

CASS COUNTY SOIL CONSERVATION DISTRICT'S

A Resource for Cass County
Living and Stewardship

Urban Living Handbook

Prepared by Cass County Soil Conservation District

701.282.2157 x3 • www.casscd.org • www.facebook.com/CassCountySoilConservation



Map of Cass County

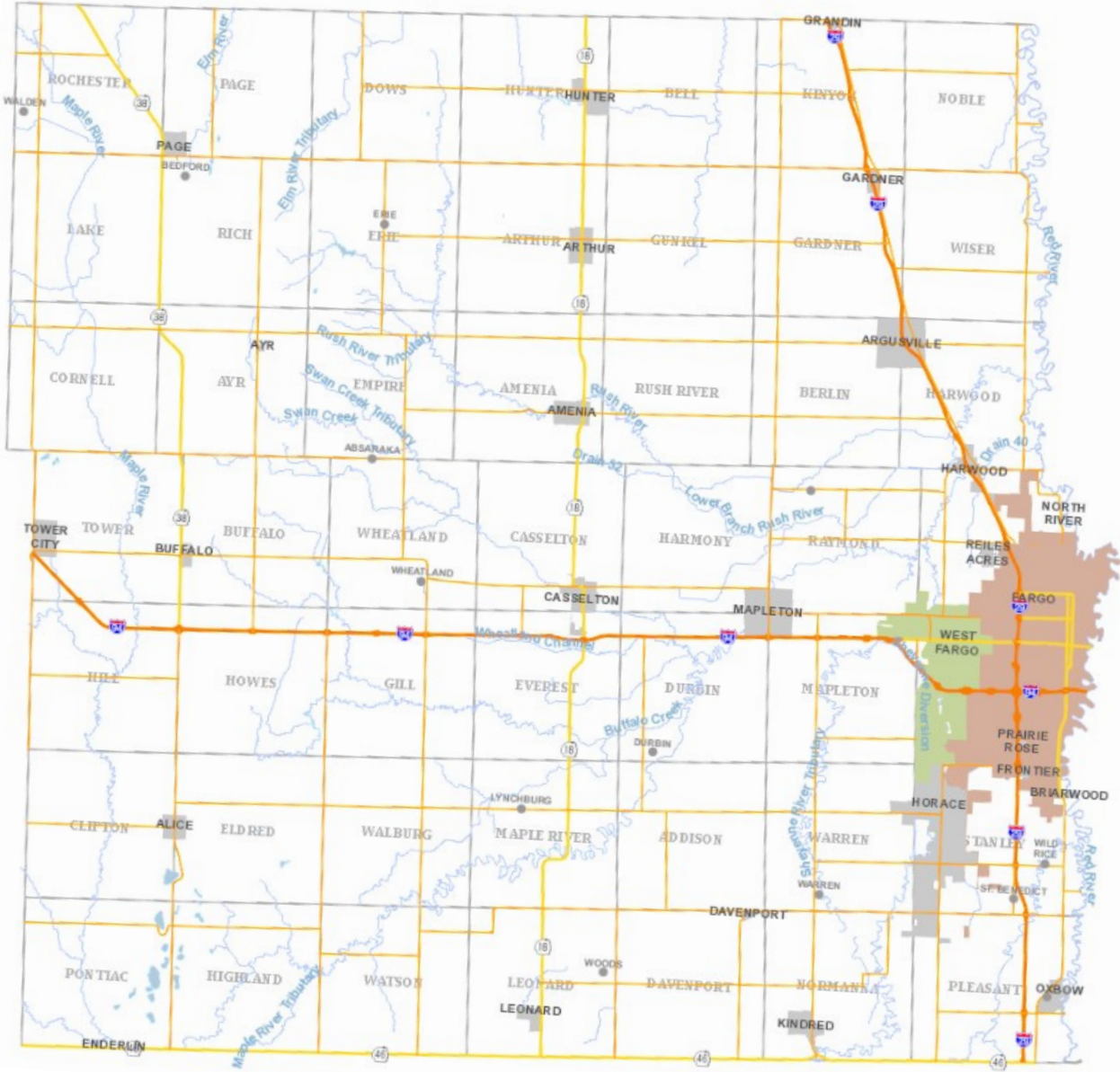


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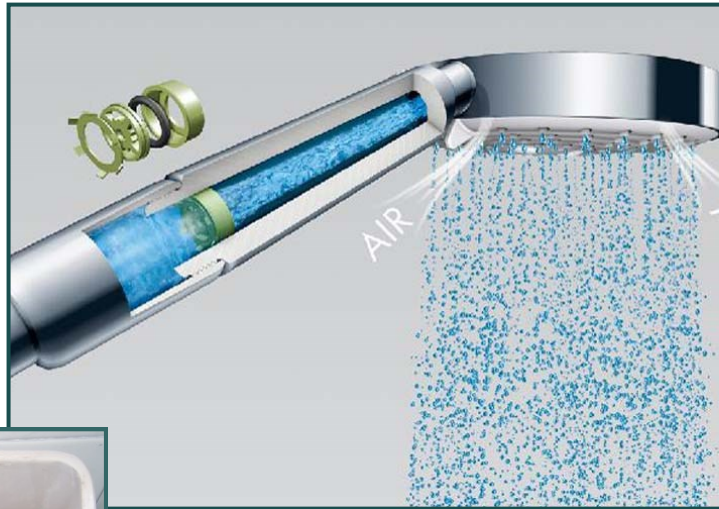
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YOUR HOUSE:

Water Conservation

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Recycling

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Water Conservation in your Home

Water is one of our most precious resources. We have access to less than 1-percent of the freshwater on earth, most of which comes in the form of lakes and rivers. Cass County is approximately 1678 square miles. Although Cass County does not have an abundant amount of lakes or rivers, only 3 square miles total of water in the county¹, we need to conserve, preserve, and appreciate the limited water we do have for not only recreational purposes, but also health in drinking water. There are a few things each household can do to conserve the water used each day within the home.

- 1. Check for leaking faucets, toilets, and pipes.** A simple, small leak can accumulate to over 3,000 gallons of wasted water per year if left unrepaired. To check for a leaking toilet add food coloring to the tank. If, the color begins to show in the bowl within 30 minutes, then there is a leak. Fixing leaking pipes, toilets, and faucets may cost pennies on the dollar, end up saving money in the long run, and conserve on water usage as a whole.
- 2. Increase toilet efficiency.** Older toilets may use anywhere from 3-7 gallons of water per flush. New toilets are required to use at or less than 1.6 gallons. Replace older toilets with newer more efficient ones. Take it one step further by, placing something such as two plastic bottles filled with sand or rocks and water, a brick, or any other similar object into the tank to occupy space that would otherwise be occupied by water. This reduces the amount of water in the tank prior to flushing and hence reduces the amount of water used per flush.
- 3. Install aerators on faucets.** Aerators are designed to decrease the flow of water from a faucet, up to 50 percent, to reduce the amount of wasted water. The typical cost is less than ten dollars and installation is easy.
- 4. Install water-saving shower heads.** Modern showerheads can reduce the amount of water wasted by at least ,or more than 50% in comparison to older models. These again are a relatively inexpensive and easy way to reduce water usage.
- 5. Turn off water we not needed.** Take a shorter shower. Turn the shower off while soaping up and turn on again when ready to rinse. You may also want to keep a timer in the bathroom to remind your self when you should be done with a shower to keep them shorter. Turn off the faucet while brushing your teeth.
- 6. Do full loads.** Both dishwashers and clothing washers should have full loads before starting to maximize water conservation. When washing clothing adjust the load size appropriately to conserve water and avoid the extra rinse cycle whenever possible.

Recycling

With multiple towns utilizing Fargo's landfill for dumping trash the city of Fargo's landfill is rapidly filling. According to WDAY, it's estimated that within the next 8-10 years it will reach maximum capacity.

You Can Help!

The amount of trash thrown out by a typical household can be reduced by two thirds if they were to recycle and even more so by composting in addition. Recycling saves on raw materials, which saves us all time, energy, and money. Recycling just one aluminum can saves enough energy to run a TV for 2 hours, a laptop for 3 hours, or a 14-watt CFL bulb for 20 hours.

What Can Be Recycled?

- Glass bottles & jars
- Metal cans
- Flattened cardboard
- Paper & magazines
- Plastics #1-7

** Make sure all containers are clean of any food product and dry before recycling it**

What Can't Be Recycled?

- Plastic bags
- Styrofoam cups & containers
- Sharps & medical waste
- Food waste



Drop-off locations for plastic bags and recycling

Perhaps you live in an apartment or residence where curbside pick-up is not available. Don't worry, there are lots of recycling drop-offs within Cass County.

Plastic Bags

All of those unused store plastic bags as well as produce bags can be dropped off at any JC Penny's, Hornbacher's, Target, Wal-Mart, or Lowe's.

Recycling Cont.

Recycling Drop-off Locations

North Fargo Complete Recycling sites

- Longfellow Park: Elm St and Forest Ave. N.
- Waste Water Plant: Intersection of 10 St. and 37th Ave. N.
- North Coliseum: 10th St., N. of 17th Ave. N.
- Solid Waste Department: 2301 8th Ave. N.
- Mickelson Field: 9th Ave. N., east of Oak St.

South Fargo Complete Recycling sites

- Water Plant: 1408 S. River Road
- Lift Station: 42nd St. and 2nd Ave. SW
- Lewis & Clark School: 17th St. and 18th Ave. S.
- Rheault Farm: 25th St. and 30th Ave. S.
- 4121 S. University Drive
- Centennial Area: 25th St. and 40th Ave. S.

West Fargo :

- 40th Ave and Sheyenne St. (water tower)
- 117 8th St W. (South parking lot)

- Shanley High School: 5600 25th St. S.
- Osgood Fire Station (north side) 3957 Village Lane
-

North Fargo: All recyclables except yard waste

- Family Fare: University Drive & 7th Ave. N.
- CVS Parking Lot: University Drive & 19th Ave. N.
- MinnKota Recycling: 901 4th Ave. N. - Cardboard Only
- Household Hazardous Waste Facility: 606 43 1/2 St. N.
- Children's Museum: 1201 28th Ave. N.

South Fargo: All recyclables except yard waste

- Parking Lot (near CVS): 13th Ave. & 25th St. S.
- Cash Wise Foods: 14th Ave. & 33rd St. S.
- Lincoln School: 21st Ave. S., E. of 9th St.

Glass, Metal and Plastics only

- McKinley School: 2930 8th St. N. (newspapers also accepted)
- Hawthorne School: 555 8th Ave. S.

Other



Recycling Electronics and Other Hazardous Materials:

Electronics– TV's, computers, tablets, cell phones, radios, appliances, ink, rechargeable batteries, audio devices, cd's, dvd's, video games and gadgets, cameras, camcorders, and car audio, video, or gps units all contain harmful material within them. These items should not be thrown in the garbage, proper disposal is crucial . Waste Management has an annual electronics recycling event each spring to accept 2 items per household. Best Buy accepts all of the above items and properly disposes of them. Most items are excepted free of charge, however a select few come with a small disposal fee . For a full listing of accepted items and their fees if any visit:

<http://www.bestbuy.com/site/Global-Promotions/Recycling-Electronics/pcmcat149900050025.c?id=pcmcat149900050025>

Paints and Chemicals– Paints and chemicals including household and industrial cleaners, garden/lawn products, and automobile products should be properly disposed of and not placed into your trash. All Cass County Residents may drop off these items free of charge at **606 - 43 1/2 St. N. in Fargo.**

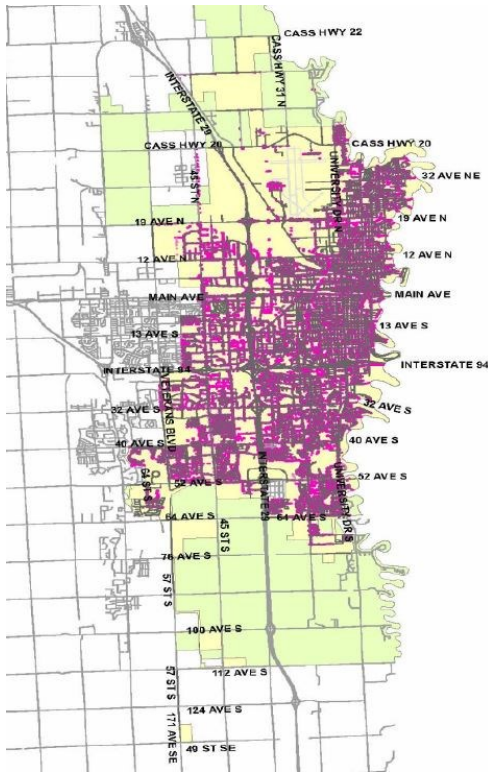
Want to get recycling pick-up at your business or place of work? Contact Waste Management: 877.652.4550. Want recycling pick-up at your home? Contact Waste Management: 888.960.0008 or visit www.wm.com



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Stormwater Management



Above: Map of Fargo's stormwater system

With Cass County averaging about 21 inches of precipitation yearly one may wonder where it all goes and how does it get there. Stormwater is the water we get from any precipitation event such as snow melting or a rain shower. In more rural areas with adequate vegetation a majority of the stormwater is capable of infiltration through the ground. In an urban setting there is often less vegetation and more impervious surfaces. These surfaces such as sidewalks, parking lots, streets, and roofs restrict water from infiltration into the ground and direct it towards the storm drains. In the city of Fargo alone there are 400 miles of pipe, 10,000 stormwater inlets, and 6 legal drains.² These storm sewer systems carry the runoff, which consists of the stormwater, eroded sediment, and pollution, underground to an outfall site which generally leads into a local river and eventually into the Red River.

Managing Your Stormwater

As the stormwater travels across impervious surfaces all sorts of pollutants are collected and carried away as well. Things such as: leaves and grass clippings, automobile fluids, pet feces, lawn fertilizers, and trash are all examples of non-point source pollutants which get transferred with stormwater into local water bodies via storm drains. However, there are methods to intercept, capture, and temporarily hold stormwater to relieve the stresses of excess water and pollutants getting into our local waterways. Implementing rain barrels and rain gardens are some great options!

Non-point Source Pollution

Natural and manmade forms of pollution accumulating from multiple



Rain Barrels



Rain barrels are a small but great way to reduce the amount of stormwater runoff. These are easy to construct or may be purchased at most local home stores or through Cass County Soil Conservation District and River Keepers.

Rain barrels are a 55 gallon plastic food grade barrel that is designed to attach directly to a downspout. As it rains the water will be collected in the barrel. It's designed strategically with an inflow/outflow hose so you do not need to monitor it and has a spigot on the front to reuse the water for your benefit. The rain water is great to use for watering gardens and flowerbeds. This provides a great way to reduce consumption of city water, save money, reduce runoff, and provide a slightly acidic water which plants thrive from.

Want to make one of your own?

Attend a workshop: Each year Cass County Soil Conservation District along with River Keepers and Clay County SWCD host

Make Your Own Rain Barrel Workshops. Come learn more about stormwater and build your own rain barrel like the one pictured above to take home. Cass County residents who attend the workshop may be eligible for a 60% cost-share of the class fee upon completion of the workshop. For available workshops contact our office at 701.282.2157 x3 or visit www.facebook.com/CassCountySoilConservation

DIY: For those of you who are do it yourselves below are instructions to make one at home.

Supplies

- 1 - 55 gallon **FOOD GRADE** plastic barrel (other sizes are available)
- 1- drill
- 1 - Rain barrel diverter and parts kit (available for \$27 at Menards)

Directions

- Use the drill and provided circle saws to drill the holes for the spigot and in/outflow hose
- Insert threaded rubber seal into spigot hole and screw the spigot into it
- Insert the rubber seal for the in/outflow hose and attach one end of the hose into it
- Place barrel next to downspout to find where to drill the hole for attachment (make sure the hose will be level going from the barrel to the downspout, this is key!)
- Drill downspout hole and attach the barrel by inserting the inflow/outflow valve into the hole drilled in the downspout

Rain Gardens

Another great way to reduce the impacts of stormwater runoff is to install a rain garden. Rain gardens are shallow depressions strategically placed within your property to intersect, capture and temporarily hold stormwater runoff from your house, yard, driveway, and street. Native plant species with deep roots are planted to help infiltrate water, reduce erosion, and filter pollutants. The depression is generally anywhere from 6 inches to 2 feet in depth but depends on the amount of water you're wanting to capture. The size of a typical residential rain garden is 100-300 sq. ft. but depends on many different factors.

Plant species are selected based on that species ability to survive in your specific soil type and for survivability for varying environmental conditions from drought to temporary flooding.

There are some misconceptions about rain gardens: "Native plants are ugly looking," Although there are a few species that may be less attractive, however a majority of the native plants are very beautiful and some are often sold at local landscaping companies as landscaping features. "It will be a breeding ground for mosquitoes," While their purpose is to capture and hold water it's for only a brief period of time; 24-48 hours maximum while it takes 7 days for mosquito larva to hatch.

Always Call-Before-You-Dig: 1.800.795.0555

Important considerations in rain garden construction include soil type, infiltration rate, slope, location, and plant selection. For help in determining all of these factors and to learn the best way of installing one on your property contact Cass County Soil Conservation District's office at 701.282.2157 x3.



Understanding Soil

Why learn about soil?

Knowing your soil's composition is pertinent for understanding how it will react to weather conditions such as drought, excessive moisture, and wind. Also understanding these things can be exceptionally useful when planning projects and planting plants.

Soil in Cass County

There are many different soil types within the county. From sandy to silt and clay being predominant. How do you determine what type you have? Soil maps are an excellent source. Soil mapping has been around for decades and used in many professions in determining soil types. Online soil mapping allows for anyone to find their site location on an interactive map where each soil type for your selected area will then appear.

Basic Soil Testing

There's a lot to learn about your soil and determining your soil type can be easy to do with a few simple hands on tests.

The feel test: is mixing some water with your soil and rubbing the mixture between your finger tips. Clay soils are sticky, silty soils will feel smooth, and sandy soil will feel rough and gritty.

The ribbon test: again involves wetting your soil to a putty-like consistency and attempting to "ribbon" or push the soil into a ribbon shape between your thumb and the inner por-

tion of your index finger. Sandy soil will not form a ribbon, silty soils will form a weak ribbon, and clay soil will form a sturdy long ribbon.

Advanced Soil Testing

Ever wonder why your gardens or flower beds don't reach their full potential? Simple, do-it-yourself testing kits are available at most local home stores to determine if you have soil lacking any soil nutrients. Cass County Soil Conservation District has this basic testing available FREE of charge to county residents. For more specialized technical testing, soil samples may be sent to a certified lab for analysis. North Dakota State University offers advanced soil testing in their lab for a charge of \$18. Testing done through Cass County SCD or NDSU will come with recommendations to remediate your soil back to healthy levels.

Soil Problems and Solutions

Compacted soil is a result from construction or foot travels that has pushed all the space within the soil for air and water out. The consequences of compacted soil include slow water infiltration resulting in standing water and the inability for plants to absorb needed nutrients and water. Digging up and fluffing the soil

Find out what type of soil you have on the NRCS Web Soil Survey at:

<http://websoilsurvey.nrcs.usda.gov>

Understanding Soil Cont.

is one way to loosen compaction. Another option is to lay organic products such as mulch and compost on top of compacted soil.

Erosion is the result of unprotected soil exposed to weather elements like wind and water. Barren soil when exposed to stormwater may be washed away. Wind also plays a significant factor in our area. Wind has the ability to carry our soil away if left unprotected. To minimize the effects of erosion cover exposed areas of soil by planting native tree and plant species. Native species are important for their vast root system. Native grasses, for example, in comparison to a typical turf grass may have a root system nearly 50 times longer. The longer roots a plant has the more capable it is of holding on to the soil and reducing erosion. Applying layers of mulch is another way of reducing erosion caused by water and wind and also keep soil temperatures cooler on hot days and retain more moisture.



Top: Wind erosion on a field in NW Cass County
Bottom: Wind erosion on a field in Cass County

Basic Soil Testing at CCSCD



Composting



Composting is the process of utilizing food scraps and yard waste to create a nutrient rich soil for use in flower beds and gardens. This soil is rich in macro-nutrients such as nitrogen and phosphorous and also has a high population of beneficial microbiota. All of these things will benefit and improve the growth of your plants.

There are a few do's and don'ts along the way. First, You need to have the correct mixture in your compost. A ratio of 4 browns to 1 green, air, and water is the perfect recipe for a successful compost pile.

What are browns and greens? These are simply the items you will be placing into your compost pile. Some examples of browns include; straw/hay, sawdust from non-treated wood, egg shells, small twigs, leaves, and napkins or shredded paper. Examples of greens include; Fresh food scraps like bread, peels, rinds, grass clippings without pesticides/herbicides/fertilizers, plants, moldy/stale bread, coffee grounds/tea leaves, and leftovers without meat or oil. The following items can attract pests, generate foul odors, or contaminate the compost and should never be used; meat, bones, pet feces, charcoal ashes, pine needles, weed plants/seeds, sick or diseased plants, or treated wood.

Air and water have an important role in the composting process as well. Air is essential and you can easily make sure there is plenty of air by turning/flipping your compost around routinely. Water should be about 40-60% of your pile. Water ensures the microbes have an optimal environment, but too much water can displace the air you've worked hard to keep incorporated in the pile. To make sure you don't have too much or too little moisture, squeeze your compost it should have a moisture level similar to that of a squeezed out sponge.

What type of container or bin to do you use? There are many different types of DIY compost bins out there. Compost tumblers, and other sorts of bins can be made using food grade plastic barrels (55 gallon size is recommended), wire with a support system, pallets or other wood materials, and even cement or landscape block may be used. First you need to decided what type of system is most appealing to you. The most common system and the type that utilized the least amount of outdoor space is a single pile system contained within a barrel or similar type of structure. With this method, at least in our neck of the woods, a single batch of compost can be completed per year. The other option is to have a multiple pile system. What this means is that you utilize a con-

Composting Cont.



tainer system that has 3 or more individual spaces within it. This allows more of a sorted process. The first section would be for you to place fresh compost materials in to build a pile. The second section would be for compost that is actively in the process of decaying. The last section is for compost in its final stages of completion. This type of process allows you to

keep moving a single compost pile from one stage to the next, and therefore allowing you to be making more than one batch at a time.

There are multiple benefits to composting, one of which is reducing the amount of trash sent to our rapidly filling landfills. By creating your own compost to use you are in control of what goes into your soil. Composting saves money by reducing the need from fertilizers and reduces trash costs. Lastly, it's earth friendly, promotes healthy soil and is easy, everyone can do it!

How to be an active composter? Patience and diligence is key. Make sure to be turning your pile every 5-7 days and add water as needed. Make sure the pile reaches an internal temperature of about 140 degrees in the first couple of weeks. After 4 weeks the pile should cool down to around 100 degrees and maintain this temperature for the next 4 weeks. At about 8 weeks the pile will no longer heat up after you turn it, and the overall volume will be about one third the original size. At this point allow the pile to cure, or sit without turning for 4 more weeks before using the compost. You will know when the compost is done as it should have an earthy smell and the texture is loose and crumbly. You should also not be able to recognize any of the organic material that went into the pile and the color should be a nice dark brown.

Finished compost works great as a soil amendment to improve soil health when mixed into the top 4-6" of soil. It will also loosen soil compaction in our heavy clay soils, therefore increasing drainage. The finished compost also works great as part of a soil mixture for house plants. Mix an equal amount of compost with potting soil. And of course using the compost in your gardens is the most popular way of using your finished compost.

Want to make one of your own? Don't know how to? **Attend one of our "Build Your Own Compost Tumbler" workshops!** Attend the workshop to learn all about composting and build your own to tumbler to take home. See all our events and workshops here for more information:

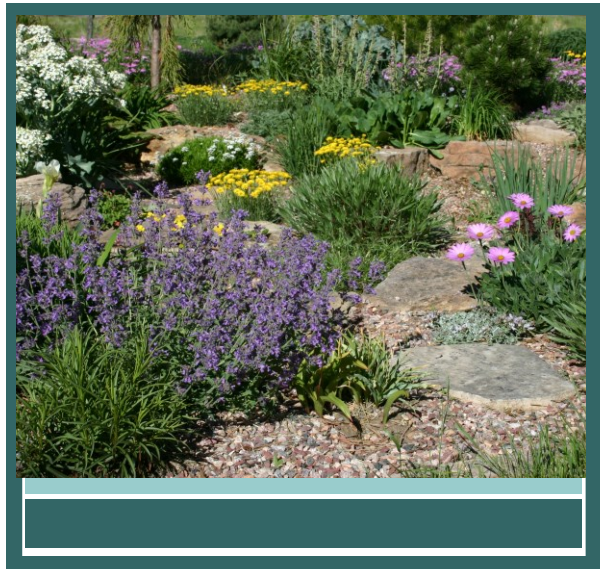
www.facebook.com/CassCountySoilConservation

Xeriscaping

We come from a land that once was covered by native prairie grasses and flowers. These native species are very tough and adaptable to harsh environments, some more than others, but nevertheless these guys are tough cookies! Much like animals plants of various species have varying requirements for survival. For instance some plants can tolerate more water, or periods of flooding, better than other can, and on the contrary some can handle periods of drought very well.

Xeriscaping by definition is using plant species in a landscaping design that are drought tolerant. This is a very common practice in the southern United States, places like Arizona, where rain and moisture can be tough to come by. However, this practice has begun to make appearances all across the country for environmental and maintenance reasons. Having a landscape that can tolerate periods of drought make caring for it easy. Little to no watering is required! That's good news for you, as that's less time spent doing yard work and less money spent on the water bill. In addition you are conserving water which alone is a great benefit, but also think of the potential for excess water to run off while watering. This excess water is a waste, and can collect different types of pollutants while heading towards the river or other local waterbodies.

Xeriscapes can be planted with many different types of grasses, flowers, trees, and shrubs. When selecting plant species keep in mind their light and water needs. While planting group plants with similar needs and place plants in smart locations, ex. plants that need more water should be planted by a downspout. Lastly, MULCH! Mulch is essential for keeping the soil and roots cool, reducing the amount of water plants lose through evapotranspiration, it helps prevent weeds, and helps reduce erosion.



Pocket Prairie Initiative

Native plant species once covered this now largely manufactured area; what once was beautiful prairie land with roaming buffalo is now urbanized with roads, noise, pollution, buildings, and lots of people. The Pocket Prairie Initiative mission is to restore urban land back to native prairie. We are looking for participants who have an area of turf grass, or unutilized land that will not be developed within 5 years or more, who are wanting to restore their area back into a beautiful native planting with grasses and flowers. There is no size requirement to be qualified for a pocket prairie.

Native plantings can be tough to understand at first. While most plant species and flowers we are all used to grow and bloom beautiful flowers within a short period of time after planting, some even bloom at the time of purchase. Natives, however when planting from seed are a bit of a different story. Natives spend a lot of time focusing their growth below ground before much happens above ground. Native plants have massive root systems, some reaching over 12 feet below ground, which is the reason they are so great for the environment. However, it takes time to grow such vast root systems, with the trade-off being above ground growth. While this is happening the opportunity for weeds to sprout from the freshly planted area is high. Thus, during the first 1-2 years of a native seed planting the site can often times look less than appealing and maintenance is crucial for a successful planting. Over the course of the next couple years the natives will become established with amazing root systems and begin focusing its growth above ground, gradually overtaking the area and out competing any other weeds. By year 3 one's patience will pay off, the native planting will begin to look like a flourishing garden of native foliage.

The pocket prairie will attract all sorts of pollinators, bees, butterflies, birds, and more. Depending upon your location other wildlife such as deer may also be attracted to your area. That is not the only benefit however, the native planting is great to help with infiltration, reducing compaction, reducing erosion, and reducing/filtering of pollutants carried by runoff.

There are all sorts of locations for these wonderfully hidden pockets of prairie in our urban community, as well as rural areas. Residential areas may include a section of one's front or back yard, or perhaps along a garden or in an existing flowerbed. Businesses can also participate, a native planting around your business' sign, around the parking lot, or along a building can be very attractive. City/public land has lots of great opportunity as well including in road medians or roundabouts, along buildings, signs, ditches, bike paths, parks and much more.

What if none of these above mentioned categories fits you? Participate by suggesting a site location to us of where you would like to see a Pocket Prairie sprout up. **Contact Cass County Soil Conservation District at 701.282.2157 x3** to get your own or with location suggestions.



Weed Management

Weeds can be a nuisance for any gardener or property owner in general and some more than others. Without proper management weeds can get out of control and spread from one spot to the next eventually covering entire areas. Help control weeds in your community by knowing proper management techniques.

What is a weed?

A weed is any unwanted plant growing in area. We all have an idea of what a weed is an unsure a few specific ones come to mind. What most don't realize is that a weed is, as mentioned before, any plant that is growing where it is not desired. This means that flowers and volunteer veggies from last years garden can at times be classified as a weed! Typically though, a weed is something that is tough to get rid of, it is a persistent plant that just doesn't want to go away. Usually we get little to no benefit from these species. A *noxious weed* is a weed that can cause harm to agriculture, animals, water and/or humans. These noxious weeds are mandated by the state to be controlled/eliminated by the landowner to the best of their abilities. *Invasive weeds* are those that are introduced to our area from other areas in the county or even world and they outcompete our native species for survival.

Weed Prevention

Prevention is the most economical way and requires the least effort to manage weeds. Did

you know that some of our most persistent weeds started as a plant introduced intentionally as a decorative landscaping feature? This is avoidable by being careful what we use landscape choices, one can never go wrong using the beautiful native species that are meant to be here!

The best way to prevent weeds is to provide strong competition from desirable plants. Perennial or even annual plants that are strong and healthy will compete for sun, water, nutrition, and space which will help reduce weeds. Another option is to use a cover crop or keep your garden planted with something at all times. Again, the same mentality is here where those more desired crops will outcompete the weeds. Lastly using mulch or other methods such as fabric over your gardens and flowerbeds will also make it much more difficult for weeds to grow.

Control

The majority of weeds can be controlled mechanically, biologically, or chemically. Mechanically control weeds by physically pulling or destroying them your self with either your hands or with the assistance of tools such as hoes, rakes, and even mowers. Biological control is the use of animals, disease, or insects that specifically target the weed you are trying to remove. Ex. The flea beetle specifically targets leafy spurge to feed on, in doing so eventually the beetle will destroy so much of the plant it will die off. Lastly, chemical control

Weed Management Cont.

through the use of herbicides. Although this can be a very effective method, however may only be a temporary solution and should be the last resort as it can come with a few drawbacks. First, most at-home applicators are not properly trained, nor do they tend to strictly follow the application instructions. The result can be damage or death to unintended plants and excess chemical laying around leading to pollution that is then collected by stormwater runoff and deposited into our local water sources.

ND Noxious Weeds

There are currently 10 noxious weeds in North Dakota. Learning about these species and how to identify them are an important part of being able to spot them early and control them within our community.

Absinth Wormwood (*Artemisia absinthium*)

Canada Thistle (*Cirsium arvense*)

Dalmatian Toadflax (*Linaria genistifolia*)

Diffuse Knapweed (*Centaurea diffusa*)

Leafy Spurge (*Euphorbia esula*)

Musk Thistle (*Carduus nutans*)

Purple Loosestrife (*Lythrum salicaria*)

Russian Knapweed (*Acroptilon repens*)

Saltcedar (*Tamarix chinensis*, *T. parviflora*, *T. ramosissima*)

Spotted Knapweed (*Centaurea maculosa*)

Yellow Toadflax (*Linaria vulgaris*)



Canada Thistle (left)



Leafy Spurge (right)

Keeping up on Weeds:

Information on ND's noxious weeds along with others specific to each county can be found online along with images and more information on each.

<https://www.nd.gov/ndda/program/noxious-weeds>

Weed Management Cont.

Nine common backyard weeds:



Common Dandelion



Purslane



Pigweed



Ragweed

BE CAREFUL Ragweed closely resembles goldenrod, a desired plant which is a yellow flowered plant that's great for pollinators. Ragweed has very deeply lobed leaves



Broadleaf Plantain



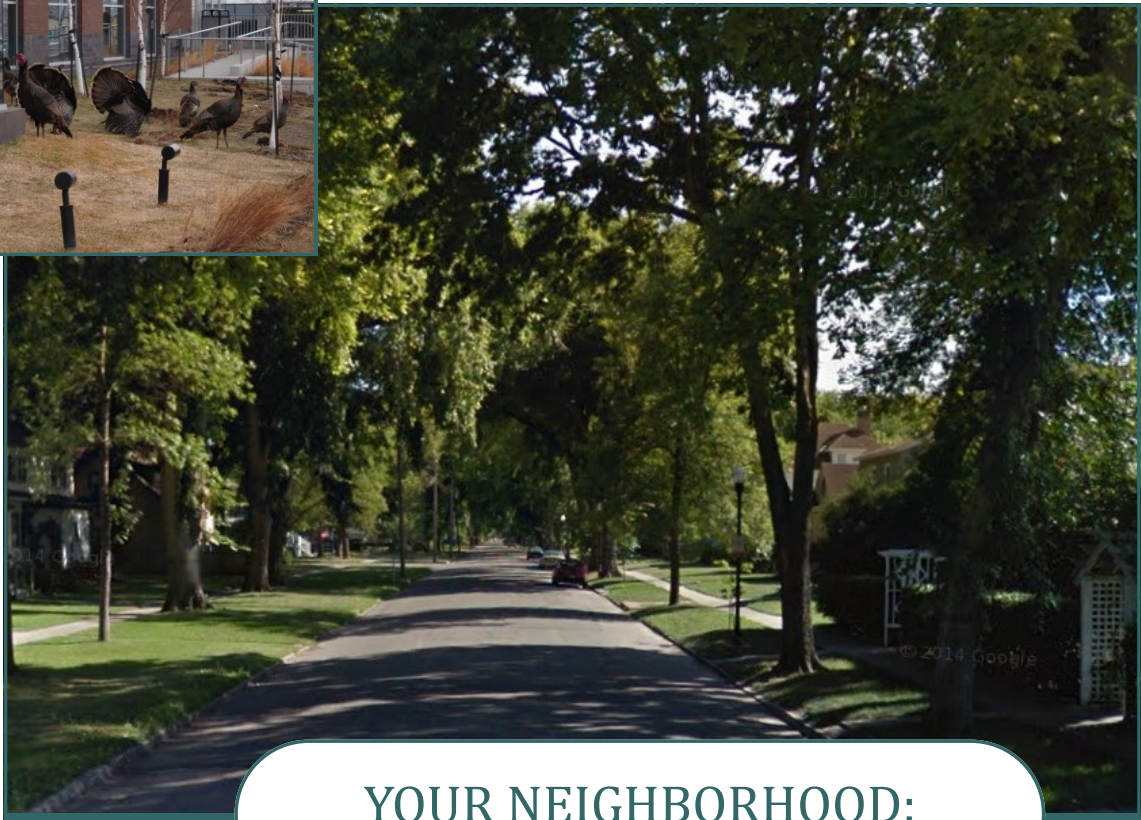
Yellow OR Green Foxtails



Crab Grass and Quack Grass



Lambs Quarters



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Trees and Urban Forests

Our community in terms of landscape, is largely flat, and open, where one can see for mile and miles. However, in our urban setting we live in an urban forest. The trees in our neighborhoods, parks, and backyards all make up a community or urban forest and play a very important role.

Benefits of Urban Trees:

- Economics— each tree in our yard and in our neighborhood adds value to our houses and property. Research has shown that business areas that have healthy trees invite people to linger longer and spend more.
- Aesthetics— Trees, especially mature trees and much beauty to our community.
- Environment— Trees absorb atmospheric carbon dioxide in their tissue, reducing the amount of emissions in the air. Trees also work to remove major pollutants from the air, such as dust and other particulates that cause respiratory illnesses. The pollutants that trees remove lead to better water quality, thus reducing the costs of good clean water.
- Personal Health— Trees provide us with an abundance of oxygen. 1 mature tree can support the lives of 5 people. Trails, walking paths, and inviting landscapes can encourage physical activity.
- Heat— Trees provide shade for wildlife as well as humans. Shade helps to keep us cool and also helps keep indoor temperatures cooler.
- Water Quality— trees along streets and in

yards absorb thousands of gallons of stormwater runoff, water that can collect and carry many types of pollutants to our local waterbodies.

- Wildlife— trees of course provide food and shelter to all types of local wildlife including birds, insects, and wildlife.

Get Involved with Trees:

Within Cass County and specifically Fargo there are many ways to get involved and improve the community. One way is by planting trees. Many local organizations partner together to host some really great tree plantings.

Arbor Day

Each year Fargo Parks Department, along with many others, host an Arbor Day Ceremony which is typically on the second Friday in May each year. On this day local schools bus kids to a predetermined site that needs trees. Kids learn about trees from guest speakers during the ceremony. Following the ceremony the kids breakout into groups and begin planting roughly 100 container trees of varying species.

Reforest the Red

This event held each April, is a great opportunity for anyone in the community. Multiple local organizations partner up for this

Trees and Urban Forests Cont.



volunteer based tree planting. Each year a goal of 1000+ trees is set for planting along the riparian area of the Red River. A great educational station is set up for

Learn More

On North Dakota State University's website you can find great information on tree ID, diseases, and how to plant different types of trees: <https://www.ag.ndsu.edu/horticulture/trees-and-shrubs> NDSU also has a great tree handbook where again you can learn specifically about many different tree species and more: <https://www.ag.ndsu.edu/trees/handbook.htm>

adults and children with information and activities. Free hotdogs and Pepsi products are served to all who attend!

Plant a tree or an entire forest!

Cass County SCD offers conservation grade trees for sale each year. Pre-order is required for pickup in May. Come into our office and visit with our technician to learn which of our 60+ different species will be best suited for your location. Plant them yourself or hire us to do so.



Backyard Wildlife

Even in an urban setting one can enjoy nature and wildlife. Of course there's the normal wildlife, rabbits, robins, squirrels, etc. that are common in an urban setting. However, here even in the heart of Fargo, we can spot various kinds of non-typical wildlife including everything from geese and turkeys, to deer, beaver, and raccoon.

Creating Good Wildlife Habitat

It's easy to help increase the amount of wildlife habitat by making a few simple changes to your backyard environment. Remember food, water, cover, and space are the ingredients to a great habitat. These can be accomplished by having a diversity of plants that include various heights, colors, and blooming periods. The species you select will determine the type of wildlife drawn to your location. Plants that have berries and seeds will attract birds, deer, and other small mammals, while forbs and grasses will attract pollinating species. Having a water source near by is also very important. Anything is better than nothing, a small pond, stream, or bird bath are all great options.



Most neighborhoods already have some sort of water, or water feature already in them.

Dead or Downed Trees and Logs

Winds in our area tend to be fierce and as they come and go they leave behind evidence, downed trees and logs. While most people tend to their yards and properties picking up fallen trees, logs, and branches, next time consider leaving them or at minimum relocating them to a more desirable place rather than getting rid of them completely. Why? Over 80 different reptiles, amphibians, mammals, and birds rely on these for shelter from the environment, cover from predators, and for nesting purposes. Perhaps you do not have any trees or logs to use in your yard, build bird houses and boxes.

Pollinators

Bees, butterflies, birds, beetles, and other insects are pollinators. Most plants rely on them for reproduction, including our crops. 1/3 of our food sources rely upon pollinators for survival. Unfortunately many of our pollinators are in decline. Help them out by providing nesting sites, and by choosing plants for your yard that will provide them with food and shelter. Cass County SCD can help you with choosing all the right plant for a pollinator garden. For more general information on pollinators contact the Xerces Society (www.xerces.org).

Nuisance Wildlife and Insects

Backyard Wildlife

At times wildlife can appear in undesired places. There are a few things you can do to minimize these occurrences around your property. First, feed your pets inside, pick up fallen fruit from trees/shrubs, remove accumulated bird seed, control odors from compost bins and trash, and consider fencing options for garden areas. For nuisance insects like mosquitos make sure you have no standing water around that is not covered with a lid or tightknit netting. Mosquitos breed in standing water and are able to hatch within 7 days of eggs being laid.



Make Your Own Bagel Feeder

Have old bagels you wont eat? Instead of tossing them out turn them into an all natural bird/ squirrel feeder.

1. Take an old bagel and spread some SunButter butter across it
2. Dip the bagel SunButter side down into a pile of bird seed
3. Take a small piece of twine or rope and tie it around the bagel
4. Hang it from your favorite bird viewing spot



Riparian Areas

A riparian area is the area of trees and grass that is along a lake, stream, and river. Its more than just trees and grass though, it serves a great purpose!

Benefits

The native species that grow within a riparian area have a deep growing root system. Some species can grow roots well over 12 feet deep! The deep root systems help with compaction and infiltration of water. This alone helps reduce the amount of water that ends up into the waterbody. This can be important in 2 ways, first during periods of flooding any amount of water that can be absorbed back into the ground is beneficial. Secondly, water that is draining towards anybody of water has the potential to collect sediments and pollutants. Riparian areas have the ability to trap sediments and filter pollutants, therefore improving our water quality. Riparian areas also serve as a habitat for many different wildlife species, providing them with food, water, shelter, and nesting areas. Riparian areas also provide oxygen for breathing and organic matter in our soil. Lastly, they're aesthetically pleasing, and people tend to migrate towards them.

Riparian Damage

As beautiful and important as riparian areas are they are slowly becoming destroyed by humans. The construction of bridges, roadways, houses, parks amongst other things can require acres of riparian area to be altered or taken out altogether. Mowing, livestock, and farming are other things that also lead to riparian area damage. As we mow or allow livestock to freely enter riparian areas and bodies of water they trample and damage the living plants. The plants then focus all their grown above ground to reestablished the growth that had been damaged. During this process the root system suffers, and we begin to loose the many benefits of our riparian areas.

Riparian Health

To ensure adequate riparian health we want to make sure livestock are fenced out of the riparian area, farmers are careful about their chemical drift during application of herbicides, mowing is ceased at least

Livestock Damage



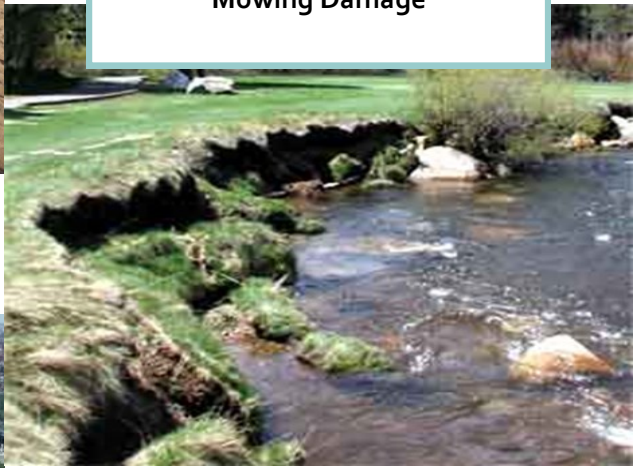
Riparian Areas

25 feet from the banks of the water, and construction is mitigated with new grass and tree plantings. Lastly, restore and add on to current riparian areas. 50 feet added to a riparian area can help trap sediment and reduce erosion, 100 feet can reduce pollution, trap sediment, and reduce erosion, and 200+ feet can create wildlife habitat in addition to reducing pollution, trapping sediment, and reducing erosion.

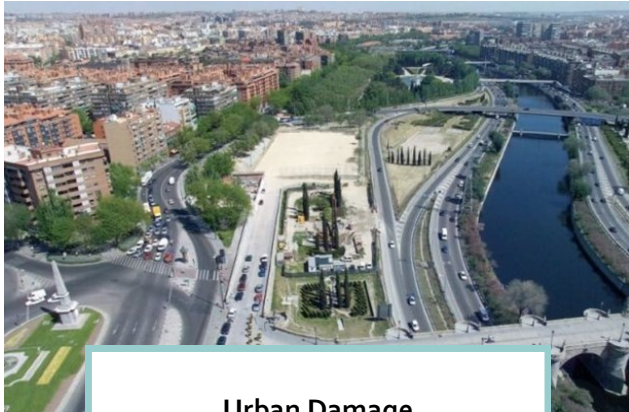
Pollution Damage



Mowing Damage



Urban Damage



Water Quality

The water we drink and the water quality is greatly influenced by each of our daily lives and activities and the steps each of us takes to preserve it.

Pollution Types

There are two types of pollution; point source pollution and non-point source pollution. Point source pollution comes from a known source that is directly emitting or depositing into our environment/water. Ex. a treatment plant that dumps sludge into the river, or a factory emitting chemicals into the air through its chimney. As stormwater (rain or melting snow) moves across the landscape it crosses both pervious and non-pervious surfaces collecting pollutants along the way. Pollutants like; fertilizers, grass clippings, soil, and pet feces from yards, parks, and golf courses, trash, cigarette butts, and vehicle fluids from streets, parking lots, and driveways. Each of these pollutants are considered non-point source pollution, they are collected from many places by stormwater runoff (a non identifiable source) and carried to a local body of water.

Help Keep Runoff Clean

Making small adjustments around your property and to your lifestyle can help keep runoff clean and improve water quality.

Rain Harvesting

As talked about in the first section of this handbook, harvesting rain water with the use of a rain barrel is not only beneficial for the environment by reducing stormwater runoff and reducing the usage of city water, but the rain water is extremely beneficial for your plants!

Pervious Surfaces

Pervious surfaces are surfaces that allow water to infiltrate the ground. Driveways, sidewalks, parking lots, patios, and streets can all be constructed using pervious materials. Pervious materials such as bricks, pavers, gravel, and now a pervious concrete! Cost-share is available for your pervious surface projects!



Water Quality Cont.

Green Roofs

A flat top building has excellent potential for a green roof. A green roof is essentially creating a growing space on the roof of a building. A special layering recipe using infiltration media is used to create a roof that allows stormwater infiltration to penetrate through and also serves as a host for growing plants. There are some really great benefits including reducing the building's energy usage by up to 20%, reducing the amount of storm water discharge, absorbing pollutants, increasing insulation and increasing the bird population. There are a few of these roofs sprouting up within our community; the HoDo, Starion Financial, 102 Broadway, and 300 Broadway. Cost-share is available to any Cass County resident or business who's interested in installing a green roof!



At Home Tips for Water Quality

- Apply chemicals carefully and properly. Always follow the label on the packaging for proper application directions.
- Pick up pet waste as soon as possible
- Properly dispose of yard waste
- Properly dispose of unwanted chemicals and paints
- Have regular automotive checkups to prevent and locate leaks
- Wash Vehicles at a commercial car wash or at the very least in the lawn
- Clean up any vehicle or chemical spills immediately
- Do not dispose of anything down the storm drains
- Participate in river cleanup activities



Gardening

Growing your own herbs and veggies is something many desire. There's just something about not only watching your hard work grow but knowing exactly what chemicals or lack thereof have been used on what you're going to eat. Not everybody has the room for their own garden though, but don't worry there are still options for you!

Bale and Pallet Gardening



Have limited space or a concrete surrounding? Give bale and pallet gardening a try! Bale gardening is using a straw bale for growing almost any type of vegetable, herb, or flower. Simply condition the bale with water and a nutrient rich fertilizer once a day for a week, then every other day for another week prior to planting. Dig a hole just deep enough for the plant and a little bit of soil. Place soil and the plant into the hole and then water. That's all there is to it. A pallet garden requires stapling a heavy duty

landscaping fabric on all side of the pallet, except leaving the top open for planting. Pack soil into the pallet until its level with the top. Plant transplants or seeds into the soil, water, and let it grow, it's that simple! In the end you have used limited space and still get to enjoy your very own fresh produce!

Community Gardening

Another option for being able to grow your own fresh produce while not having to compromise your own space is participating in a community garden. In Fargo alone there are over 10 community gardens throughout town to participate in, visit the City of Fargo's website (click on departments—> metro in motion —> and finally eat smart) to find out the different locations and the contact person for each. (<http://www.cityoffargo.com/CityInfo/Departments/Health/Resources/MetroinMotion/EatSmart/2016CommunityGardens.aspx>)

Local Farmer's Market

If all else fails there are always the local farmer's markets you can rely on for fresh, local produce. The Northern Plains Botanical Garden Society has partnered with West Acre's Mall to have a farmer's market on the northwest side of the mall, open Tuesdays, Thursdays, and Saturdays from 10AM-5PM. Expect to find much more than produce however, jelly, donuts, lefse, BBQ sauce, bakery items, and fresh meat are all things you can expect to find. It's a great way to meet local producers, get quality fresh food, and support local businesses.

Urban Conservation Cost-share Program

In an effort to enhance urban conservation efforts within our community, Cass County Soil Conservation District is offering a cost-share program for anyone in Cass County who is interested in utilizing urban conservation practices. Cost-share grants will be awarded to landowners and organizations until cost share funding for each practice has been exhausted for the fiscal year. This program provides 60% of approved costs, unless noted other wise, associated with implementing particular conservation practices up to a maximum dollar amount (see rate table). Landowners that can be better covered by other programs within the District or NRCS will be referred as needed.

Cost-share Rates

Practice	Cost-share	Maximum
Rain Barrel & Composting Systems	60%	\$100.00 max
Pervious Paving	60%	\$1,000.00 max
Pocket Prairie	Up to 75%	\$500.00 max
All Other Practices	60%	\$500.00 max

Practices Covered

Water Conservation Home Systems

- Community education course and materials for first rain barrel or compost tumbler
- Adding on to existing rain barrel or compost tumbler system

Forestry Conservation Practices

- Arboretum
- Living snow fence

Alternative Landscape Practices

- Rain garden/Bioswale
- Xeriscape

How to Apply

Applications are accepted on a continuous basis. For application materials, visit the urban tab on our website at www.cassscd.org. Application materials can also be obtained by contacting us at,

Phone: (701) 282-2157 x 3 or Email: ashley.fisk@nd.nacdnet.net

Although we provide multiple avenues of assistance; installation, labor, and maintenance work including all liabilities are the responsibility of the customer. Customers should expect to provide 40% down payment of the project cost up-front. Funded practices should be installed within the growing year and should be maintained for at least five years. In the event the practice is removed prior to 5 years, a prorated amount of the original cost-share amount is to be paid back to the District.

- Pollinator garden or pollinator habitat improvement

- Low mow turf grass planting
- Plantings using native grasses/flowers
- Pocket Prairie Initiative
- Pervious paving (block or concrete modular pavers; grid pavers)

Urban Riparian Area Improvement Projects

- Native planting for riparian forest improvement including bank stabilization and habitat improvement projects

Other Practices May Be Eligible on a Per Case Basis

Resources

1. Jackson County Soil & Water Conservation District. "Jackson Soil & Water Conservation District's." *A Resource for Jackson County Living and Stewardship* (Feb. 2011): 1-53. Jackson County Soil & Water Conservation District. Jackson County Soil and Water Conservation District. Web. Summer 2016. <https://jswcd.org/download/jswcd_publications/Urban%20Living%20Handbook%2002032011.pdf>.
2. City of Fargo. (2013, March 31). Stormwater Management Program [Editorial]. Retrieved January 6, 2016, from City of Fargo website: <http://www.cityoffargo.com/CityInfo/Departments/EngineeringStormSewerUtilities/StormWaterManagementProgram/>
3. WDAY. "Fargo Landfill to Go through a Major Renovations." WDAY. N.p., 02 Feb. 2016. Web. 01 Aug. 2016.
4. "Recycling Services For Home." *Residential Recycling Services. Electronics, Plastics, Cardboard & Metals*. N.p., 2016. Web. 04 Aug. 2016. <<http://www.wm.com/recycling-services/home.jsp#recycle-bucket>>.
5. "Fargo Recycles! - City of Fargo." *Fargo Recycles! - City of Fargo*. N.p., 2016. Web. 04 Aug. 2016. <<https://www.cityoffargo.com/CityInfo/Departments/SolidWaste/Recycling/>>.
6. East Otter Tail Soil & Water Conservation District. "Native Plant Guide." (n.d.): 2-9. *East Otter Tail Soil & Water Conservation District*. Web. 13 Oct. 2016.