Does your community need increased funding for stormwater issues? What is this nationwide craze called a Stormwater Utility (SWU)? How long does it take to set up a SWU? Below are some answers, but also consider attending a day-long IAFSM seminar to be held on November 28, 2006 in Lisle to answer more of your questions. Four Illinois public works directors and others are coming to talk about their Illinois stormwater utilities.

**Funding for Stormwater Management**

Many Public Works Departments are not keeping up with the infrastructure demands of their communities, especially for stormwater expenses. The effects of community growth and aging infrastructure aggravate conditions causing more flooding and polluting rivers and lakes. Many communities are not spending monies for routine maintenance or for improving their stormwater facilities. Recently the American Society of Civil Engineers (ASCE) rated the infrastructure of America a “D” and in Illinois the grade is just as low. ASCE’s low grade strongly implies that more funding is needed to maintain and rebuild existing roadways and drainage facilities.

Historically, the “bad penny” has been spent from a community’s budget for stormwater improvements. Flood protection and dam safety improvements are always postponed, and in dry years “out-of-sight, out-of-mind” creating false sense of security. Every 20 years it seems major cities experience severe flooding. Better planning and maintenance can reduce this cycle of disasters. In their summer 2006 publication, the Chicago Wilderness Group gave environmental report card grades for: Wetlands=D+, streams=C-, fish=D+, lakes=C and reptiles and amphibians=C-. Clearly we have a systemic failure of stormwater management across Illinois.

Getting additional stormwater funding is tough. Illinois property taxes and income taxes are already “draining” us all. It is important that any governmental funding increase is fair and that each resident sees a tangible benefit. Long ago, colonists revolted over unfair taxes without representation. Today, most people are willing to protect lakes and streams from becoming degraded or harmfully toxic. A recent survey in Milwaukee determined that most residents would be willing to pay $50-$75 per year for lake and stream restoration projects.
Residents in communities that have SWU programs typically pay $30-$40 per year for stormwater related improvements that span from individual projects to various floodplain management issues. This fee equates to about 10-cents a day— or “Buddy can you spare a daily dime?”.

More buildings and pavement increase runoff volumes, in turn causing more widespread structural flooding. A recent restudy of the Des Plaines River has shown an increase in the flood elevation by three feet through 52 communities along 66 miles west of Chicago. The three feet can be attributed to 40 years of additional pavement, the loss of wetlands and the straightening of the river’s natural bends. Compare the Des Plaines and other Chicagoland waterways to the 1950s and you will see significant meandering (bending) of the rivers and much larger areas of natural wetlands. Today, new development runoff more efficiently gets to the low-lying residential properties that never before flooded. Near O’Hare airport, floods in 1986 and 1987 awoke the Illinois Department of Natural Resources to require storage mitigation for new construction. Several counties now require mitigated floodplain storage across Illinois for new construction. There are still many urban areas in Illinois in need of more floodplain storage.

Typically residents expect the government to protect them from floods. However residents do not understand how runoff is affected by their own actions. Stormwater interactions are complex. For example in the mid 1980s in Florida a property owner built a 100 foot long berm along a creek. A thunderstorm made the creek flow quickly under-cutting a big tree and it fell into the creek. The tree totally blocked the creek enough to flood and block automobile passage along the heavily traveled Interstate Road I-4 for nearly 12 hours. A seemingly slight change with the construction of this berm caused a catastrophic event that stream maintenance and a permit program may have prevented. Stormwater utilities provide that permitting and maintenance expertise.

Fixing flooding problems is expensive. A community has many funding options including: bonds, property taxes and Impact fees; however, these approaches tend to be reactionary to a particular flood or for only small site-specific fix. A long-term watershed approach is needed. Farm communities have drainage districts, which in many ways are similar to SWU programs. In about 600 major communities across the United States stormwater utilities are employing experts to plan and maintain their stormwater waterway systems. A recent survey of adjacent states to Illinois tabulates about 110 SWU programs. Presently Illinois has about eight active SWU programs. The number of Illinois SWUs should double within the next few years.

**What is a Stormwater Utility?**

A stormwater utility is a funding approach based on a public utility-like process that is designed to protect a community from water related disasters. Paying for stormwater expenses must be divided in a fair manner. Many stormwater utility fees are generally set by the amount of imperviousness on each resident’s property. The amount of imperviousness (pavement, roof-top, sidewalks) on each property increases runoff volume and peak storm flows in the rivers, and lakes - as compared to natural pervious areas (before man built there). The SWU approach says that everyone is a part of the runoff problem—as each rainfall drop-by-drop collects “downstream”. If you discharge into the public drainage system you support its maintenance and design. Each resident should pay their equal share proportional to the amount of runoff they “burden” the system. The large mall on the hill should pay more than a single-family property owner for stormwater system costs. If no runoff occurs on a site, no fee should be charged. Stormwater fees should not be charged by the value of the property.
From a recent national survey preliminary results taken by the University of West Kentucky, single family resident fees are averaging about $3.85 per month for 2800 SF of pavement called an ERU (Equivalent Residential Unit). Commercial properties pay by the ERU ratio of their amount of imperviousness. Given twice the pavement of an ERU, then the property owner pays twice the fee. Nowadays, powerful GIS systems can accurately estimate each property owner’s impervious area. Remote sensing images with infrared aerial photographs (can differentiate imperviousness by heat) using GIS can overlay the property lines to these infrared images to define impervious areas for each property. If you are considering re-flying your community ask for an infrared image to be added to the other contracted mapping images. It’s fairly inexpensive to include to the overall cost.

In Illinois, there is a strong legal distinction between a tax and a utility fee. This was formed from a 2005 lawsuit in the City of Rock Island initiated by 12 churches against the City’s new SWU program. The City, making a legal distinction between a fee and a tax, won this lawsuit. In Illinois, a fee is not a tax and now a fee is legally defined in Illinois as 1) fairly assessed, 2) used for regulatory issues and 3) is voluntary. A community masterplan defines the needs of the community’s stormwater utility. Maintenance, regulatory and limited capital expenses are outlined. A confusing aspect of a fee definition is that the fee is voluntary. In a legal sense there is no consideration for how expensive it is to remove rainfall runoff. Residents can be exempt from paying their monthly stormwater utility if they (for instance) vacuum up all the runoff from their property.

A Credit Manual is drafted (for the SWU) to allow residents fee monthly reductions. This manual is a document that outlines practical steps that will allow the resident to lessen their monthly fee. These reductions can be for building a rain garden or a detention pond to hold runoff from their property not allowing it to enter public areas. Schools can get credit by teaching classes on rainfall stewardship. Churches can look into ways to reduce their parking lot runoff to reduce their monthly fees. These steps make your SWU voluntary and the Credit Manual must be carefully drafted.

**Two Active Illinois Stormwater Utilities**
Recent interviews with the public works directors of Rock Island and Bloomington show some of the challenges and rewards of their respective SWU programs.

**City of Rock Island**
The City of Rock Island was not keeping up with their stormwater demands and other nearby cities had successfully started SWUs especially in Iowa. Bob Hawes the director of Public Works in Rock Island spent two years educating his City Council the benefits of these utilities. After that, Bob spent three months giving presentations to groups such as the Kiwanis Club and other affected groups. A Citizen’s Advisory group was set up to discuss all funding options and to define the stormwater needs of the City. A nationwide firm AMEC advised Bob on the SWU setup process. In his presentations to the residents, Bob compared all the sum of water, sewer and stormwater resident’s monthly utility costs of adjacent cities (Moline, East Moline, Bettendorf and Davenport) to show that even if a SWU were started in Rock Island, the overall costs to each resident was less than the adjacent city’s monthly costs. The City’s 40,000 residents are charged $3.51 per month per ERU with a total revenue realized at $1.3 million per year.

An unusual aspect of their Credit Manual included a section for residents to build a rain-garden on their property for water quality benefits. The City would pay each resident $4 per square foot to install, yet the resident has to maintain the rain-garden for five years.
In 2004 shortly after starting the SWU, 12 churches objected to the fee and brought a lawsuit against the City alleging that the City was taxing the churches. This precedent setting challenge was struck down as the legal distinction was made between a utility fee and a tax in Illinois. More details on the case are available at http://www.iml.org/dbs/imllegal/dyncat.cfm?catid=940. From this case law, the City has been given legal authority to keep the stormwater fees in place. This SWU funding is used to maintain levees, add an extra staff member and fund several significant stormwater projects.

City of Bloomington

Kurt Haas has been tasked with managing the City of Bloomington Storm Water Program, including the Storm Water Utility and Erosion/Sediment Control Programs. The main purpose behind the creation of the Storm Water Utility was to help the City fund the mandates set forth in Phase 2 of the Clean Water Act. Kurt believes that the Illinois EPA is moving into an inspection and policing role so he feels that being erosion proactive is in the best interest of the City.

The Utility has been used to help homeowners with basement flooded with sewage due to surcharged sewers, separate one combined sewer and eliminate its associated overflow, and to fund public education and outreach projects. The Utility does not assess storm water fees against farmland. The fee is based upon a minimum of 2% impervious area within a given parcel, then is assessed at $1.45 per 1,000 square feet of impervious area.

The former Public Works Director left a list of resident drainage complaints from which Kurt entered into a GIS to discover that the complaints were scattered evenly throughout the City and not just in one area. He began to meet with these property owners and now is in the process of responding to their concerns. This action spoke well towards listening to the needs of residents and has generated support for the new Stormwater Utility.

To be fair to everyone, all Bloomington property owners are equally charged by the SWU, including the City itself. All city-owned impervious areas such as roadways and buildings are charged and the City has to pay into the Utility fund. The City actually collects more than they spend each year to provide for an emergency fund. This emergency fund has already been used on a significant emergency dam repair last year.

It is emphasized that the managers of the Bloomington Utility take all resident comments seriously. Since Haas carefully listens to his residents and thus is better able to serve their stormwater needs.

Starting a New Stormwater Utility

Overview

It takes a year or more to successfully define and educate key players in the SWU process. A SWU is based on setting a fair price for planning and maintaining very complex issues relating to the environment and perceived growth. This is not a 10 minute task. Below are three main categories of approaches needed to set up a stormwater utility: define, educate and enlist.

Define Community Needs

Consider drafting a Stormwater Masterplan as an internal guidance document. This has generally about five categories of discussion including:
1) Operations and Maintenance with street sweeping, detention pond mowing, creek debris removal and erosion BMP installations,
2) Modeling Stormwater Quantity to define flooding areas with hydrologic and hydraulic models calibrated and constructed,
3) Modeling Stormwater Quality as various waterway parameters of phosphorus, nitrogen, fecal coliform, sediment, petroleum contamination,
4) Inventory of the Stormwater Facilities as the number of inlets, channel miles, street miles,
5) Public Outreach Approaches such as web pages, media clips and flyers.

**Educate Residents**
Gather about a dozen major stakeholders in the community to discuss various different funding options available for stormwater related issues. In a brainstorming type of monthly meetings choose from many different needs of the community. Find out and define available federal and state loans, matching funding and grants. If you Google “Feasibility Study Stormwater” you will soon find downloadable reports from other communities. Levels of service can be refined and discussed at these meetings.

After drafting an internal stakeholder report, discuss the results with interested residents by way of several monthly public meetings. Collect comments and open a dialog with the remaining residents so they become part of the process. Some initial meetings are very spirited, and not all comments are to be considered. Some initial resident frustrations are answered after they better understanding the overall program.

Simple themes help to clarify the SWU mission. Some memorable mission themes include: “Everyone’s in the Watershed”, “Clean Water is just Good Business”, “Out Water, Our Future, Ours to Protect”, “Think Clean Water”, “My Watershed - My Choice”, “Silt Happens” or “A River Runs Through Us”. These all are actual themes used across the country to increase SWU program awareness. Keep your chosen theme front-and-center for residents to consider. Sounds expensive, but successful SWU communities typically spend about $1 per person per year in advertising their SWU programs.

**Enlist Public Support**
It is essential to remain in the public’s eye after the SWU is running and this can be done several ways. Consider starting an annual Public Works Day, complete with hot dogs and refreshments. On this day teach kids how necessary maintenance procedures are needed to keep conveyance paths clear. There are many public notice media advertisements such as the rubber ducky media clip. Many media clips are on the web. After web searching you can contact agencies and they may allow for your community to copy and “voice-over” sections to change the message for your needs.

Try improving your community stormwater web page to inform about major stormwater issues. informing residents of what simple things they can do to help the environment. Web-search for the Center for Watershed Protection for their USSR watershed pollutant characterization program manuals. There are hundreds of web page examples to consider.

The usual web segments include FAQs of the SWU, credit manual download, upcoming workshops from local environmental groups on a variety of clean-up issues. Groups such as The Conservation Foundation or Chicago Wilderness have very knowledgeable staff very capable of helping the outreach portion of your SWU. The Chicago Wilderness group has listings of many Illinois watershed (river-based) citizen action organizations, some of which can provide useful ecological training to residents.

**Conclusions and Links**
A Public Works director or Village Trustee must NOT stand up in front of his council or board members and before the media and make a "personal declaration" that a stormwater fee will be assessed. Take a year or more to use the media and the web to build a consensus for the need to better fund stormwater expenses. Consider enlisting wilderness groups to educate your residents and political allies for the needs of better stormwater management. Let them realize the benefits of such an approach. Add a few web pages to define the needs of your community and mail out flyers along with the normal monthly billing information defining the needs for more funding.

Here are some links and heavy reading; this is not for the faint of heart. Dig in and concentrate on the tasks at hand. The benefits of this effort will set a long-term process that will allow your residents to better understand their environment and their need to protect it. Your efforts are not trivial.

**Background Information**

http://outreach.missouri.edu/mowin/Trainingstwater/stormwater.pdf

Links for information relating to runoff quality and quantity…very extensive.

http://www.stormh2o.com/sw_0409Stormwater.html

Stormwater Utility programs…where do they stand now? Stormwater magazine Oct 2004

http://www.epa.gov/ORD/WebPubs/ntuw/Cyre.pdf

Great background information article, written by Hector Cyre of Water Resource Associates, located in Kirkland WA.

http://www.stormh2o.com/sw_0501_guest_editorial.html

Stormwater Utility fee makes the best sense (Griffin,GA by Dr. Keller) even considering hurricane damage costs. The fee is a stable funding source set to meet the needs of the public

**Setting the Fee Rate**

http://www.pvpc.org/docs/landuse/storm_util.pdf

Tremendous article on “How to create a Stormwater Utility Fee” organized by Massachusetts Pioneer Valley Planning Commission. Good background.


Interesting dialogue between Columbia-Boone County, MO board members regarding: a) what if someone does not pay the fee b) Classes of watersheds by quality/quantity and c) higher rates for areas the board does not want to be developed?

http://www.co.arlington.va.us/departments/EnvironmentalServices/epo/EnvironmentalServicesEpoSwfunding.aspx

Arlington VA completed their Masterplan and are now working on their feasibility plan to set the SW fee rates.

http://stormwaterfinance.urbancenter.iupui.edu/PDFs/Hargett.pdf

City manager of St Petersburg FL notes how expensive infrastructure maintenance and desires a stable funding source, based on impervious surface

**Selecting the Stormwater Fee Approach**


Different Minnesota approaches available to set up stormwater districts and funding based on the needs of each community.

http://www.ci.fort-collins.co.us/utilities/rates-stormwater.php

Land use and risk-based fee determination equation for Fort Collins, Colorado.


Virginia Beach VA since 1993 has charged about $3 per household. Community of 125,000 they realize $8 million per year. General acceptance yet some call it a rain tax. The director of the program answers questions about the program.