

CASE STUDY 1: UPPER/MIDDLE CUYAHOGA RIVER WATERSHED, OHIO

The Cuyahoga River is tributary to Lake Erie. The Cuyahoga River watershed suffers from impaired water quality problems with nutrient enrichment and sediment, derived from point sources and its agricultural lands. The watershed also has major potable water supply problems. The water quality problems are often exacerbated by low flow conditions in the river.

Potable water supply is greatly diminished and in short supply in many inland communities and is prompting development of new and deeper aquifer tapping wells. This has prompted new pipelines to draw off Lake Erie (e.g. Medina County, OH). In addition, large ground water recharge areas (in gravel and sand formations) are being developed, leading to declining of recharge potential to support the baseflow of the river and riverine wetlands. Significant development proposals loom that in the northern sector (~2000 acres) of the City of Streetsboro. This sector alone could add 5-8 thousand homes in the next 10-15 years, aggravating the existing impacts and continuing to kill rather than grow water through storm sewerage and increased impervious land covers.

Water supply reservoirs such as Lake Rockwell, located on the main stem of the Cuyahoga River, have filled in with sediments, and the owners are engaged in various strategies to increase their access to potable supplies. Significant litigation is occurring over the “ownership” rights of the reservoir. The term “water wars” would sum up the current state of affairs. Downstream communities have sued over this “right” and requested access to the water surface for recreation. They have also requested an additional release through the Lake Rockwell dam of 4-5 MGD to maintain downstream in-stream flows.

Growing water opportunities

- ?? A private landowner with 300 acres adjacent to Lake Rockwell who has wetland mitigation banking opportunities on his land, and also owns one of the highest yield private producing commercial water wells in the County is interested in a growing water transaction. The landowner wishes to protect ground water recharge areas while developing a new town center development with greenway connections to the Lake Rockwell area, along the Cuyahoga River, to the rest of the community. A stormwater treatment train will be used as the basis for stormwater quality, volume and rate management to increase ground water recharge and to create an integral open space system in the northern sector of the community slated for growth.
- ?? The client is able and willing to finance these efforts personally in combination with low/no interest loans (state Clean Water and State Revolving Fund) from the Ohio Environmental Protection Agency (OEPA). OEPA has already reviewed proposals and feels compelled to participate in this overall program since the Streetsboro area is the fastest growing Cleveland Metro community and only a few years remain to accomplish this protection
- ?? Members of this proposal’s project team have met with most of the large aggregate producers about conservation planning their lands, and designing reclamation programs to favor ground water infiltration and recharge to restore river baseflows.
- ?? A three-county (Cuyahoga, Portage, and Summit) park district consortium wishes to protect land, protect the river, protect recharge areas, and establish an alternative revenue source above the scarce diminished park budgets for accomplishing the above objectives.

Growing water benefits of the proposals

1. Produce Natural Flow Regime and Ground Water Recharge Benefits:

Establish a more natural flow regime and reduce frequency, severity and perhaps flooding propensity at the same time by buying easements and fee title acquisition of water rights in abandoned mine pit lakes, buying development rights to preclude or limit development in recharge lands around the pits, and in other morainal and valley train gravel deposits.

2. Produce Wetland credits to stem wetland functional losses in River Basin:

- ?? A total of ~ 25 acres of wetland credit is anticipated to be made available in the market place by restoring land in the landowner’s property along the Cuyahoga River.

?? Wetland mitigation banking or off-site projects in the Streetsboro area and larger region will be accomplished by partnering with conservation groups and the three county park district consortium.

3. Cleanse water of excessive nutrients and assist Cuyahoga River in meeting TMDL levels.

?? The Restoration of wetlands at the mitigation banks, and removal and cleansing of water from tributary streams to the Cuyahoga River in biofilters, created and restored in mined lands, will be used to improve water quality in the upper Cuyahoga river.

?? The removal of water from these highly volatile tributaries will also provide water to the main stem river at a more biologically appropriate rate to enhance stability, contribute to an improvement in water quality, and create a tradable, nutrient improvement credit basis.

4. Potable Water Supply Program Elements.

?? The private landowner will start a private Potable water utility and use a percentage of revenues to protect and restore offsite recharge lands. OEPA funds will be likely used for financing the utility and its infrastructure, and also for wellhead and ground water recharge protection.

?? The private landowner will purchase development rights, fee title, conservation easements, or water rights around several adjacent mine pit lakes to protect these areas,

?? The private landowner will provide an additional 5-10 million gallons of surface water to be directed daily to the instream flows above Lake Rockwell and request the owner of the reservoir to release an additional 5 MGD to downstream instream flows.

?? The private landowner will negotiate with the Lake Rockwell manager to cease logging and mining of old-growth forest and critical wetlands around Lake Rockwell as a part of the expansion of the surface water resources of the Lake to offset sediment deposit volumes and commensurate water volume losses in the Lake.

5. Funding for Stewardship, extended land protection, additional ground water protection needs in region, and funding regional planning for the same.

?? 0.5% of 1%, as a surcharge, will be levied against all money derived through sales from the Stormwater utility, potable water utility, wetland banking, water diversion to maintain baseflow, nutrient trading, and new homes in the northern sector of Streetsboro. The surcharge will be paid into an environmental stewardship fund administered by a private operating foundation to be established by the partners. Eighty percent of the annual earned interest against the value of the principle in the fund shall be used explicitly for funding this program. Twenty percent of the interest annually shall accrue to the principle.

?? The Endowment fund shall be allowed to grow until the value of the principle is 10% greater than the amount of money needed to annually generate the percent interest to accomplish the stewardship needs agreed to by the partners under the program.

Partners

Private landowner, Streetsboro, OH; LeFarge Aggregates, Streetsboro, OH; OEPA; Ohio Department of Natural Resources; Portage County Parks; Cuyahoga County Parks; Summit County Parks; City of Streetsboro; Municipal water utility; Conservation groups.