

Hurricane Creek

Watershed-based Plan

Executive Summary



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Pictured on cover: Herrin Old Lake (City of Herrin), Hurricane Creek, and USGS
Topographic Map, Herrin, IL Quadrangle (1968)

Executive Summary

Beginning in 2015, the Greater Egypt Regional Planning and Development Commission (Greater Egypt) was contracted by the Illinois Environmental Protection Agency (IEPA) to develop a watershed-based plan for the Hurricane Creek Watershed (071401060705) under Clean Water Act Section 604(b) funding.

Two waterbodies in the watershed have been placed on the Environmental Protection Agency's (EPA) 303(d) List of Impaired Waters. This list is comprised of waterbodies that do not meet water quality standards. In particular, Hurricane Creek (IL_NF-01) has been placed on the list because of problems with lindane, sedimentation and siltation as seen in Figure 1. Herrin Old Lake (IL_RNZZ) exhibits many other impairments including: mercury, polychlorinated biphenyls (PCBs), total suspended solids (TSS), phosphorus and algae.

Impaired designated uses of Herrin Old Lake are aesthetic quality and fish consumption. Hurricane Creek exhibits an impaired designated use of aquatic life. These impairments of designations are caused by the previously mentioned pollutants.

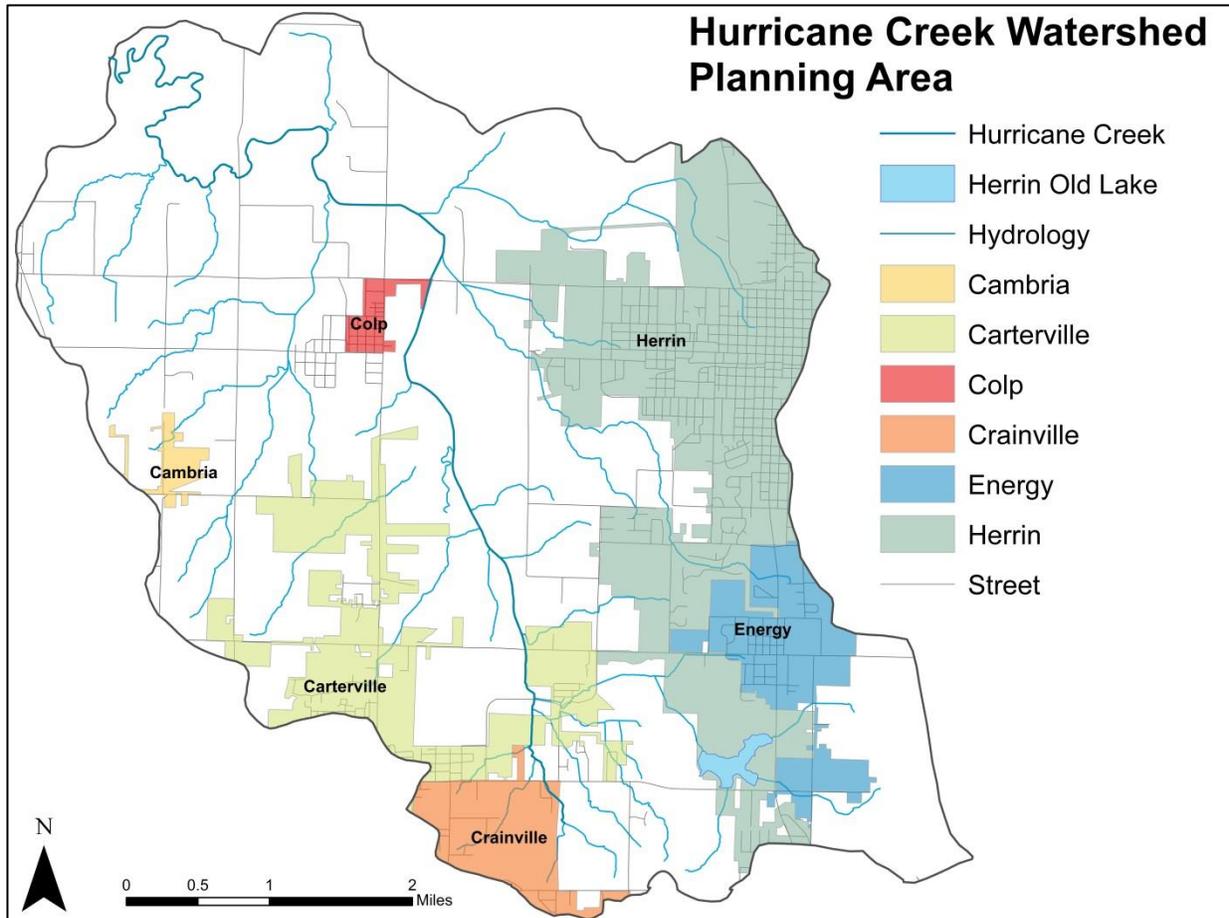
An initial stakeholder meeting was held in 2015 to gain awareness of planning efforts and to garner membership for the Hurricane Creek Watershed Council. The council usually met monthly and provided guidance throughout the plan. This included discussing existing knowledge of the watershed and suggesting BMPs for the plan. The continuation of Council activities will move forward following plan adoption. This includes overseeing implementation of the plan and monitoring progress.

The Hurricane Creek watershed encompasses 16,590 acres, or 26 square miles and is located entirely in Williamson County, Illinois. It is part of the larger Big Muddy River watershed. Six cities and villages make up the relatively small population of the watershed. The City of Herrin being the most populated, contributes the most urban runoff in the watershed.

Land use in the watershed is fairly balanced among agriculture, forested areas, and development. Agriculture in the watershed is composed of 21.8 percent of pasture and hay and 13 percent of cultivated crops. Woodland and grassland

comprise 29.3 and 2.3 percent of the watershed. The remaining land uses in the watershed are developed land (28.7 percent), wetlands (2.6 percent), and water (1.9 percent). With 34.8 percent of the watershed being classified as agriculture, there is a high potential for erosion. This is especially true for the areas of cropland that run along the Hurricane Creek

Figure 1- Hurricane Creek Watershed Planning Area



While impervious surfaces in the watershed are rather low, the City of Herrin constitutes a large portion of the watershed’s impervious network. The watershed exhibits around four percent of imperviousness (50 percent or more impervious surface).

The Spreadsheet Tool for Estimating Pollutant Loads (STEPL) and the Region 5 Model were utilized to generate existing pollutant loads for the Hurricane Creek watershed and its sub-watersheds. While the program produces general

estimates, the baseline data was generated from multiple factors including: land use, climatic indicators, agriculture, septic rates, urban runoff, and streambank/shoreline impairments. Estimated pollutant loads are influenced heavily by urban areas and agriculture (see Table 1).

Table 1- Existing Pollutant Loads

Source	N Load (lb/yr)	Percent of Total Load	P Load (lb/yr)	Percent of Total Load	Sediment Load (tons/yr)	Percent of Total Load
Urban	42879.22	28.92%	6628.33	24.11%	984.24	6.23%
Cropland	30825.17	20.79%	8977.75	32.66%	5656.27	35.81%
Pastureland	44021.10	29.69%	5380.93	19.58%	2096.12	13.27%
Forest & Grassland	2548.54	1.72%	1198.67	4.36%	205.43	1.30%
Groundwater	16125.60	10.88%	728.70	2.65%	0.00	0.00%
Streambank/Shoreline	10052.71	6.78%	3870.29	14.08%	6283.00	39.78%
Other	1823.11	1.23%	701.90	2.55%	569.72	3.61%
Total	148275.45		27486.57		15794.78	

Pollutant load reduction targets were also generated for the major pollutants. A reduction of nitrogen at 15 percent, phosphorus at 40 percent, and sediment reduction of 45 percent were calculated for the plan. Target goals are consistent with the recommended best management practices (BMP) suggested in the plan.

BMPs were suggested in regards to two major impairments in the watershed: urban runoff and agricultural practices. While the plan addresses watershed-wide impairments, site-specific BMPs have also been established to manage agricultural pollutants and urban runoff.

These management efforts confront the impairments of Hurricane Creek (sedimentation/siltation) and Herrin Reservoir (phosphorus, TSS). Some of the measures include: streambank and shoreline stabilization, agricultural and vegetated filter strips, and grassed waterways. They have also been categorized by priority based on feasibility, cost, and pollutant load reductions.

The plan incorporates the nine minimum elements of any watershed-based plan. These elements include: a characterization of the watershed through a resource inventory and assessment to identify nonpoint source pollution, identification of

BMPs to address those pollutants, identifying funding and technical assistance, an educational component, and a monitoring and evaluation component to track progress and monitor accomplishments.

Funding will mainly come through EPA 319 grants. Most of the BMPs in the plan can receive funding through these grants that are focused on reducing nonpoint source pollution.

Outreach and education of watershed-related activities are important in promoting awareness of the plan and progression of plan implementation. Some of the components of outreach include holding public meetings, distributing flyers on stormwater management, and hosting litter cleanup days around the watershed.

Implementation of the plan is divided into three phases. Phase I represents the first two years of the plan where most educational and outreach component are implemented along with selecting site-specific BMPs for grant funding. Phase II will require the watershed council to continue submitting grants and starting implementation of BMPs. Phase III represents the last four years of the planning period in which BMP implementation will continue and evaluating the plan will commence.

Interim measurable milestones, water quality benchmarks, and a monitoring component have also been established to track progress and evaluate the success of the plan. Table 2 represents the water quality benchmarks in the plan which focuses on nitrogen, phosphorus, and sediment.

Table 2- Water Quality Benchmarks

Benchmark Period	Benchmark Reduction Target					
	Nitrogen (percent)	Nitrogen (lbs/ yr)	Phosphorus (percent)	Phosphorus (lbs/yr)	Sediment (percent)	Sediment (tons/yr)
2 Year (Phase I)	-	-	-	-	-	-
6 Year (Phase II)	6	8897	20	5497	20	3159
10 Year (Phase III)	15	22241	40	10995	45	7108

The monitoring component of the plan features programs offered by IEPA and the Illinois Division of Natural Resources (IDNR). The Volunteer Lake Monitoring Program (VLMP) and the Ambient Lake Monitoring Program (ALMP) are both ways in which water quality can be tested. Results will be analyzed by the watershed action committee to determine success of BMP implementation and the plan itself.



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