure	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
Nutrients Sediment Temp *E.coli*	Urban Residential Sources Lack of riparian buffers	Increase Buffers	Short term	1. Create mailing list of riparian landowners in highly critical urban areas. 2. Identify parcels owned by local units of government, churches and businesses. 3.Distribute information on buffer importance geared at above landowners. 4. Hold two informational sessions for residential and other landowners.	Class 2	$300/acre Maintenance Costs: Low to moderate, mowing to occasional repair, ~$10/acre	Level 1	NRCS Programs Section 319 Grant Funds EPA GLRI Grant Funds Sustain Our Great Lakes grant funds Great Lakes Basin Program for Soil Erosion and Sediment Control funds Private landowners
			Mid term	5. Identify highly critical parcels. Hold one-on-one meetings. 6. Provide technical assistance to landowners to utilize government cost-share programs and conservation easements for buffers. 7. Document installation of 50% of needed buffers.	Class 2		Level 2	
			Long term	8. Create mailing list of landowners in moderately critical agricultural areas. 9. Identify parcels owned by local government, churches and businesses 10. Distribute information on buffer importance. 11. Provide technical assistance to landowners to utilize government cost-share programs and conservation easements for buffers. 12. Document installation of final 50% of needed buffers.	Class 2		Level 2	
		Riparian Overlays Zoning	Short term	1. Create inventory of current riparian protection ordinances in local units of government in the Macatawa Watershed. 2. Review and evaluate ordinances, identify needed improvements or revisions. 3. Present findings to local units of government.	Class 1	$8,000 perordinance Maintenance Cost: Low, Periodic Updating, ~<$100/year	Level 1	EPA CARE grant (Community Action for a Renewed Environment)
			Mid term	4. Conduct workshop for local units of government on riparian protection strategies. 5. Provide technical assistance and sample ordinances.	Class 2		Level 2	
			Long term	6. Work to implement 5 new/updated ordinances.	Class 3		Level 3	
Nutrients *E.coli*	Urban Residential Sources Improper Use and Overapplication of fertilizers	Lawn Care Seal of Approval	Short term	1. Hold training event for current Lawn Care Seal of Approval Companies. 2. Develop marketing strategy for increase awareness of Lawn Care Seal of Approval Program. 3. Conduct activities to evaluate current performance and awareness of Lawn Care Seal of Approval requirements and standards.	Class 1	NA	Level 1	Local units of government, MACC membership dues, community foundation, private landowners
			Mid term	4. Implement marketing strategy. Continue to hold trainings every other year for companies. 5. Document a 10% increase in business in Macatawa Watershed. 6. Expand approved companies by 20%.	Class 2		Level 1	
			Long term	7. Document a 10% increase in business in Macatawa Watershed.	Class 2		Level 1	

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Pollutant	Source/Cause (High and Mod Priority Only)	Management Measure	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
Nutrients Sediment Hydrology	Urban Residential Sources Poor Storm Water Management	Implementation of various BMPs	Short term	1. Create mailing list of landowners in highly critical urban areas. 2. Identify parcels owned by local units of government, churches and businesses. 3. Widespread distribute of information on important BMPs. 4. Hold five informational sessions for landowners and conduct one-on-one meetings with government, churches and businesses.	Class 2	Rain gardens ($1,000-$10,000 depending on size and conditions, $100-$300/year maint.) Conversion of turf grass ($500/acre, $100/acre maint.) Rain barrels ($85/barrel, <$5 barrel maint.) Porous pavement (highly variable depending on materials and site, ~1-3% of capital cost in maint.) Infiltration trench ($10/cubic ft, ~7% of capital cost in maint.) Tree Planting ($400/tree but depends on size, negligable maint cost)	Level 2	Section 319 Grant Funds EPA GLRI Grant Funds Sustain Our Great Lakes grant funds Great Lakes Basin Program for Soil Erosion and Sediment Control funds Private landowners
			Mid term	5. Identify highly critical parcels. Hold one-on-one meetings. 6. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 7. Document installation of 50% of needed BMPs. 8. Promote installations locally and generate awareness. 9. Conduct tour of locally installed BMP projects.	Class 3		Level 3	
			Long term	10. Create mailing list of landowners in moderately critical urban areas. 11. Identify parcels owned by local government, churches and businesses. 12. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 13. Document installation of final 50% of needed BMPs.	Class 4		Level 4	
Nutrients Sediment Hydrology	Urban Residential Sources Poor Storm Water Management	Storm Water ordinances	Short term	1. Create inventory of current storm water ordinances in local units of government in the Macatawa Watershed. 2. Review and evaluate ordinances, identify needed improvements or revisions. 3. Present findings to local units of government.	Class 1	$8,000 perordinance Maintenance Cost: Low, Periodic Updating, ~<$100/year	Level 1	EPA CARE grant (Community Action for a Renewed Environment), community foundations
			Mid term	4. Conduct workshop for local units of government on storm water ordinance strategies. 5. Provide technical assistance and sample ordinances.	Class 2		Level 2	
			Long term	6. Work to implement 5 new/updated ordinances.	Class 2		Level 3	
		Improved site plan review	Short term	1. Conduct interviews with local units of government. Document and understand site plan review process in each local unit of government containing a highly critical urban subwatershed.	Class 1	Varies widely	Level 2	Local units of government, MACC membership dues, community foundations
			Mid term	2. Develop recommendations to improve the process. Present to local unit of government. Provide LID manual to staff who conduct site plan reviews (SEMCOG 2008). 3. Coduct interviews with local units of government (containing moderately critical urban subwatersheds). Develop and present recommendations.	Class 1		Level 2	
			Long term	4. Document changes in site plan review practices.	Class 1		Level 2	

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Pollutant	Source/Cause (High and Mod Priority Only)	Management Measure	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
Sediment Hydrology Temp	Urban Stormwater/ Impervious Surfaces, Storm Drains	Implementation of various BMPs	Short term	1. Create mailing list of landowners in highly critical urban areas. 2. Identify parcels owned by local units of government, churches and businesses. 3. Widespread distribute of information on important BMPs. 4. Hold five informational sessions for landowners and conduct one-on-one meetings with government, churches and businesses.	Class 1	Rain gardens ($1,000-$10,000 depending on size and conditions) Conversion of turf grass ($500/acre) Rain barrels ($85/barrel) Porous pavement (highly variable depending on materials and site) Infiltration trench ($10/cubic ft) Tree Planting ($400/tree but depends on size) see above for maintenance costs	Level 1	EPA Smart Growth Implementation Grants, EPA Urban Waters Small Grants Program, EPA GLRI funds, MDEQ Section 319 grant funds, Great Lakes Basin Program for Soil Erosion and Sediment Control funds
			Mid term	5. Identify highly critical parcels. Hold one-on-one meetings. 6. Provide technical assistance to landowners to plan for implementation. 7. Document installation of 50% of needed BMPs. 8. Promote installations locally and generate awareness. 9. Conduct tour of locally installed BMP projects.	Class 2		Level 3	
			Long term	10. Create mailing list of landowners in moderately critical urban areas. 11. Identify parcels owned by local government, churches and businesses. 12. Provide technical assistance to landowners to plan for implementation. 13. Document installation of final 50% of needed BMPs.	Class 2		Level 3	
		Street Sweeping Catch Basin Cleaning	Short term	1. Document current level and frequency of cleaning activities. 2. Compare cleaning plans to critical urban and agricultural areas. 3. Make recommendations to local units of government on improvements to cleaning programs.	Class 1	$100/hr for labor (not including purchasing heavy equipment) Maintenance Costs: High, ~$500-$1000/year	Level 1	Local units of government, community foundations
			Mid term	4. Identify obstacles to implementing recommendations. 5. Work to overcome obstacles to increase level and frequency of cleaning activities.	Class 1		Level 1	
			Long term	6. Document changes made to cleaning programs. 7. Document an increase in cleaning efforts in critical urban and agricultural areas.	Class 1		Level 1	
Sediment	Streambanks/ Erosion (loss of vegetation and logjams)	Implementation of various BMPs	Short term	1. Create mailing list of riparian landowners in highly critical urban and agricultural areas. 2. Identify parcels owned by local units of government, churches and businesses. 3. Widespread distribute of information streambank stabilization and maintenance of logjams.	Class 2	Streambank stabilization ($40-$100/ft, low maintenance cost) Log jam removal ($1,000-$5,000, negligible maintenance cost) Road Stream Crossing repair ($400/ft for culverts, $2,000/ft bridges, ~1% maintenance cost)	Level 1	EPA GLRI funds, MDEQ Section 319 grant funds, Federal Transportation Enhancement Funds, Great Lakes Basin Program for Soil Erosion and Sediment Control funds, NOAA Great Lakes Habitat Restoration Program, Great Lakes Basin Fish Habitat Partnership Grants, County Road Commissions, local units of governement
			Mid term	4. Hold one-on-one meetings with interested landowners. 5. Provide technical assistance to landowners to plan for implementation and pursue grant funding. 6. Document installation of 50% of needed BMPs. 7. Promote installations locally and generate awareness. 8. Conduct tour of locally installed BMP projects.	Class 3		Level 2	
			Long term	9. Create mailing list of landowners in moderately critical urban areas. 10. Identify parcels owned by local government, churches and businesses. 11. Provide technical assistance to landowners to plan for implementation. 12. Document installation of final 50% of needed BMPs.	Class 4		Level 3/4	

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Goal 1: Restore Water Quality								
Sediment	Streambanks/ Erosion (loss of vegetation and logjams)	Revised maintenance procedures at county drains	Short term	1. Document current process and methods for cleaning of county drains. 2. Prepare documentation of before and after case studies. 3. Convene meeting of county drain commissioners to address any problems.	Class 1	NA	Level 1	Great Lakes Basin Program for Soil Erosion and Sediment Control funds, Sustain Our Great Lakes, community foundations
			Mid term	4. Develop recommendations for revisions to drain maintenance procedures. 5. Conduct two case study projects utilizing alternative drain maintenance procedures. 6. Document results and create awareness of the projects. 7. Secure commitments from county drain office to revise and update drain maintenance procedures.	Class 3		Level 3	
			Long term	8. Document formal changes in drain maintenance procedures.	Class 1		Level 1	
Sediment Hydrology	Road Stream Crossings/ Improper design, alignment or maintenance	Repair of problem road stream crossings	Short term	1. Provide Road Stream Crossing Study to county road commissions and city/township departments. 2. Determine if any identified road stream crossings have current plans for repair. 3. Document 25% of needed repairs.	Class 1	Road Stream Crossing repair ($400/ft for culverts, $2,000/ft bridges, ~1% maintenance cost) Road Stream Crossing Survey 400 hrs ($12,000, no maintenance cost)	Level 1/2	Great Lakes Basin Program for Soil Erosion and Sediment Control funds, Federal Transportation Enhancement Funds, Sustain Our Great Lakes
			Mid term	6. Identify obstacles to conducting repairs. 7. Pursue planning and grant funding for repairing road stream crossings. 8. Document 35% of needed repairs. 9. Conduct another Road Stream Crossing Survey.	Class 1		Level 2/3	
			Long term	10. Provide updates road stream crossing survey to county road commissions and city/township departments. 11. Document remaining 40% of needed repairs.	Class 1		Level 2/3	
Hydrology Temp	Agricultural Runoff/ Drain tiles and artificial drainage	Implementation of various BMPs	Short term	1. Create mailing list of landowners in highly critical agricultural areas. 2. Identify parcels that are drained. 3. Widespread distribute of information on important BMPs. 4. Hold five informational sessions for landowners.	Class 2	Drainage Water Management ($3/acre covered, $100/yr maint.) Gypsum Amendments $50/ton (2-3 tons per acre, as needed) Two Stage Ditch ($10-$12/ft, <$100/yr maint.)	Level 2	Great Lakes Basin Program for Soil Erosion and Sediment Control funds, NRCS Conservation Innovation Grants, Sustain Our Great Lakes grants
			Mid term	5. Identify highly critical parcels. Hold one-on-one meetings. 6. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 7. Document installation of 50% of needed BMPs. 8. Promote installations locally and generate awareness. 9. Conduct tour of locally installed BMP projects.	Class 3		Level 3	
			Long term	10. Create mailing list of landowners in moderately critical agricultural areas. 11. Identify parcels that are drained. 12. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 13. Document installation of final 50% of needed BMPs.	Class 4		Level 4	

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Pollutant	Source/Cause (High and Mod Priority Only)	Mgt Measure	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Construction Costs (unit cost of BMP)	Technical Assistance	Potential Funding
Goal 1: Restore Water Quality								
E.coli	Agricultural Runoff/ Manure Applications	Implementation of various BMPs	Short term	1. Create mailing list of landowners in highly critical agricultural areas. 2. Identify parcels owned by local units of government and private residents. 3. Widespread distribute of information on important BMPs. 4. Hold five informational sessions for landowners.	Class 3	Buffer Strips ($300/acre, $10/acre maint.) Cover Crops ($35/acre, same maint. cost) Drainage Water Management ($3/acre covered, $100/yr maint.)	Level 2	NRCS Programs Section 319 Grant Funds EPA GLRI Grant Funds Sustain Our Great Lakes grant funds Great Lakes Basin Program for Soil Erosion and Sediment Control funds Private landowners
			Mid term	5. Identify highly critical parcels. Hold one-on-one meetings. 6. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 7. Document installation of 50% of needed BMPs. 8. Promote installations locally and generate awareness. 9. Conduct tour of locally installed BMP projects.	Class 3		Level 3	
			Long term	10. Create mailing list of landowners in moderately critical agricultural areas. 11. Identify parcels owned by local government and private residents. 12. Provide technical assistance to landowners to utilize government cost-share programs and plan for implementation. 13. Document installation of final 50% of needed BMPs.	Class 3		Level 3	
E.coli	Agricultural Runoff/ Biofilms in drain tiles	UNKNOWN, Further study required	Short term	1. Document any available information in the scientific literature. 2. Continue to support partners (Hope College and ODC-MG) in further study of this issue.	Class 3	Applicable BMPs are unknown at this time	Level 3	Community foundations, NRCS Conservation Innovation Grants, Universities, EPA CARE grant (Community Action for a Renewed Environment), EPA GLRI funds, private donors
			Mid term	3. Confirm or disprove source/cause. 4. Identify possible remediation actions to address cause/source.	Class 3		Level 3	
			Long term	5. Implement remediation activities.	Class 4		Level 4	
E.coli	Urban/Residential Runoff/ Biofilms in drain tiles	UNKNOWN, Further study required	Short term	1. Document any available information in the scientific literature. 2. Continue to support partners (Hope College and ODC-MG) in further study of this issue.	Class 3	Applicable BMPs are unknown at this time	Level 3	
			Mid term	3. Confirm or disprove source/cause. 4. Identify possible remediation actions to address cause/source.	Class 3		Level 3	
			Long term	5. Implement remediation activities.	Class 4		Level 4	

Appendix P: Implementation Schedule of Proposed Actions, Milestones, Costs and Funding Sources

Goal 2: Protect Remaining Natural Areas						
Objective	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Costs (not including land costs)	Technical Assistance	Potential Funding
2A: Provide Conservation Priority Map to appropriate stakeholders to target Tier 1 areas for protection opportunities.	Short term	1. Identify appropriate stakeholders. 2. Host informational meeting and distribute copies of the Conservation Priority Map.	Class 2	25 hrs ($750)	Level 1	Local units of government, MACC membership dues, community foundation, Coastal and Estuarine Land Acquisition Funding Opportunities through the Michigan Coastal Management Program, EPA CARE grant (Community Action for a Renewed Environment)
	Long term	3. Update the Conservation Priority Map and reconvene stakeholders.	Class 4	$5,000	Level 4	
2B: Work with local units of government to integrate recommendations from the Conservation Priority Map into master plans.	Short term	1. Create inventory of current protection measures in municipal plans. 2. Determine what percentage of Tier 1 areas are protected by current measures.	Class 1	80 hrs ($2400)	Level 2	
	Mid term	3. Make recommendations to local units of government about using master plans to protect important natural areas. (Focus on local units of government that have the most natural land designated as Tier 1)	Class 2	80 hrs ($2400)	Level 2	
	Long term	4. Document protection measures in master plans.	Class 1	80 hrs ($2400)	Level 1	
2C: Work with private landowners to implement conservation easements to protect high quality natural areas.	Short term	1. Develop mailing list of landowners in areas designated as Tier 1 and Tier 2. 2. Distribute information on managing and protecting privately owned natural lands	Class 1	40 hrs ($1200)	Level 1	
	Mid term	3. Hold informational session for target landowners to create awareness for protection opportunities and strategies.	Class 2	40 hrs ($1200)	Level 2	
	Long term	4. Document protection efforts and amount of Tier 1 and Tier 2 land permanantly protected.	Class 1	80 hrs ($2400)	Level 1	
2D: Identify unique and valuable protection sites that are not reflected in the Tier 1 locations identified in the Conservation Priority Map.	Short term	1. Identify appropriate stakeholders. 2. Host informational meeting and distribute copies of the Conservation Priority Map.	Class 1	25 hrs ($750)	Level 1	
	Mid term	3. Take comments from stakeholders and conduct field inventories to identify unique areas that have not been included on the conservation priority map.	Class 3	40 hrs ($1200)	Level 2	
	Long term	4. Update and redistribute the Conservation Priority Map and reconvene stakeholders.	Class 4	$5000	Level 3	

Appendix P: Implementation Schedule of Proposed Actions, Milestones, Costs and Funding Sources

Goal 3: Enhance the watershed						
Objective	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Costs	Technical Assistance	Potential Funding
3A: Develop a committee of appropriate stakeholders to address enhancement concerns.	Short term	1. Identify appropriate stakeholders. 2. Host informational meeting and consider developing an Enhancement Committee.	Class 1/2	25 hrs ($750)	Level 1	Local units of government, MACC membership dues, community foundation, EPA CARE grant (Community Action for a Renewed Environment)
	Mid term	3. Enhancement Committee develops an action plan and prioritizes enhancement actions.	Class 1	160 hrs ($1800)	Level 1	
	Long term	4. Enhancement Committee implements action plan.	Class 1	80 hrs annually ($2400)	Level 2/3	
3B: Enhance opportunities for recreational uses of Lake Macatawa and its tributaries.	Short term	1. Document and inventory current level of recreational use (type and location). 2. Conduct resident/tourist survey to gauge level of needs and interest.	Class 2	80 hrs ($2400) $10,000 survey	Level 2	Michigan Economic Development Corporation Community Assistance Team Grants, National Park Service (Rivers, Trails and Conservation Assistance Program, Urban Park and Recreation Recovery Grants)
	Mid term	3. Prioritize actions for enhancing recreational uses. 4. Develop action plan.	Class 1	100 hrs ($3000)	Level 2	
	Long term	5. Document actions taken to enhance recreational uses of Lake Macatawa and the Macatawa River.	Class 1	80 hrs ($2400)	Level 2/3	
3C: Increase public access to Lake Macatawa and its tributaries.	Short term	1. Document and inventory current public access locations and amenities (lake and river). 2. Conduct resident/tourist survey or field inventory to gauge level and locations of public access needs.	Class 1/2	40 hrs ($1200) 10,000 survey	Level 2	National Park Service grants, Coastal and Estuarine Land Acquisition Funding Opportunities through the Michigan Coastal Management Program, National Park Service (Rivers, Trails and Conservation Assistance Program)
	Mid term	3. Prioritize actions for increasing public access. 4. Develop action plan.	Class 1	80 hrs ($2400)	Level 2	
	Long term	5. Create awareness of public access locations. 6. Document actions taken to increase public access to Lake Macatawa and the Macatawa River.	Class 1	40 hrs ($1200)	Level 2/3	
3D: Enhance, protect and/or restore important areas of fish and wildlife habitat.	Short term	1. Document and inventory current locations of important fish and wildlife habitat. 2. Access current condition and threats including impacts from invasive species.	Class 3	240 hrs ($7200) $15,000 in depth field surveys	Level 3	USFWS grants, Ducks Unlimited, EPA GLRI grants, Great Lakes Commission Monitoring Grants, Great Lakes Basin Program for Soil Erosion and Sediment Control funds, Coastal and Estuarine Land Acquisition Funding Opportunities through the Michigan Coastal Management Program, NOAA Great Lakes Habitat Restoration Program, Great Lakes Basin
	Mid term	3. Work with local experts and appropriate stakeholders to indentify locations or species that should be prioritized. 4. Develop action plan.	Class 4	$15,000	Level 3	
	Long term	5. Document actions taken to enhance, protect or restore fish and wildlife habitat in the Macatawa Watershed.	Class 1	80 hrs ($2400)	Level 3/4	

Appendix P: Implementation Schedule of Proposed Actions, Milestones, Costs and Funding Sources

Goal 3: Enhance the watershed						
Objective	Schedule	Interim Milestones	Estimated Planning Costs	Estimated Costs	Technical Assistance	Potential Funding
3E: Preserve and protect remaining open space within the watershed (including prime farmland).	Short term	1. Identify appropriate stakeholders and host informational meeting or conduct one-on-one meetings. 2. Distribute the Farmland Protection Map.	Class 1	25 hrs ($750) plus 25 hrs annually ($750)	Level 1	Local Units of Government, community foundation, EPA CARE grant (Community Action for a Renewed Environment), Michigan Economic Development Corporation Community Assistance Team Grants
	Mid term	4. Create inventory of current open space protection actions in the Macatawa Watershed. 5. Identify local units of government that could enhance open space/farmland protection strategies.	Class 1	$100 hrs ($3000)	Level 1	
	Long term	6. Document actions taken to protect open land and/or prime farmland in the Macatawa Watershed.	Class 1	$40 hrs ($750)	Level 1/2	

1 Short term: 1-3 years
Mid term: 4-6 years
Long term: 7- 10 plus years