

## GATHERING LEAVES IN THE FALL

As you know, the City of Union provides leaf pickup each year for people who put their leaves out “by the curb.”

It is only fair to note that the most environmentally sound practice for lawn leaves is to mow them up and disperse the choppings evenly around the lawn. Even the Scott’s Fertilizer Company agrees. Here is an extract from their website:

“Chop Those **Leaves** With Your Mower: Take the **grass** catcher off your mower and mow over the **leaves** on your **lawn**. You want to reduce your **leaf** clutter to dime-size pieces. You'll know you're done when about half an inch of **grass** can be seen through the mulched **leaf** layer.”

They go on to suggest spreading some high nitrogen fertilizer after the leaves have been chopped up and dispersed. This author has done that for years.



It is only fair to point out that leaving the leaves on your lawn also saves effort, time, and City budget for collecting the leaves at the curb.

But, for whatever reason some still prefer to gather the leaves and put them out by the curb. But when you do so, please avoid putting the leaves in a position where they are likely to be swept into the storm drains.

Avoiding the storm drains may be tricky. It would be best to place the leaves on the pavement, but at the edge of the pavement, so as not to kill the grass if it takes the City a few weeks to collect them all. And it is equally important not to place the leaves over, or

near, a storm drain. They should be placed as far from the open drains as possible, in a good tight pile that won't be prone to blowing around.

If you just don't know where to put them, just give me, John Applegate a call (836-0145), and I or one of my staff will stop by and advise you how to deal with the situation particulars at your house.

One might wonder why natural leaves pose a problem to storm drains and water ways. The answer is that when we rake them up into a pile, we concentrate their properties into a slug that is just too dense for nature to handle without causing other problems. If they get washed into our storm drains and then the river or creek, they rot in the water. When they rot in the water, the rotting uses up the dissolved air in the water; that dissolved air is needed by the fish in the water. They might even plug up the storm drains and waterways, causing little floods in the area.

The very best solution, instead of raking them up into piles is to use the lawn mower to mulch them into pieces which are evenly distributed around the lawn. They will rot in amongst the grass over the winter and add to the humus for the lawn. Humus is good for the lawn; it provides an easier path for the roots in the winter and spring. The humus also assists in keeping soil from being eroded off the surface of the lawn. A light application of high nitrogen fertilizer late in the fall will assist the lawn to decompose these leaf bits and release their nutrients into the grass root area just as the lawn begins to green up in the spring. You will be delighted at the result. And we will, too, because fewer leaf piles to collect will save the City money. Have a nice Fall everyone.

(This article appeared in the Fall, 2018 Newsletter.)

## **Non-Exposure**

The goal of "Stormwater Management" is to cut down on trash, sediments, chemicals, oils, and other unnatural things getting into our waterways: rivers, creeks, streams, etc. None of those things are good for the fish.

When the EPA started reviewing the stream pollution problem, they first focused on industrial facilities because the EPA thought that they were usually contributing the most amount of pollution. But that wasn't necessarily so. Cities have facilities that are quite "industrial" from various perspectives.

Our City of Union has three such "industrial" operations: the wastewater treatment plant, the water supply plant, and the city yard (where all of our heavy equipment for snowplowing, sewer maintenance, and grounds maintenance are kept). So, how are we doing with regard to stormwater at these three City facilities? We have achieved certified "non-exposure" status for all three. Here's how that status is defined by the EPA: A "non-exposure" facility has absolutely nothing stored outdoors that might pollute, not even construction equipment (that might have a drip of oil or grease that might wash into the stormwater system). There is absolutely nothing stored outdoors. Everything is indoors, including materials like fertilizer and salt, oil barrels, pesticides and herbicides,

maintenance processes, and paint. There is literally nothing stored outdoors exposed to rainfall that could contribute pollutants to stormwater.

A “non-exposure certification” isn’t a permit, but a means of officially declaring that there is nothing that could contribute to pollution through stormwater at a facility. Each facility is registered with the EPA permitting branch by a State registered Engineer as a “non-exposure facility” and there’s no permit needed.

In the City of Union, it was the City Water Plant that first achieved this status, in about 1999, when the water processes and standby power generator were first totally enclosed, indoors, and certified for “non-exposure” status with the Ohio EPA.



The Water Plant is completely indoors.



Next the Wastewater Plant achieved “non-exposure” status after all of its processes and storage items were completely enclosed or roofed over so that stormwater could not wash anything

off of any materials in the system. Wastewater

Screening operation enclosure.

And finally, the City Yard achieved “non-exposure” status after all of its equipment, maintenance processes, and stored materials were completely enclosed, or roofed over. City Yard fueling station tanks and valves.



These Photos show some of the various City of Union stormwater-shedding roofs and enclosures.

(This article appeared in the Fall, 2017 Newsletter.)



## WHY DO WE HAVE “DETENTION BASINS”?

Today, as we drive around the area, we can see detention basins, and sometimes ponds, near all the new big buildings. What are they for, we may wonder? What is their purpose? There are several reasons. The most basic is that the new building design codes require them. But why?



The object of their design is to preserve the environment and also to prevent flash flooding in nearby creeks and rivers. When new large buildings are built, more of the ground area becomes impervious to water, and the result is that many rains will run off much more quickly into the storm ditches, creeks, and rivers. This, in turn causes “flash flooding” downstream. Building codes were modified to require that rainfall, or “Stormwater,” be detained and released more slowly to mimic the run off conditions of the building and parking lot site before the new construction happened.

Today, the designer’s objective is to preserve not only the site’s runoff rate, but other environmental factors as well, such as water soaking into the ground. “In the old days,” before such new construction, a large percentage of every rain would simply infiltrate into (soak into) the ground, thus replenishing the ground water. But new roofs are literally impervious, and 98% of all rain runs off, rather quickly. The 2% that doesn’t run off evaporates. A well designed detention basin will allow much of any rainfall to stay for a while and soak into the ground.

The detention basin is constructed first on any new project in order to help keep silt and mud from the temporarily bared earth off the roads and out of storm drains. This also serves the environment; as such silt runoff can cause hard times for the fish in the streams.



The biggest basin in town (maybe the whole Dayton region) is located in the City of Union Industrial Air Park. It serves one of the biggest buildings in

Ohio, P&G's new main distribution operations building near the Dayton Airport.

Now you know.

(This article appeared in the Spring, 2017 Newsletter.)

## **CITY STORMWATER COMPLIANCE NEWS**

We have previously mentioned efforts that the City of Union has expended to comply with national Stormwater Standards. We have discussed The City of Union's commitment to good Storm Water Management, and our need to comply with State and Federal Regulations. The City of Union has an excellent record in this effort to shed only clean stormwater to protect water quality and to reduce flooding.

As a reminder the Ohio Environmental Protection Agency has defined six "Minimum Control Measures" for Stormwater Management:

- 1.) Public Education,
- 2.) Public Involvement
- 3.) Illicit Discharge
- 4.) Construction Site Runoff Control,
- 5.) Post-Construction Stormwater Management,
- 6.) Good Housekeeping for Municipal Operations.

Here are some of the things that the City has done to comply with these new Statewide Stormwater mandates:

The City does public education via newsletters items like this one, its website, and signage at public parks.

We ask the public to keep storm runoff clean by minimizing the use of fertilizer and pesticides. It is also



important to keep grass clippings and leaves out of the street and off driveways and sidewalks where it will be flushed into the storm sewers and then into creeks and rivers.

Illicit Discharge Elimination means to make sure that all “dirty water sewers” are connected properly to our City sewage treatment plant. City workers check for improper connections to the stormwater sewer system all the time, as they do their regular city jobs. We ask that the public report any dirty water that they think is going into the storm sewers to the Union City Manager’s office (836-8624) so that we can check it out. No one should be changing oil in the street for example where spills would be flushed into the storm sewers.

The City has monitored construction projects for many years to be sure that dirt is not being washed into the streets and down the storm sewers. We have been doing that since long before there were regulations requiring it; it’s just common sense. And, we have long monitored the care of any Stormwater detentions basins and sewers after construction was completed. They shouldn’t be filling with plastic bags, bottles and weeds; again, common sense.

And, the City has modified its own operations by covering all City maintenance materials so that none can be washed into the storm sewers during rain storms. Interestingly, OEPA encourages the registration of such facilities as “Non-exposure” where every sort of potential contamination is covered and out of the weather. In the City of Union all three potentially problem sites are registered as “Non-exposure” the City Yard, the Water Plant, and Wastewater Operations. All the materials: salt, calcium chloride, sand, fuel, etc, are stored under roof. Equipment washing bays are also under roof.

The City of Union will continue to keep the storm runoff as clean as possible and we appreciate the residents of Union helping to keep our waters clean, as well.

Thank You.

(This article appeared in the Fall, 2016 Newsletter.)



## Water-Wise Yard and Garden Maintenance

It may be cold or freezing now, but Spring and Summer are just around the corner!

Lawn care and landscaping can be one of the biggest users of water. Clever gardeners understand, however, that there are a number of ways to save on water and still maintain a beautiful yard and garden. Here are some popular ideas for conservation and beautification:

1. Consider using less grass and more low-maintenance perennials or groundcovers. Choose water-thrifty perennials that are native to Ohio.
2. Group plants into high, moderate, and low water-using zones, to take advantage of the natural characteristics of your yard.
3. Use organic or inert mulches to reduce water evaporation, erosion, and weed growth, while enhancing your garden aesthetics.



4. Mow high. Set your mower blade at three inches or higher. Tall grass helps prevent weed growth. (You might want to do one close “shaving” with the mower in the spring (at maybe 2 inches) and then raise the blade for the rest of the year. This helps to turn weeds and leaves from the winter months into useful mulch for the newly blossoming grass.)
5. Mow more frequently to allow the shorter cuttings to fall into the lawn where they can add to the healthy humus layer and not need collecting.

6. If you need to rake a bit off the lawn at some point, put it under a bush in your yard instead of sending it off to the landfill with the garbage; it'll be good for the bush.
7. Direct home downspouts toward the lawn or a rain barrel, not the pavement. Rainwater is free; it is not chlorinated and is usually better for plants.
8. Rain barrels are popular. They come with lids and screens to prevent mosquitoes, and are easy to use. They are available at most of the handyman supply stores.
9. You might even try "drip irrigation" to apply water directly to plant roots. Drip irrigation helps maintain healthy plants and waters mostly the plant, not surrounding weeds, as sprinklers do. Some area handyman and garden stores carry new drip irrigation products.
10. Water before 10 AM or in the late evening for less evaporation during the heat of the day.
11. Minimize the addition of fertilizers and pesticides. Extra fertilizer increases water consumption.
12. Mow up your leaves in the fall and spread them on the lawn in-so-far as possible; such organic matter improves soil texture and composition over the long term and enhances the water-holding capacity of the lawn. Put some under your bushes.



13. Leaf and grass clippings contain phosphorous which the lawn needs. Most lawn fertilizers contain no phosphorous these days. Scotts, the



Ohio based national lawn fertilizer producer, recommends getting your lawn phosphorous from grass and leaf clippings, not from fertilizer.

Following these practices will help promote clean Stormwater in the City of Union.

(This article first appeared in the Spring, 2016 newsletter)

### **CITY OF UNION COMPLIANCE WITH THE NEW STORM WATER MANDATES.**

In previous newsletters we have discussed The City of Union's commitment to good Storm Water Management, and our need for compliance with new State and Federal Regulations. This effort is intended to protect water quality and reduce flooding.

The Ohio Environmental Protection Agency has defined six "Minimum Control Measures" for good Storm water Management:

- 1) Public Education,
- 2) Public Involvement,
- 3) Illicit Discharge Elimination,
- 4) Construction Site Runoff Control,
- 5) Post-Construction Storm Water Management, and
- 6) Good Housekeeping for Municipal Operations.

The City of Union has an excellent record in this effort to produce only clean storm water. Here are some of the things that the City has done to comply with these new Storm water mandates.

This newsletter item and all the previous ones on Storm water are intended to educate the public, our citizens, about the need to keep the storm runoff clean by keeping excess fertilizer, pesticides, grass clippings, and leaves out of the street and

off driveways and sidewalks where it will be flushed into the creeks and rivers. City staff encourages anyone in Union to call in to the City (836-8624) if they note abuses in this area so that City staff can investigate and correct the violators. City staff also keeps an eye out for any such abuses. No one should be carelessly changing oil in the street for example where spills might be flushed into the storm sewers.

The City has modified its City Service Center on Shaw Road so that none of the maintenance materials are located out in the weather where they can be washed into the storm sewers. All the materials, salt, calcium chloride, sand, asphalt, paints, and equipment fluids are stored under roof. Vehicle washing bays are under roof, and fueling tanks and equipment is under roof. And the entire maintenance yard has been paved so that dust is controlled and cannot wash off into the creeks. This was done to comply with the State and Federal Storm water Regulations.



City Staff monitors construction projects to be sure that soil is not being washed into the streets and down the storm sewers.

These are just some of the ways that the City is meeting the mandates for clean Storm water. In future articles, we will describe some of the City's other efforts to produce only clean Storm water. If you have any suggestions, please call them in to the City, and we will see what we can do.

(This article first appeared in the Summer, 2015 newsletter)

## **STORM WATER DETENTION**

There's an interesting term. What on earth does it mean?

Years ago when this author was in college studying civil engineering, one of the principles of good design for buildings and neighborhoods was that you made sure rain water went away quickly; the quicker the better. Buildings were higher than the streets, and streets had to have a good slope with storm drains or wide gutter to carry the water as fast as possible off the property and off the streets and into the nearest creek or river.

But that “good practice” had a bad result. Downstream the rivers would rise quickly during any storm and flooding would occur. The term that developed for that was “shock loading,” meaning that the rivers would rise like lightening whenever it rained in urban, built up areas. And the shock loading caused floods.

“Storm detention” was the cure. Now, most building codes require that the designer slow down the runoff from medium sized rains. You will notice that most new buildings and neighborhoods have a low basin, usually dry, that catches much of any large rain, and allows it to drain slowly out to the creeks during the rest of the day. Sometimes, for a larger neighborhood, these grassy basins can be large enough for soccer and football games during dry times. You may have wondered why such basins were built; now you know.

They are designed to slow down the neighborhood runoff, and reduce the shock loading downstream. These days, the guidance from the environmental agencies like the Soil and Water Conservationists, and the Environmental Protection Agencies is that building designers should keep as much of the rain water on the property as possible, just like before the area was developed. Good design for buildings should allow rainfall to drain into the ground, and run off slowly like it did when Mother Nature was in charge. Forests have almost no runoff. Most of the rainfall on a forest drains into the ground. Rivers should get most of their water from groundwater as they did in the old days, filtered, slow, and long lasting not from fast rain runoff.



But building roofs and paving keep the water from sinking directly into the ground, so other property features must be built to slow down the flow, detention basins are one of the features that will do that. The basins can be designed with natural looking contours; they do not have to look like bare rectangles, like they did so often in the recent past. They can include rain gardens that retain some of the water for days at a time. Rain gardens allow more of the water to sink into the ground like Mother Nature used to do. Rain gardens need to be planted with plants and trees that do not mind “wet feet” for a few days and some of those can be very pretty: some Asters, Marigolds, Willows, Oaks, and Sunflowers, for example.

So, next time you are out and about, see if you can notice some of these storm water detention features on the grounds of newer buildings and neighborhoods in the area.

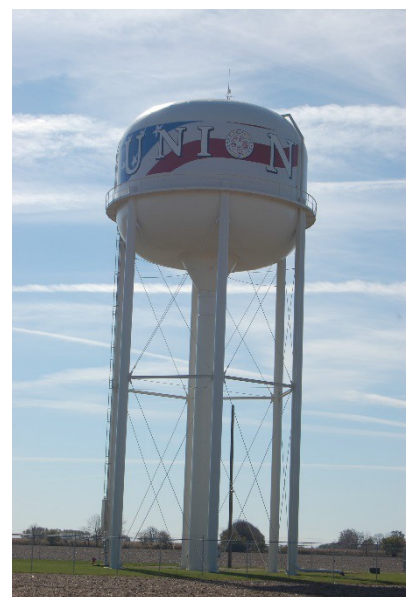
(This article first appeared in the Fall 2014 Newsletter.)

## **WATER: TRANSPARENT RICHES**

We are so blessed with water here in the Miami Valley that we are almost always unaware of the water situation around the world, or even across America. In a typical year more than 3.4 million people die from water, sanitation, and hygiene-related causes. Nearly all those deaths, 99 percent, occur in the developing world. An American taking a five-minute shower uses more water than the average person in a developing country slum uses all day. 2008 statistics from the World Health Organization (WHO) and the UN back up this statement.

Our abundance of good water here is just too easy to take for granted. Our water tastes good, it's clean and safe to drink. It comes down relatively frequently as clean rain, runs off our roofs and driveways and into the local storm "sewers", creeks and rivers. The next time we find ourselves sitting in the inconvenient rain at a football game or some other situation, we should recall that millions of people in the world would give just about anything to trade places with us. It's been said that most Americans wouldn't wash their car in the water most of the world is still using for bathing.

One sign of prosperity in America is the city water tower. Any community that can manage it puts up a water tower to serve itself and attract other people and business. Here in the City of Union we have a fairly recently constructed water tower over near the Dayton Airport that is likely to bring the community new business, soon. Here in the Miami River Valley, good clean water can be the focus of serious economic development. Our many creeks and streams are clean enough to swim and boat in and the rest of the country is attracted to them for recreation. Let's continue to do our best to keep them clean. We are rich, in clean water. We need to conserve our riches.





(This article first appeared in the Fall, 2013 Newsletter)

## WHY DOES STORM WATER MATTER

### What is Storm water Runoff?

Storm water runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent storm water runoff from naturally soaking into the ground.

### Why is storm water runoff a problem?

Storm water can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, washing, and drinking.



### The effects of pollution

Polluted storm water runoff can have many adverse effects on plants, fish, animals and people. Note the cloudy (muddy) waters in this photo coming in from the right and clouding up the clear water stream on the left. Imagine that you are a fish trying to “breathe” the dissolved air in this water, and unable to see where it is going.



***Sediment*** can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.

***Excess nutrients*** can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that depletes (“removes”) oxygen from the water. Fish

and other aquatic organisms can't exist in water with low dissolved oxygen levels; they cannot “breath.”



### **What can we do?**

Let's each and every one of us try to reduce the amount of these bad things that gets into the water streams nearby. Let's give the fish a chance. Reduce the fertilizer, insecticides, and pesticides, we use, and keep it all to the minimum necessary to keep our lawns healthy and green. Reduce the drips and spills of things like paint, solvents, used motor oil, and other auto fluids. Together, we can make a difference.

(This article first appeared in the Spring, 2013 newsletter)

## **STORM WATER POLLUTION PREVENTION**

### **WHY IT IS IMPORTANT TO GATHER UP THE LEAVES IN THE FALL!**

As you know, the City of Union provides leaf pickup each year for people who put their leaves out “by the curb.” We all need to avoid putting the leaves in a position where they are likely to be swept into the storm drains.

Avoiding the storm drains may be tricky, frankly. It would be best to place the leaves on the pavement, but at the edge of the pavement, so as not to kill the grass if it takes the City a few weeks to collect them all. However, it is equally important not to place the leaves over, or near, a storm drain. They should be placed as far as possible from storm drains, in a good tight pile that won't be prone to blowing around. If you just don't know where to put them, give me a call (836-



0145), and I or one of my staff will stop by and advise you how to deal with the particular situation at your house.

One might wonder why natural leaves pose a problem to our storm drains and water ways. The short answer is that they cause an oxygen shortage in the waterways and suffocate the fish. This happens because leafs provide food for water bacteria that multiply and suck up all the oxygen in the water leaving none for fish. In real “nature” the leaves fall on the ground pretty much near the tree. Only a

few make it into the waterways. In fact, they add a certain amount of natural humus to the soil in the vicinity of their tree. When we rake them up into a pile we concentrate their properties into a slug that is just too dense for nature to handle. If they get into the water, they rot in the water, using up the dissolved air that is needed by the fish in the water. They might even plug up the storm drains and waterways, causing little floods.

The very best solution, instead of raking them up into piles, is to use the lawn mower to mulch them into pieces which are evenly distributed around the lawn. The small leaf pieces will fall into the grass, rot around the grass roots over the winter, and add to the humus at the surface of the lawn. This humus layer on the lawn then provides an easier path for the roots to grow in the winter and spring.

The humus also assists in keeping soil from being eroded off the surface of the lawn. A light application of high nitrogen fertilizer late in the winter will assist the lawn to decompose these leaf bits and release nutrients into the grass root area just as the lawn begins to green up in the spring. You will be delighted at the result. And we will, too, because fewer leaf piles to collect will save the City money.



(This article first appeared in the Fall, 2012 newsletter)

## **Car Care and Storm water Pollution**

What has storm water Pollution got to do with owning a car? These topics may seem unrelated. But they aren't.

Whenever your car leaks oil or gasoline on the ground, there is the likelihood that these will be washed into storm drains during rainfall (or snow melts). Once on the streets, the oil, gasoline, or other auto fluids are carried in the water to the rivers and eventually to the oceans where it poses threats to fish and other marine life. Compared to the BP oil spill in the Gulf last year, this may not seem all that important, but as one of 300 million people owning cars, you can see how oil drippage and gasoline spills could seriously add up. And, the impact

locally on our creeks and rivers will be even more immediate and impactful, right here in our back yards!

Vehicle owners (you) can minimize pollution of the creeks and drains that handle storm water by these following things:

1. When you pull up at a gas station to fill your vehicle, you must be careful not to spill gasoline on the pavement. Ensure that when you lift the nozzle, there is no residual fuel that will spill. If there is some fuel there, pour it into the gas tank carefully (it's FREE!).
2. Insert the nozzle carefully and deeply into the gas tank before starting the gas pump. If you intend to fill your tank, watch the tank as it fills up to avoid any overflow. Then, when you finish filling the car, take care to shake your nozzle off (into your tank) before you return it to the pump. Withdraw the nozzle slowly and carefully. Wait for the last drop to drain into the gas tank before you remove and replace the nozzle on the pump.
3. When parked on clean pavement, check to see that oil, brake fluid, or gasoline does not leak or drip from your car. If you notice a leak, take steps to fix it quickly.

4. Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations. Never throw used auto fluids into storm drains, catch basins or open ditches.



The City of Union provides for free disposal of such automobile oils

and fluids at the City Service Yard, 216 Shaw

Road in Union. The drop off box is located outside the fence by the gate and your used oil can be dropped off any time of the day.



5. Wash your car on your lawn instead of on a driveway or the street to keep the soapy wash water from washing into the storm water drains (and then on to



the creeks and rivers to the Gulf of Mexico, yadda, yadda). If you wash the car on your lawn, the wash water will infiltrate into the ground where it will actually make the grass grow even better (as long as you do not do this too often, say more than once per week). Better yet, if you can afford it, wash the car at a commercial car wash that treats or recycles its wastewater. Many do. (Even the ones that do not recycle, drain their dirty water to the local wastewater plant where it is cleaned up before it goes into the river.

6. Tossing trash out the window is a no-brainer. Such litter will obviously get washed into the creeks and rivers.
7. Emptying the car's ash trays (butts and debris) onto the streets at a stop light is another obviously wrong practice.

(This article first appeared in the Summer, 2012 newsletter)

## **ICE AND SALT PROBLEMS FOR STORM SYSTEMS**

With cold weather comes the hazards of slippery ice and snow. We do our best to shovel and remove the snow from walks and drives, but the little we leave still may cause slips and falls. So we toss some salt on the surfaces to make the last ice and snow disappear. It's like magic.

Occasionally we put too much salt on the walks and drives "just to be safe".

Unfortunately, none of that salt really disappears; it just mixes into the snow and ice, lowering its melting temperature, and causing the ice and snow to melt and flow away. The salt goes with the water that results from the melting of the snow and ice. The salty water travels downhill into the lawn or the storm drains and from there into the creeks and streams, where it is not particularly good for the aquatic life. A little salt in the waterways doesn't eliminate the fish, but too much can cause them serious problems.

We should use no more salt than is absolutely necessary to eliminate the targeted slipperiness.

In the City of Union, we do several things to minimize the use of road salt. First, we mix some sand and small gravel into some of the road salt because sand



some beet juice into the salt because it helps the salt to stick to the roads (where it is doing its job) instead of the shoulders of the road (where it is only wasted at best, and doing damage to the grass or streams at worst). But here's our latest technology to reduce salt: we are now tracking salt use quantities on all of our roads automatically with a system that combines and records the GPS location of the truck

as it spreads salt, with the weighed amount of salt mix being spread!

We recommend that everyone use as much salt as they need to make for safe passages, but don't use more than you must because it has negative effects on the environment.

Slowing down long before intersections is the safest way for vehicles to be ready for stopping in time. Please don't forget to slow down. And be very careful when you are out walking in the snow and ice. Let's all try to make it to spring without any slipping mishaps.

(This article first appeared in the Spring, 2012 newsletter)

## **Storm Water Regulations for the City of Union**

In 2003, new federal storm water regulations for smaller cities took effect. In Ohio, the City of Union and others were required to sign on to the Ohio EPA plan for compliance with these new regulations in accordance with 40 CFR Part 122.32 and Ohio Law. Union was required to submit a Storm Water Management Plan (SWMP).

These plans are intended to protect water quality, slow the storm water discharged after small storms, and satisfy requirements of the Clean Water Act and Ohio EPA's Phase II Storm Water program.

This Program addresses six Minimum Control Measures ("MCMs") required by federal and state regulations for the nation's smaller cities. Bigger cities, like Dayton, were required to meet new storm water regulations five years earlier. The regulations for the larger cities (approximately 700 across the US) were much more difficult and expensive to meet.

The City of Union needed to commit to the following "MCMs" that are expected to result in cleaner storm water discharged by the City:

- 1) Public Education and Outreach on Storm Water Impacts
- 2) Public Involvement/Participation
- 3) Illicit Discharge Detection and Elimination
- 4) Construction Site Storm Water Runoff Control
- 5) Post-Construction Storm Water Management in New Development and Redevelopment Areas
- 6) Pollution Prevention/Good Housekeeping for Municipal Operations

You can see that much of this list deals with citizen involvement and input. This article is intended to help meet MCM number one. We will have more articles over the next several months to explain other facets of this new storm water program.



We would like your help. If any Union resident would like to assist us to make local storm water and our environment cleaner, they should contact the City Offices, at 836-8624, to express their interest. If you leave your contact information, the City will notify you when any public storm water presentations or activities come up. We may seek

volunteer assistance to help the City by making periodic inspections and notes on the condition of storm water observable during dry weather around the City. There may also be other opportunities to help.

(This article appeared in the Fall 2009 newsletter)

## **Storm Water Updates: Help to Protect Our Rivers**

Many of the storm sewers in City of Union drain directly into our creeks and the Great Miami River. Storms sewers in the City of Union do not drain to the City's wastewater treatment facility. Therefore, it is important to keep harmful materials out of these drains which could cause problems in the downstream waterways.

**Many common things will harm the fish and aquatic life in our storm drains and streams:**

- Waste oils and automobile fluids
- Paints and thinners
- Excess fertilizers on lawns and gardens
- Solids of any kind, including grass clippings and yard debris
- Open Excavation without erosion control measures like silt fences or mulch berms

City of Union staff have attended meetings with EPA officials and attended education sessions to determine how best to help our community to develop a suitable storm water program. We are in pretty good shape, but we need all our citizens to help us keep our storm drains and streams in good condition.

About 280 urban municipalities operate “municipal separate storm sewer systems” (MS4s) in Ohio. One of these is the City of Union. These MS4 systems include piping, but also a lot of surface waterways that only run with water during storms. These MS4s have been found to be the source of some significant pollution, which does harm the water life. Only a small part of this pollution is found to be from “illicit discharges” in this part of Ohio. “Illicit discharges” are defined by the OEPA as being waste materials purposely directed to storm water channels, or



MS4s, such things as septic water from toilets or washing machines, or floor washings from a machine shop, or similar liquid wastes.

City of Union citizens need to consider how their normal activities might impact the City network of storm drains. It can only be clean if we all keep in mind what might impact it.

For example if you are about to fertilize your lawn, consider how much fertilizer is really needed (the fertilizer companies are trying to sell their products,



of course, so they may encourage more lawn fertilizer that is really needed). Try a little less fertilizer each year and see how it goes. And also, try to keep it from landing on sidewalks and nearby streets, where it just washes directly into the storm system. Fertilizer runoff causes that ugly green growth in the streams which chokes the waterlife and actually reduces the oxygen

available for fish.

If you change your own oil, be very careful to keep it contained and off of driveways and streets, because it harms the water life, too, as you can imagine. The next rain washes it right into the streams. This also goes for any other automobile fluid, like antifreeze, fuel, or steering fluid.

City of Union staff will continue doing several activities designed to keep our streams clean:

- Expanding existing services such as street sweeping and catch basin cleaning
- Mapping the storm water system
- Keeping an eye out for leaking home septic systems
- Performing routine inspections on construction sites
- Helping the OEPA to do public education on these concerns.

Additionally, the City of Union offers free oil recycling containers. See more information on our website here:

<http://www.ci.union.oh.us/index.php/departments/detail/oil-collection/>

(This article first appeared in the Fall, 2011 newsletter)