

Paw Paw River Watershed Planning Project Project Description

A. Statement of Water Quality Concerns/Issues

The Paw Paw River flows westward through Kalamazoo, Van Buren, and Berrien Counties in southwestern Lower Michigan before joining the St. Joseph River and emptying into Lake Michigan in the Benton Harbor area. The eastern portion of the river is divided into three branches: the North Branch, South Branch, and East Branch. Significant tributaries that empty into the Paw Paw River include Brandywine Creek, Brush Creek, Mill Creek, Blue Creek, and Ox Creek. The full length of the Paw Paw River (and all its branches) is approximately 174 kilometers (125 km in Van Buren County). The Paw Paw River Watershed (PPRW) encompasses approximately 275,000 acres. By far, the largest portion of the watershed lies in Van Buren County, with approximately 200,000 acres. Towns located along the Paw Paw River include Paw Paw, Lawrence, Hartford, Watervliet, Coloma, and Benton Harbor. There are a total of 9 cities/villages and 28 townships in Berrien and Van Buren Counties within the PPRW.

Prior to European settlement in the early-to mid-1800s, much of the region was forested. Beech-sugar maple forests were dominant, and oak-hickory forests, mixed hardwood swamps, mixed conifer swamps, white pine-mixed hardwood forests and black ash swamps were all represented. There were openings in the forest as well, consisting primarily of mixed oak savanna and open wetlands.

The topography in this part of Michigan consists of rolling hills and flat lake plains, and has been highly influenced by human activities. Many of the natural plant and animal communities have been either changed or eliminated from their pre-settlement state as a result of human activities. The river corridor has become fragmented by agricultural practices, as well as residential and commercial development. However, despite these competing land uses, significant portions of the native plant and animal communities remain and contain a variety of rare species including Mitchell's Satyr butterflies, spotted turtles, Eastern Box turtles, Massasauga rattlesnakes, Brook Trout, and Prothonotary Warblers.

Land use within the PPRW is 6.3% urban, 59% agriculture, 20% forested and 15% water/wetlands. There has been an estimated 51% (38,000 acres) loss of wetlands in Van Buren County.

Overall the water quality of the PPRW is good. However, a few problems do exist in the watershed. Because of the better water quality and the intact habitats protecting the water quality, the PPRW has been designated as a high priority watershed for preservation in the St. Joseph River Watershed Management Plan (2005). The Plan predicts development pressure to be the most severe in Van Buren County in forested areas compared to all other counties in the watershed. Most of this development pressure will occur in the most sensitive areas of the watershed threatening current high quality surface waters, such as the headwaters of the East Branch, along the new US 31 corridor (where Blue Creek and several fens are located) and near Benton Harbor where Great Lakes coastal marsh exists. As a result, the St. Joseph River Plan prioritized Van Buren County for land use planning related to preservation. Agricultural lands and natural habitats have preserved the water quality of the river system. But as growth and development increase, water quality will be impacted if wetlands and floodplains are not protected and if best management practices and low impact development techniques are not utilized. To accomplish water quality protection, local units of government will need to

direct development to more suitable areas through techniques like the adoption of land use planning and zoning techniques. Further, privately owned lands will be crucial to the effectiveness of protecting land and water quality in the PPRW. Conservation organizations can only afford to buy a relatively small area, and tools such as conservation easements, land donations, and management agreements will be important for those lands that cannot be purchased.

As mentioned, there are a few existing water quality problems in the watershed. According to interviews done for the St. Joseph River Watershed Project, soil erosion was not noted as being a major concern where row crops and grapes are grown. Row crops are managed with no-till and minimum till techniques. Cover crops are typically planted in vineyards around grapes, so that sandy soils are not exposed. However, sedimentation is considered a real concern in some regions of the watershed. Brush Creek is a designated trout stream threatened by sedimentation. Coldwater fisheries are considered impaired throughout the mouth segment. A conflict between lake residents and agricultural producers exists in which agricultural lands are viewed as the source of sediments and other pollutants impacting lakes. Particularly, Maple Lake in the Village of Paw Paw is dredged frequently due to sedimentation. The South Branch of the Paw Paw River was dammed to create this manmade lake. The reduction in stream velocity at that lake causes natural sediments to drop out of the water column. The lake residents believe that agricultural land uses are responsible for the required dredging. The Lawton Drain and South Branch of the Paw Paw River were listed on the 2000 303(d) list for impairments to aquatic biota. They were removed from the 2002 list due to being dredged and “no longer appropriate to list for biota”. It was noted that all designated drains are being removed from the 303(d) list, as they are not expected to be managed to provide habitat. It was noted that the South Branch of the Paw Paw River is more modified and channelized than the other waters of the PPRW.

There are some concerns with livestock access to streams. Although the regulations protecting water quality have changed, some of the producers have not changed their practices. More education on BMPs and livestock management is needed. Further, a CAFO has been located recently in the PPRW and there is much public concern about the impacts of this facility on water quality.

The Main Branch of the Paw Paw River was noted as having good-forested buffers. However, the tributaries lack sufficient riparian buffers. An additional concern in the jurisdiction is the number of individual septic systems around lakes. Maple Lake in Paw Paw is one of the few with sanitary sewers. In the past, the lakes were surrounded by small cottages and septic systems designed to meet the summer occupancy of those cottages. However, construction of large homes is occurring in the place of the cottages. The lake associations around Lawton and the southern region of Van Buren County are interested in constructing sewer systems. However, the northern region of the County is not pursuing sewer systems. It is also suspected that there are septic systems leaking in the Blue Creek fen area.

B. Project Goals and Objectives

The following goals and objectives will help to ensure improved and protected water quality in the PPRW. Since this project aims to preempt greater impairments, the cost to prevent water quality impairments is predictably less than the costs to restore water quality. The proposed project goals compliments and furthers the St. Joseph River Watershed’s Management Plan as explained in the current water quality section of this proposal. Several of the work plan tasks in this proposal will implement specific goals of the St. Joseph Watershed Management Plan.

Goal One: Develop a watershed management plan for the Paw Paw River Watershed to ensure its continued status as a preservation watershed and to improve existing water quality problems. *Objectives:* An inventory of the watershed will be completed, providing a baseline in the future. Existing data will be collected and summarized. Critical areas will be designated and sites will be prioritized for protection and improvement. Criteria for determining load reductions will be developed and other evaluation and monitoring strategies will be developed to ensure that water quality improvement and protection goals are being met.

Goal Two: Ensure public participation and local buy-in of the management plan. *Objectives:* The planning process will be led by the SWMC with input from the steering committee, project partners, and the public. There will be four community workshops to gain public input. There will be at least 16 steering committee meetings and additional sub-committee meetings. Volunteers will be utilized to assist in the watershed inventory.

Goal Three: Limit impacts to water quality from new development. *Objectives:* Promote compatible development and low impact development (LID) techniques. Evaluate current plans and ordinances on their effectiveness of protecting water quality and promoting LID. Educate local officials on the techniques available to protect water quality through municipal summits and an LID Newsletter. The LID Newsletter will highlight local examples in Allegan, Berrien, Cass, and Van Buren Counties.

Goal Four: Increase the general public's awareness of watershed issues. *Objectives:* Work with youth to put storm drain markers in at least five municipalities in the watershed. Include all work products and materials on the SWMC website. Partner with VBCD to host a watershed workshop series (3/year).

Goal Five: Educate and build the capacity of the steering committee, watershed residents, and local officials. *Objectives:* Provide scholarships or coupons to local officials to take the on-line MSU watershed course for local officials. The local official must agree to give 30 hours of volunteer time to watershed activities in return. Conduct the Watershed Management Short Course in Van Buren County (offer the Certified Watershed Steward option that requires 30 hours of volunteer time).

Goal Six: Increase the amount of protected/restored lands in areas where development or agricultural activities would or are severely degrade water quality (forested floodplains, headwaters, etc.). *Objectives:* A land conservation committee will work to develop criteria to identify conservation/wetland restoration lands to ensure public support of protection/restoration efforts. TNC and SWMLC will target and contact landowners in areas where land preservation/restoration efforts will result in long term protection of water resources.

Goal Seven: Provide effective project management and grant administration for the PPRW Planning Project. *Objectives:* Provide leadership to the steering committee and project partners to ensure grant activities are conducted within the grant time period. Complete and submit accurate reports and high quality products on time to MDEQ.

C. Organizational Information

The Southwestern Michigan Commission is the regional planning organization for Berrien, Cass, and Van Buren Counties. Our mission is to promote a high quality of life through the facilitation of sound planning and decision-making. We are dedicated to planning that is credible,

credentialed, and connected. Senior Planner Marcy Colclough has been with the SWMC for 3 ¼ years. She holds a Master of Environmental Science degree and has been instrumental in projects involving watershed planning throughout her professional career. Her experience includes writing the Dowagiac River Watershed Management Plan, SWMC watershed education/outreach for the Galien River Watershed, and writing the successful Black River Heritage Trail and Boardwalk grant for Bangor. John Egelhaaf is the executive director of the SWMC. He is a certified planner with the American Institute of Certified Planners and holds a Master's in Landscape Architecture. Under his direction, the SWMC is dedicated to projects that restore and celebrate the region's natural resources. In addition, a part-time Watershed Coordinator will be hired. SWMC has not received MDEQ grants in the past.

D. Partners and Related Funding

Van Buren Conservation District (VBCD) – Participating on steering committee, conducting 4 public meetings to gain public input on plan, recruiting/coordinating volunteers for inventory work, and leading development of the I/E component of the plan. (The Paw Paw and Black River Projects will collaborate, with the VBCD holding 3 watershed workshops/year and assisting with 4 municipal summits.)

Black River Watershed Project (VBCD) – Collaborating on I/E activities (4 municipal summits, short course, LID News, storm drain marking, MSU on-line scholarships, 3 watershed workshops/year).

St. Joseph River Conservation District – Participating on steering committee, the training and supervising volunteers for inventory work.

The Nature Conservancy – Participating on steering committee, conducting an agricultural inventory, mapping target preservation areas, developing landowner contact lists, conducting 6 landowner visits per year (12 total) and participating in short course.

Southwest Michigan Land Conservancy – To partner with TNC and Sarett Nature Center in protecting lands. Develop a land conservation committee of volunteers to provide guidance for land protection efforts, assist in defining criteria for mapping potential conservation lands and assist in outreach to identified target areas. SWMLC will visit at least 5 landowners a year (10 total) to discuss land protection options.

Engineering Firm – Providing technical support to the plan development process and attending steering committee meetings.

Sarett Nature Center – Participating on steering committee, providing volunteers for inventory work.

Van Buren ISD – Providing meeting space and AV equipment.

Pokagon Band of Potawatomi – Participating on steering committee and inventorying 1300 acres they own in the watershed.

Watervliet City and Township, Coloma City and Township, Hartford City, Benton and Hagar Townships, Coloma-Watervliet Area Economic Development Corporation – Participating on steering committee.

Van Buren MSUE – Supporting and helping with Watershed Management Short Course. Berrien and Van Buren County Planning Departments-Providing GIS layers when needed.

MDEQ – Providing technical and grant administration assistance.

Gun and Galien River Watershed Projects – Funding of LID Newsletter in their respective 319 grants, contribution of success stories for newsletter.

Potential future partners will include MDNR Fisheries, Friends of the St. Joseph River, schools, Paw Paw and Maple Lake Associations, Van Buren Sportsman Club and West Michigan Trout Unlimited, drain commissioners, additional municipalities, and road commissions.

Other Funding The City of Watervliet has received a grant from the Great Lakes Basin Soil Erosion & Sedimentation Control Program to install a porous pavement parking lot and educational signs about urban stormwater management. There is also funding to host a tour of the site and a workshop in 2005.

E. Project Sustainability

Some steps to ensure project sustainability will include the development of a management plan that will assist in coordinating resources (time and money) and prioritizing projects. Further, the I/E Plan will be developed in cooperation with the Black River Watershed I/E Plan to ensure continued cooperation between the watersheds and to capitalize on efficiencies of scale. Lands protected by PDR and conservation easements will preserve the natural resources and water quality in the watershed in perpetuity. The project will build the capacity of steering committee members by providing educational, training, and volunteer opportunities to encourage continued involvement in watershed activities after grant funding ceases. The communities along Red Arrow highway will continue to be interested in protecting their greatest asset – the Paw Paw River. The key will be to begin implementing institutional changes in these municipalities to protect water quality coincident with new development. Finally, all project information will be on SWMC's website including an interactive mapping system which will be developed by LIAA (Land Information Access Association) for SWMC's website. This interactive site will also allow others (such as steering committee members) to continue to make updates to the site after the grant project is completed. There is also the potential to host and maintain the entire set of St. Joseph River Watershed maps that were developed as part of their planning process on this website also.

F. Evaluation

Success will be defined by the creation and approval of a plan that meets EPA's 9 elements, incorporates public input, has public acceptance, and a political will to be implemented. Success will also be defined by the ability to build the capacity of local stakeholders to implement the watershed plan's recommendations. Further, many of the I/E activities in this proposal will help to meet the goals and objectives of the St. Joseph River Watershed Management Plan. The evaluation results will be disseminated to, and used by, the partners and steering committee to re-assess the needs in the watershed and the effectiveness of the project's activities. If portions of the project are determined to be unsuccessful, partners and steering committee members can redirect the project and planning process as needed.

- The number of volunteers involved in the inventory portion of the project will be one measure of success. The watershed inventory will provide a baseline of information to be utilized for further evaluation of water quality and problem sites (VBCD, STJRCD, and TNC).
- The number of municipalities willing to update plans and ordinances to better protect water quality.
- The number of landowners interested in land protection.

- The number of acres of new lands preserved (TNC and SWMLC).
- The number of watershed residents and municipal officials attending educational programs.
- The number of repeat participants (those completing the entire series of workshops).
- The number of municipalities promoting LID techniques.
- The number of developments utilizing LID techniques.
- During the watershed planning process additional measures of success for the PPRW will be developed. These will include specific water quality improvement and protection measures. Project partners will be heavily involved in this process.

G. Project Summary

The Paw Paw River Watershed is over 275,000 acres in size. The land use is predominantly agricultural (59%) and only 6% urban. This watershed is prioritized in the St. Joseph River Watershed Management Plan as a priority for preservation because of the overall high quality of the water and natural habitats combined with the anticipated rapid development pressure. A watershed management plan will be developed for this watershed to ensure the status of high water quality is maintained. This project aims to preempt greater impairments by focusing on promoting preservation, compatible development, and LID (low impact development) techniques. This project builds on years of interest and work by participating partners and stakeholders.

Paw Paw River Watershed Planning Project Work Plan

Task	Task Description	Products	Responsible Agency/ Person (Grant or Local funds)	Time - SWMC
A	Grant Administration and Close Out			13%
A1	Develop and submit quarterly status reports following ESSD guidance. Reports will be submitted within 30 days of the end of each quarter.	8 total reports (2 copies of each, one for the Project Administrator and one for the Financial Analyst)	SWMC – WC, TM (grant and local)	
A2	Provide draft and final products and deliverables, including any data collected in both hard copy and electronic format. A minimum of 5 hard copies and one electronic copy of all final products and deliverables will be submitted to MDEQ.	Drafts and 5 hard copies of final products and an electronic copy	SWMC –WC (grant)	
A3	Develop and submit a draft report following ESSD guidance at least 45 days prior to the end of the project. Incorporate DEQ comments and submit final report within 30 days of the end of the grant.	1 draft report and 1 final report (5 copies and 1 electronic copy)	SWMC – WC (grant)	
A4	Submit a release of claims statement on letterhead with the final report.	1 letter	SWMC –WC (grant)	
A5	Submit in both hard copy and electronic format a draft and final project fact sheet utilizing the ESSD template. The draft project fact sheet is due 30 days prior to the end of the project. The final project fact sheet will be submitted with the final report.	1 fact sheet (5 hard copies and electronic format)	SWMC – WC (grant)	
A6	Coordinate, oversee and be involved in work of contractors	Quality work of contractors	SWMC – WC (grant)	
B	Develop Watershed Management Plan			61%
B1	Update and expand stakeholder list	Database and e-mail distribution list of stakeholders	SWMC –WC, TM (local)	
B2	Develop steering and subcommittees for plan development	Steering Committee with diverse make-up	SWMC-WC, MC (grant)	
B3	Conduct 4 public meetings throughout the watershed to gain public input and involvement in watershed plan development	4 workshops and a report of results from each workshop, press clippings	VBCD (grant and local)	
B4	Hold 8 steering and sub-committee meetings/year	16 agendas and minutes	SWMC –WC, MC (grant)	
B5	Identify current water quality impairments and potential future water quality impacts due to land use change in entire Paw Paw watershed	Section in plan on impairments and future impacts due to land use change	SWMC – MC, WC (grant)	
B6	Inventory agricultural impacts in	Inventory report and	TNC (local)	

	headwaters and main stem	pictures		
B7	Recruit and train volunteers to conduct an inventory of sources of pollutants in the entire watershed.	Inventory and pictures of problem areas. Trained volunteers	VBCD SJRCD (grant)	
B8	Obtain and include information from DEQ on road stream crossing evaluation.	Section of draft plan	SWMC – WC (grant)	
B9	Incorporate St. Joseph River Watershed Plan's evaluation of future land use based on current trends and the potential water quantity/quality impacts in the entire PPRW.	Section of draft plan	SWMC – WC (grant)	
B10	Refine current load estimates using existing estimates in St. Joseph Plan and new inventory results. Calculate potential load reductions with bmp implementation.	Refined current load estimates and potential load reductions	Kieser & Associates (grant)	
B11	Develop a citizens committee to establish criteria to create a map of conservation/wetland restoration lands for proposed protection/restoration and develop landowner database	Map of Proposed Conservation Lands and landowner database	TNC (local) and SWMLC (grant)	
B12	Define and map critical areas	Map of critical areas	SWMC – MC, WC (grant), TNC (local), Kieser & Associates (grant)	
B13	Prioritize pollutants, sources, causes and sites	Section of draft plan	Kieser & Associates (grant)	
B14	Determine desired uses, designated uses, goals and objectives (draft and review by steering committee)	Section of draft plan	SWMC – WC,MC (grant)	
B15	Identify and analyze capacity of existing programs and projects	Section of draft plan	SWMC – MC, WC (grant)	
B16	Identify structural and non-structural BMPs	Section of draft plan	Kieser & Associates (grant)	
B17	Analyze current master plans and zoning ordinances of 5 watershed municipalities (chosen by level of interest and participation in project)	Report with review of 5 municipalities' Master Plans and Zoning Ordinances	SWMC – MC, WC, JE (grant)	
B18	Develop an information/education component for the plan in cooperation with the Black River Watershed Project	Section of draft plan	VBCD (grant)	
B19	Estimate costs and assistance needed to implement plan	Section of draft plan	Kieser & Associates (grant)	
B20	Prioritize and develop a timeline for proposed BMPs with measurable milestones	Section of draft plan	Kieser & Associates (grant)	
B21	Develop criteria to determine whether loading reductions are being achieved	Section of draft plan	Kieser & Associates (grant)	
B22	Develop monitoring and evaluation processes to evaluate effectiveness of implementation efforts	Section of draft plan	Kieser & Associates (grant)	

B23 B23	Write, review draft plan, submit to MDEQ for review	Draft Plan	SWMC-MC,WC (grant)	
B24	Solicit comments, write final plan (include 9 elements), submit to MDEQ for review	Final Plan	SWMC-MC,WC (grant)	
C	Education/Outreach Landowner Campaign			2%
C1	Contact and visit landowners about conservation options (TNC – 6/yr, SWMLC – 5/yr)	22 educated landowners and leads for land protection	SWMLC and TNC (local)	
C2	Host on-going watershed workshop series (agricultural bmps, septic systems, etc.)	3/year – 6 total workshops	VBCD (local)	
D	Education/Outreach Municipal Campaign			12%
D1	Develop potential techniques for planning and zoning. Meet with 5 municipalities to discuss potential changes to master plan and zoning ordinance (based on task B17)	Report of suggested techniques. Meeting reports from each meeting.	SWMC- MC (grant)	
D2	Hold 4 municipal summits with two topics (for each topic – one will be held during the day and a repeat will be held in the evening) <ul style="list-style-type: none"> 1. planning and zoning techniques for water quality protection 2. LID techniques for new development and retrofitting old developments 	4 workshops, press clippings	SWMC –MC VBCD (Black River Watershed) (grant and local)	
D3	Produce and distribute 6 issues of LID News to educate local officials about Low Impact Development (include special spotlights on local examples)	6 issues of LID News	SWMC –MC (in partnership with Black, Galien and Gun River Watersheds) (grant and local)	
D4	Promote and provide 5 scholarships for MSU's on-line watershed course for local officials in return for 30hrs volunteer watershed-related service	5 scholarships – 5 educated officials	SWMC – WC (grant and local)	
E	General Outreach/Education			12%
E1	Host all PPRW materials and products on SWMC website. Also input all inventory and data collected into a GIS and provide interactive mapping capabilities on SWMC website.	Interactive Website with mapping capabilities	SWMC – WC (grant and local)	
E2	Watershed Management Short Course (5 sessions and bus tour) in cooperation with Black River Watershed	5 watershed education sessions, plus a bus tour – 30 educated watershed residents	SWMC-MC, WC VBCD (BRW) (grant and local)	
E3	Storm Drain Marking in at least 5 municipalities	Educated youth - 700 marked storm drains	SWMC-WC in cooperation with BRW (grant and local)	

SWMC - Southwestern Michigan Commission BRW – Black River Watershed TM- Terri Moore JE – John Egelhaaf MC – Marcy Colclough WC- Watershed Coordinator, Amy Seitz TNC – The Nature Conservancy