A project funded in part by local communities! To see if your community is involved please check **www.gvsu.edu/wri/isc/lowgrand**

The Grand River Beacon!

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Lower Grand River Watershed Project Update:

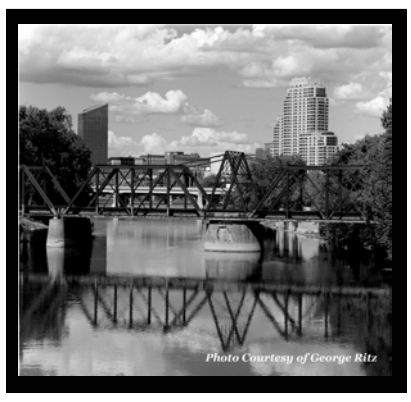
Andy Bowman, Grand Valley Metro Council

The Lower Grand River Watershed is called a "project" but it is really much more that that. Public officials and civic leaders throughout our region have long seen the need for a "watershed-based" look at the way we grow and how that affects the waters we drink, use, and enjoy. With the support of an United States Environmental Protection Agency 319 grant administered by the Michigan Department of Environmental Quality, Grand Valley Metro Council responded to that regional desire and set about assembling the Lower Grand River Watershed Project.

This project has many working parts to handle the widest possible range of involvement from local officials, technicians, engineers, civic leaders, environmental stewards, land owners, and others. Hopefully you too may consider joining up. Project groups are currently studying ways to implement physical improvements, lessening the negative effects of rural and urban living on our water resources, and getting information out to residents who want to play a more active role in the process.

Due to the size of the Lower Grand River Watershed, (from near Lansing to Lake Michigan), much of the current effort is aimed at organizing and building both awareness and expectations for future years. However, it was also important to get some of the real work done, so several "watershed management plan" products are being drawn up as demonstrations in the watershed. These include the rural subwatershed of Sand Creek and several urban subwatersheds like the Millennium Watershed, Buck Creek, and the "City Grand Watershed", (several urban watershed areas around the Grand Rapids area). This important work has included water quality sampling, habitat analysis, storm water drain identification, and mapping of boundaries and unique features.

All of these efforts are part of what we have come to call the Lower Grand River Watershed "project". But what it really adds up to is studying, thinking about, and planning for the long range quality of not only our river, but its tributaries, the lakes and groundwater they feed, and the properties they border. The success of this project will really be a success for all the hundreds of thousands of people living in our watershed. Consider for a moment the tremendous impact if even a fraction of our watershed population got involved in this project and performed his or hers small part. This is the true vision of our Grand River Watershed and we hope you will be among the fraction who makes a difference.



Help make a difference in the Grand River Watershed by joining us, contact the project through our web site at www.gvsu.edu/wri/isc/lowgrand

Did You Know?

- ***There are 30 species of fish found in the Grand River.***
- ***The percentage of poor drinking water sources has dropped from 30% in 1961 to less then 5% today.***
- ***The entire Grand River is 256 miles long.***

What you and your family can gain from this issue!

If I Had A Million…

Dan Wolz, City of Wyoming, Clean Water Plant

Just how much is a million? We use the term lightly. Moms say "If I've told you once, I've told you a million times…". We tend to exaggerate to "millions" when we see many of something, especially if it enhances our salesmanship of an idea. To the technical person, however, it is a way of gauging pollution threats to you and/or what you eat or drink.

It isn't too hard to understand 1,000. If we multiply 1,000 x 1,000 we have 1,000,000. One million times 1,000 is a billion, and 1,000 times that is a trillion.

TIME

If we were to count forward a billion seconds from the passage of the Clean Water Act on October 18, 1972, we wouldn't reach 1 billion until July 1, 2004. Now if we go back a trillion seconds from the July date it would take us back 318 centuries. It boggles the mind!

MONEY

For every million pennies we have another $10,000. If old Ebenezer Scrooge was missing one penny from $10,000,000 of his riches, it would be one in a billion pennies. The 1.34 million people represented by the 17 contributing communities in the Lower Grand Watershed project paid half the money to conduct this work. The State of Michigan paid for the other half. This averages $.24 per person ($.48 if our communities had to foot the whole bill). How much did the project cost? You should be able to calculate this.

WATER QUALITY

Many times we express water quality in terms of parts per million, or parts per billion, or now even parts per trillion. When we say "parts per…." we mean the parts of a substance per parts of water. While it takes 7 lbs of pure chlorine (as a gas) to raise an Olympic size pool full of water to one part per million that water could not be discharged directly into the Grand River because even one part per million is poisonous to some river life. The river could only tolerate that swimming pool water with a maximum .3 lb of pure chlorine added. Therefore, some water must be "de-chlorinated" before it enters the river in order to meet the standard.

WATER FLOW

If you put 2.5 gallons of Grand River water in a bucket to store the fish you catch, that amount of water would be one billionth of the average daily water flow in the Grand. If you spread your beach towel (15 square feet) to sit on while you fish, your towel would cover one tenth of a billionth of the area of the Grand River watershed which is 5,572 square miles.

Just think, with over a million residents in the Lower Grand River watershed, if everyone puts forth an effort there could be millions of water quality improvements!

Did you know that there are 358,900,000,000,000,000,000 gallons of water in the world.

The Grand River Beacon!

Why are the creeks warming up?

Rainfall on streets, parking lots, and roofs quickly warms, sometimes even "steaming" on the surfaces.

Storm water once soaked into the ground and reached streams as cool groundwater. Now, storm water typically flows quickly along surface drainage to creeks, never cooling in the ground.

The tree canopy over many creeks has been removed, allowing the hot summer sun to warm the water and creek bed.

What can a homeowner do? One simple task is to install rain gardens which direct the rain on your roof into a garden where the water soaks into the ground. The rain gardens look great and help the watershed! (See www.raingardens.org.)

What can a business owner do? Instead of expensive curbs, inlets, and pipes for your parking lot drainage, install "bio-retention" systems. These systems collect rainfall from your parking lot in vegetated swales allowing the water to soak into the ground. (See the articles in the category Stormwater Management Practices, www.stormwatercenter.net.)

As a Land Developer, What's in the Watershed for Me?

Tom Williams, PE

In my decision-making process for residential development of a parcel in the Lower Grand River Watershed, I am primarily concerned about two business aspects: net profit and absorption.

Absorption is basically how fast my development sells out. If the investors' money (and my money) is tied up for years in lots that do not sell, all the great features of the development do not mean much. The land plan for the development must focus on the current market demand in the vicinity of the development.

"Protecting the watershed is not a contrary goal with profitable land development."

Net profit seems self-explanatory. I want to maximize revenue minus costs. This is rarely accomplished by maximizing lots. Squeezing in more lots usually decreases the value of each lot plus increases the infrastructure costs (the cost of roads, gutters, storm sewer pipe, inlets, and so forth), resulting in lower net profit.

Okay, okay. What does the watershed have to do with these two business aspects? Let me list three relations followed by three common obstacles.

Absorption rates increase when the natural features on a property are preserved and enhanced. The fastest selling rural developments could be classified as conservancy design projects. Streams, wetlands, and trees are preserved. Natural buffers are enhanced along the waterways, becoming part of the common area within the development. Trails and observation areas help create the transect from housing to nature.

Lot values increase when natural features are included in a development. Selling prices can increase significantly, more than 10%, when lots back to permanently preserved natural areas such as streams (with stream side vegetation), naturalized detention areas, or wetlands.

Infrastructure costs typically decrease when best management practices for storm water management are used. Especially in areas with sandy soil, infiltration design can significantly reduce the cost of storm sewer construction. (Remember, higher lot values and lower infrastructure costs equal higher net profit.)

There are obstacles! You may even be a developer who has attempted to implement a conservancy design project but ended up frustrated by the approval process.

One obstacle is found in some zoning regulations. The intent of large lot zoning is to preserve rural character. The result is seldom rural preservation. A two-acre home site still removes two acres from agricultural production. Larger lot sizes increase the infrastructure costs between the houses. The result is not just "sprawl." The result is unsustainable sprawl. The preferable development is one that clusters the homes together on smaller lots, reducing the area of pavement in the development, while leaving the rest of the development for natural buffers, wooded areas, and greenspace. The obstacle is that clustering homes on smaller lots and preserving greenspace actually violates zoning regulations in a number of townships.

"I want to maximize revenue minus costs. This is rarely accomplished by maximizing lots."

Design standards for roadways and drainage can also be an obstacle.

Allow me to illustrate with an actual case. The development site in West Michigan had very sandy soils. Percolation tests were conducted showing that storm water for any events under the five-year storm would infiltrate, recharging the groundwater. The recommended design sized the storm sewer system for the overflow above the five-year storm, saving a significant amount of expense per lot. However, this design was not in accordance with the drainage standards (even though the intent of the standards would have been accomplished), and the design was rejected. Standards need to allow for implementation of best management practices (BMPs) that benefit the watershed and the developer.

A third obstacle can be your engineering firm. The temptation is to select based on lowest price as though all engineering services were the same. Note that a savings of $200 per lot in engineering can quickly be lost when their design costs $2000 per lot more to build! Make sure the firm you select has a verifiable track record for financial analysis (to maximize net profit, not just the number of lots), conservancy design, and best management practices for storm water management.

Protecting the watershed is not a contrary goal with profitable land development. The practices that increase absorption rate, increase lot values, and decrease costs can be the same practices that protect the watershed, increase water quality, and increase the quality of life for the residents.

"I remember when I was rowing down the Grand River in March, 2003, with the Michigan State University Crew Team for the Grand River Regatta, oh it was so cold" – Alison Gould

I Remember When…

Wellington F. Homminga

In 1934 it was a favorite thing of mine to walk 3 miles from my home at 115 Washington Blvd. (now known as Wadsworth) to the bridge over 44th St. (then known as Sunnyside) to go fishing (in Buck Creek). I carried a ball of string and some hooks in my pocket along with several sinkers. After digging for worms with a large spoon, I would strip down to my swimming trunks and start fishing for the elusive SUCKER. I found that it was always better to wade upstream and cast against the flow and let the bait flow towards me.

The only problem was that for every SUCKER that was caught I always caught a lot of shiners. These were too small and they were returned to the stream. One day, as I was fishing, a man on the bank was watching me with a great deal of interest.

He asked me a question- " Why are you throwing those fish back? "

I replied, "They are nothing but SHINERS. I am fishing for SUCKERS."

"Those are not SHINERS," he replied, "they are BROOK TROUT."

Oh, for the good old days when streams ran cold and fresh.

If you have memories of your life experiences with the Lower Grand River Watershed that you would like to share, email them to :
matzkea@gvsu.edu