

The Problem

Many individuals prefer to, and often enjoy, performing their own vehicle maintenance: changing the oil or brake fluid, installing a new battery, or washing and cleaning the car on a summer day. This maintenance is not limited to cars. We work on our trucks, boats, RV's, snowmobiles, lawnmowers - all of those motorized tools and toys we own today.

Why are these common maintenance practices a consideration in a stormwater management program? The maintenance work is not a problem, but the by-products that result from this work, if not properly disposed of, can add significant amounts of pollutants into our storm drain system. Storm drain systems do not flow to a treatment plant, rather water traveling through a storm drain is released directly into our creeks, our natural drainages, and the North Platte River.

The by-products of vehicle maintenance: (oil, grease, brake fluid, gasoline, diesel, kerosene, antifreeze, etc.), all contain hydrocarbons, trace metals, and other pollutants that are harmful to fish and birds, aquatic vegetation, wildlife and humans. Hydrocarbons can even kill the trees and bushes growing along the stream banks, which can cause them to erode.

Washing cars, trucks, boats, and other motorized vehicles in the driveway and allowing the water to run into the street and then into the storm drain transports many of the same pollutants: hydrocarbons, trace metals, and nutrients.



The Solution

To reduce the impact of car wash runoff, use only biodegradable soap. Wash the vehicle on gravel, grass or other permeable surface that allows the water to be dispersed and absorbed slowly.

Collect, contain, and recycle used motor oil, brake fluid, antifreeze, grease and other vehicle fluids. Purchase only the quantity that you can easily use to avoid prolonged storage. Discard only the completely empty automotive product containers in the trash.

WATERSHED COALITION PARTNERS

Casper College • City of Casper • Natrona County • Town of Evansville •

Town of Mills • Wyoming Department of Transportation

For Stormwater Information

visit www.casperstormwater.com or www.casperwy.gov

Call the Stormwater Hotline: 307-235-8283

At-Home Vehicle And Equipment Maintenance



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We All Live Downstream

Special Waste and Diversion Facility

The City of Casper's Special Waste and Diversion Facility was established to assist citizens in the disposal and recycling of unwanted, leftover or used household and automotive products. When these products are properly disposed of or recycled, their potential to create health hazards or negative impacts on our water is diminished.

The Special Waste and Diversion Facility is located at the City of Casper Balefill Facility, just off Metro Road. It is open to all citizens of Natrona County. There is no charge for disposing of or recycling hazardous household materials.



**Citizens
wanting
to recycle
automotive waste
should call to
schedule a drop
off time.**

Call: 235-8246

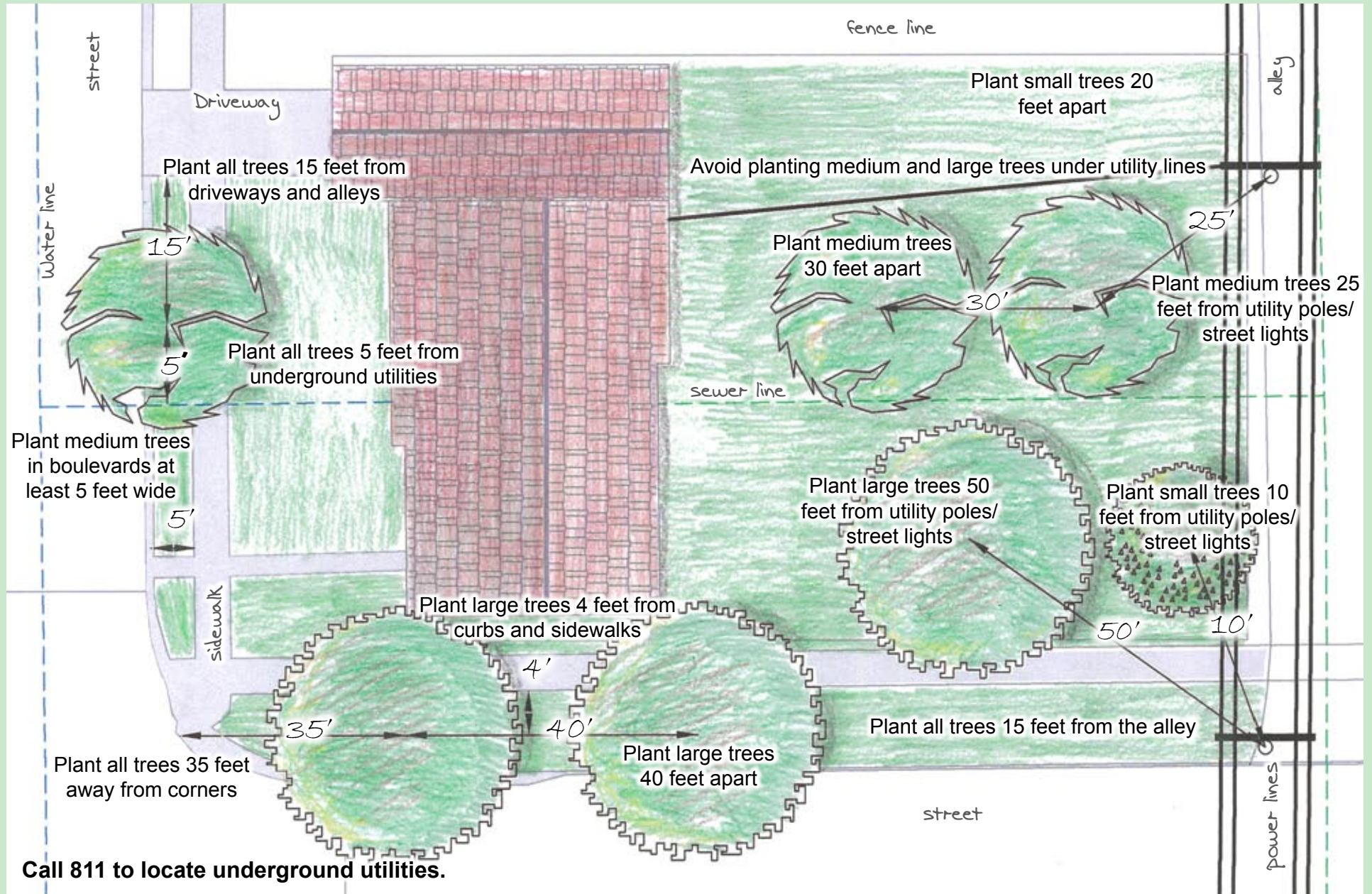
*Drop offs are 9:00 a.m. through 4:00 p.m.
Friday (Commercial Business) and
Saturday (Residential)*

<i>Product</i>	<i>Safe and Proper Disposal</i>
Antifreeze	Antifreeze can be reused by simply filtering it through a coffee filter. Place dried filter containing antifreeze residue in trash. Do not dump antifreeze (new or used) into sewer, storm drain or onto ground.
Auto Batteries	Trade in used batteries when purchasing a new one, take used battery to a salvage yard, or take to the Special Waste and Diversion Facility at the Casper Balefill.
Auto Paint And Primers	Spray and use all product, then place empty container in trash or take to the Special Waste and Diversion Facility at the Casper Balefill.
Brake and Transmission Fluid	Use all product, give unused portion to someone else to use, or take to the Special Waste and Diversion Facility at the Casper Balefill.
Carburetor Cleaner	Use all product, give unused portion to a local service station to use, or take to the Special Waste and Diversion Facility at the Casper Balefill.
Engine Cleaner and De-greasers	Use all product, give unused portion to a local service station to use, or take to the Special Waste and Diversion Facility at the Casper Balefill.
Gasoline, Diesel and Kerosene	Use old product as engine fuel for lawn mowers, small engines or outboard motors. Strain old gasoline through a paint filter, dilute by half with fresh gasoline and use as new gas.
Motor Oil	Do not dump into sewer, storm drain or onto ground. Do not place in the trash. Take to the Special Waste and Diversion Facility at the Casper Balefill.
Used Motor Oil Filter	Allow excess to drip into a collection container and recycle the oil collected. Wrap the drained filter in newspaper and place in the trash.
Windshield Washer Fluid	Use all of product.

To reach the facility, take Bryan Stock Trail north from Interstate 25 to Metro Road, turn right and follow the road into the Balefill gates. An attendant will assist you at the gate.

Plant the right tree in the right place.

Make your tree planting plan for mature trees, like those pictured below. Measurements should be from the middle of each tree. This promotes healthy growth and will prevent conflicts in the future.



Call 811 to locate underground utilities.

See reverse side for recommended tree species for the Casper area

Recommended Tree Species for the Casper Area

Large Trees (50 feet + in height and spread at maturity)

Green Ash	White Ash	Marshall Seedless Ash	Autumn Purple Ash	Patmore Ash
Fall Gold Ash	Cimarron Ash	Paper Bark Birch	Weeping Birch	▲ Whitespire Birch
Colorado Blue Spruce	+ Sensation Boxelder	▲ Yellow Buckeye	Northern Catalpa	Kentucky Coffeetree
Seedless Kentucky Coffeetree	+ ♦ Narrowleaf Cottonwood	+ ♦ Native Cottonwood	Accolade Elm	White Fir
Subalpine Fir	▲ Douglas Fir	Hackberry	Honeylocust	Shademaster Honeylocust
Imperial Honeylocust	Skyline Honeylocust	American Linden	▲ Black Hills Spruce	Bur Oak
Swamp White Oak	Ponderosa Pine	Scotch Pine	Limber Pine	Austrian Pine
▲ Northern Red Maple	Norway Maple	Autumn Blaze Maple	Black Walnut	

Medium Trees (30 feet - 50 feet in height and spread at maturity)

♦ Quaking Aspen	+ ♦ Lanceleaf Cottonwood	Ohio Buckeye	Black Locust	+ ▲ ♦ Highland Cottonwood
Purple Robe Honeylocust	Peking Lilac Tree	Little Leaf Linden	Redmond Linden	Amur Maple
Oakleaf Mountain Ash	▲ European Mountain Ash	Tower Poplar	Fat Albert Spruce	+ ▲ ♦ Laurel Leaf Willow
+ Black Willow				

Small Trees (less than 30 feet in height and spread at maturity)

Tatarian Maple	Amur Chokecherry	Amur Maakia	Thunderchild Crabapple	Dolgo Crabapple
Spring Snow Crabapple	Gambel Oak	Princess Kay Plum	Shubert Chokecherry	Hawthorn
Ivory Silk Japanese Lilac Tree	Evans Bali Cherry	Sungold Apricot	Moongold Apricot	Scout Apricot
Montmorency Cherry	Golden Jubilee Peach	Reliance Peach	Bristlecone Pine	Pinion Pine
Mugo Pine	▲ Prairie Gem Pear	Mayday Tree	Thinleaf Alder	Serviceberry
▲ Arborvitae				

▲ Species indicated may require special care or maintenance, specific planting conditions, and/or site conditions for survival.

+ It is against City of Casper ordinance to plant any willow, cotton-bearing cottonwood trees, and/or any female boxelder tree in public places, such as Boulevards.

♦ Cottonwoods, Aspens and Willows should be planted no closer than 50 ft. to underground water and sewer lines.



City of Casper
Public Services Department
(307)235-8281
<http://www.casperwy.gov>



Recyclable in the white paper bin at your
community recycling depot

This place is going to the dogs... and we love it!

The City of Casper operates two off-leash areas for dogs to play, socialize, and just have fun! The Parks Department does not remove dog waste and it's the responsibility of all owners to pick up after their pet.



Lake McKenzie Dog Park

1691 Bryan Stock Trail

The fenced in dog park features a double gated entry at both parking lots, dog drinking fountain, hoses to clean mud off dogs, benches, a porta-john, and a special swimming area near the lake.

Hours: The park is open from 6 a.m. to dark. The park is not lighted

Morad Park Off-Leash Area

Wyoming Boulevard & CY Avenue

Morad Park is a natural area. The park is bordered by the North Platte River on the north. The park features the Platte River Trail, benches, a picnic table, a porta-john, and river access. The park is not fenced-in and there are no gates along the pathway or for the street entrance. Dogs must be leashed outside the park and signs along the pathway let owners know the boundaries.

Hours: The park is open from 6 a.m. to dark.



There is no poop fairy!

Like the Loch Ness monster, Bigfoot, or the Yeti, the fabled poop fairy has been the stuff of legend. But we are here to tell you, sorry Virginia, there is no poop fairy. Dog poop that is left by owners... stays... a long time.

Dog poop doesn't biodegrade like wild animal poop. Because we feed our dogs food that's very different from the food wild animals eat, dog waste does not biodegrade quickly like wild animal waste. And that waste can add up quickly.

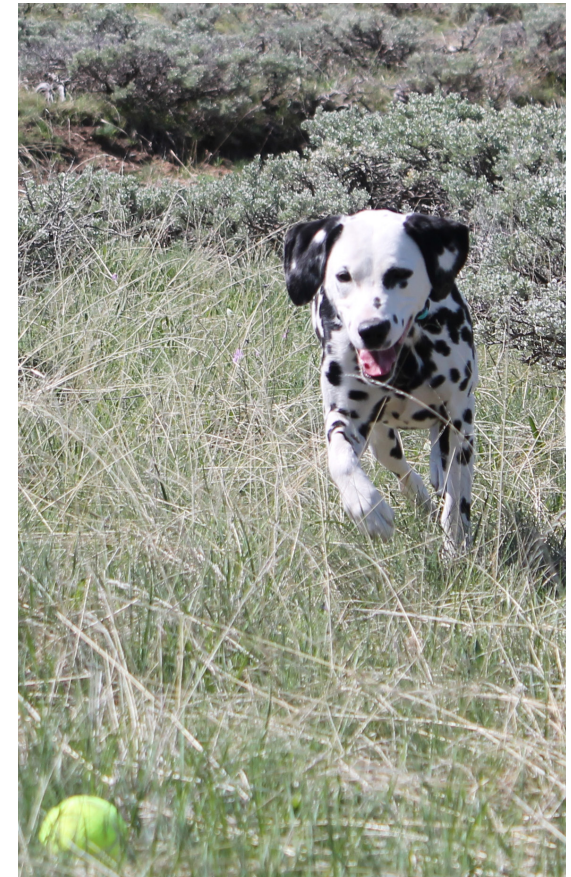
Natrona County has an estimated 18,934 dogs. Dogs relieve themselves every day, producing an average of 3/4 pound of waste per dog. That's over 14,200 pounds of dog waste each and every day! The only way it disappears is when it gets picked up by dog owners!

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Visit www.casperwy.gov
Call the Stormwater Hotline 307-235-7535

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Every time, everywhere!

Scooping your pet's waste is not only neighborly and loving to your pet... it's the law. City of Casper Ordinance 6.04.90 says: "It shall be the responsibility of the owner of a dog, cat or other animal to keep his property free and clear of animal waste" and "the owner of every dog, cat, or other animal is responsible for the removal of any excreta deposited by his/her animal on public walks, recreation areas, or private property other than that of the owner."

Simply put... you should scoop the poop every time and everywhere!

Pet Waste Stations

Some parks and trails have pet waste stations to help residents scoop the poop. The stations are meant for convenience, however; you should always carry poop bags with you. To make this easier to remember, try tying bags to leashes or storing bags in your car.



iScoop Bag Holders & Bags

Free bag holders and bags are available at the City of Casper Parks Department. Due to limited availability, they are limited to 1 per resident. The iScoop holder shows you and your dog's commitment to keeping Casper clean.

Picking Up Waste Prevents Disease

Animal waste can carry disease-causing bacteria and parasites. Diseases can be spread to humans and to other pets. Bacteria, viruses, and parasites can be picked up by stormwater and carried into the river as stormwater is never treated. Picking up pet waste is the best way to prevent diseases from spreading.

Parvo: a highly contagious virus that affects dogs. The virus is spread by contact with an infected dog's feces. Only a tiny portion of the infected fecal matter is needed to infect a non-immune dog. Puppies are particularly susceptible. The canine parvo virus cannot be transmitted from a dog to a person.

Campylobacteriosis: a bacterial infection carried by animals. The bacteria can be transferred to humans through contact with contaminated water and food. To prevent illness avoid drinking untreated water from a stream, river, pond, or lake. Contamination of water can be prevented by picking up pet waste.

Salmonellosis: a bacterial infection that is usually transmitted through undercooked or raw meat. Salmonella can also be transmitted in pet feces. To prevent infection, wash hands after handling pet waste.

Toxocariasis: parasitic roundworms which can be transmitted to humans through pet waste. To prevent infection, clean up pet waste and clean your pet's living area at least once a week. Wash hands with soap and water after handling waste.

Being a Good Dog (or at least within the law)

All cats and dogs in Natrona County must be licensed. Residents of Casper, Evansville, Bar Nunn and the county license their pets through Metro Animal Services. Residents of Mills license through the Town of Mills. For licensing requirement and fees contact Metro Animal Services or the Town of Mills.

Metro Animal Services

www.casperwy.gov
(307)235-8398

Town of Mills

<https://millswy.gov>
(307) 234-6679

DOG LICENSE

ID: 123 4567 89 101

Lucy P. Dog
1818 Pooch Lane
Casper, WY 82601

AGE- 2 yrs
EYES- **Br** FUR- **long**
HT- **24"** WT- **55 lbs**
NOSE- **blk** EARS- **floppy**

Athletic Field Use

The City of Casper leases the baseball and soccer fields to youth sports organizations. These organizations are allowed to create restrictions for use by people and pets. Please respect the organization's signage regarding use of fields by pets and their owners.

Leash Law

Dogs should be on a leash. The only public areas dogs are allowed off leash are at Morad and Lake McKenzie Parks.

Septic Systems provide a means of treating household waste for those areas that do not have access to public sewer systems. Improperly functioning septic systems can release pollutants and pathogens into ground & surface water. Contaminants can also leach into ground water and can drain into creeks & the North Platte River.

Keeping your septic functioning properly

Things you can do to ensure a properly operating septic system:

- Know where your system is located. Keep a photo or map & maintain historical record of cleaning, repair, & maintenance. (See inside for maintenance information)
- Take hazardous waste to the Special Waste & Diversion Facility (see back for more information). Do not pour wastes down the drain.
- Use cleaners according to directions & sparingly. Bleach & kitchen solvents in excessive amounts can be harmful to the system.
- Put items like cigarettes, diapers, grease, cat litter, & feminine hygiene products in the trash. Never flush or put these items down drains.
- Protect the drain field area. Do not park on the area or let livestock graze in the drain field.
- Practice water conservation. Use water conserving toilets, faucets, shower heads, & appliances. Run the dishwasher only when full.
- Avoid stressing the system by doing multiple laundry loads in one day.
- Divert roof, patio & driveway runoff away from the drain field. Direct sump pumps & foundation drains away from the system.
- Ensure that your system is large enough for your needs. Garbage disposals, washers, water softeners & extra people in the home put stress on systems.
- Plant grass on your drain field rather than trees or shrubs. Water sparingly.

Not in My Septic System!

Some items should never be flushed or put down the drain. They can lead to backups and other septic system problems.

These items should never be put down the drain:

Cloggers

diapers, cat litter, cigarette butts, coffee grounds, grease, fats, oils, feminine hygiene products, one use toilet brushes, etc

Killers

household chemicals, gasoline, oil, pesticides, antifreeze, paint, etc

Household Hazardous Waste

The Special Waste & Diversion Facility is located across the street from the Casper Regional Landfill (1883 N Station Rd). The facility is open Monday through Saturday 7:30 a.m. to 4:00 p.m. There is no charge to residents dropping off wastes. All residents of Natrona County are eligible to utilize the facility.



Accepted wastes:

Pesticides	Antifreeze	Used Oil
Poisons	Cleaners	Solvents
Degreasers	Vegetable Oil	Cooking Oil
Paints	Gasoline	And more!

Call 235-8246 or visit www.casperwy.gov for more information.

For more information on the placement, care and maintenance of a septic system, please contact:

Natrona County Health Department
Environmental Health Division
475 S Spruce Casper, WY
307-235-9340

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Septic System Maintenance



We all live downstream..

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Rain Barrel Placement

Rain barrel systems must be placed in a location that will allow runoff traveling through a downspout to be captured by the system. However, the system can be camouflaged or hidden by shrubs, bushes, or an attractive enclosure built to "hide" the system from full view.



Water Storage Tips

Concern about *West Nile virus* dictates that special precautions are taken to discourage mosquitoes from laying eggs on the water's surface when collecting and storing water in rain barrel systems .

- ◆ Keep rain barrels tightly covered.
- ◆ Place debris screens in the gutter or barrel lid to filter water before it enters the rain barrel.
- ◆ Clean gutters and downspouts frequently.
- ◆ Use collected rainwater within a few days so the water surface does not remain undisturbed for long periods.

Regularly check to see if larvae are present by using a white cup to skim the water from the surface of the rain barrel. Put the cup on a firm surface. Wait a few minutes for it to settle, then look for the small thin wiggling larvae. If larvae are present, the water should be treated immediately or the barrel should be drained and dried.

Redirecting Runoff Water for Landscape Use

Rain water from gutters and downspouts can be redirected to landscaped areas by placing a joint at the bottom of the downspout. A perforated pipe can then be attached to direct the water away from the house into planted areas. Water from downspouts can also be channeled to plantings by installing a small concrete or plastic apron at the base of the downspout. Most driveways are designed to move water directly into the street; however, depending on how the driveway or large paved areas slope, it is possible to collect and redirect this water to a planed area such as a rain garden.



Pictures provided by NEMO/UCONN Cooperative Extension

WATERSHED COALITION PARTNERS

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Call the Stormwater Hotline: 307-235-8283

Water Harvesting

*Clean, free water for
Your garden.*



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We all live Downstream

The Problem



No matter where in Natrona County you live, maintaining lawns, vegetable and flower gardens and landscaping is a challenge. This challenge has been compounded by years of drought conditions resulting in limited naturally occurring moisture, municipal water restrictions, the rising cost of purchasing water and, in some areas, poor water well performance.

Faced with these challenges, it is still possible to create and nurture the gardens and landscaping we enjoy by taking full advantage of the naturally occurring water on our property. And, you will be contributing in a positive way toward improving the water quality of our creeks, our drainages, and the North Platte River.

The Solution

Water harvesting is simply collecting water and redirecting it or storing it for later use. The source of the water that can be harvested is rain, snow melt, and irrigation that normally runs off areas such as lawns, driveways, and roofs. The object is to capture this runoff and put it to good use.

With only 1 inch of rain, approximately 420 gallons of water can be collected from a 1,000 sq. ft. runoff area (e.g. roof, patio, driveway).

COLLECTING WATER FOR LATER USE

An easy method of collecting water for later use is to use a traditional rain barrel placed under a downspout. A more elaborate system interconnects several barrels with plastic pipe to accommodate large runoff areas. The barrels can be connected using gravity flow.



Place the downspout into the top of the first barrel and multiple barrels can be filled in this manner.

Remember to drill a small air hole in the top of the second (and subsequent) barrel(s) for air to escape as the water level rises.

An overflow must be placed at the top of the last barrel. This overflow can be a drip hose to shrubs and lawn or a half-inch pipe directed into a runoff area.

A ball valve and optional quick connect hose connection can be placed either between the tanks or at the side of one tank.



Containers used to store your harvested water should be covered to retard evaporation and to prevent mosquitoes from breeding.

Organic gardeners can make “compost tea” in their rain barrels by suspending a cloth bag of compost in the barrel to use as fertilizer for flowering plants.

Pictures, materials list, and instructions featured here provided by Kevin Knopik, City of Casper Traffic Supervisor.

Building A Rain Barrel System

Creating a single rain barrel or a system of multiple rain barrels is an easy weekend project. Some preplanning is recommended to determine the number of rain barrels required to accomplish your objectives. The square footage of your roof surface will determine how many barrels can be filled during a storm event. A rule of thumb is one 55 gallon barrel per 150 to 250 sq. ft. of roof surface.

Materials required for a two barrel system:

- 2 plastic 55 gallon barrels
- 2-2inch PVC male adapters
- 2-2 inch street ninety elbows
- 1-2 inch tee
- 1-2 inch to three quarter reducer
- 4 feet of 2 inch PVC pipe
- PVC cement
- 1-three quarter inch male to female threaded ninety
- 2-three quarter inch by three inch plastic nipples
- 1-three quarter inch ball valve
- 1 quick disconnect for garden hose (optional)

Building a two barrel system:

Most rain barrels will come with two bung holes. One hole will have standard threads and the other will be non-standard. Use the standard threads for the PVC male adapters. Then, install the ninety's and measure the length of PVC pipe required to join the two barrels. Glue the fittings together and then cut the middle of the pipe for the installation of the tee. After installing the tee, add the reducer, the three quarter inch ninety, nipples and ball valve. Mark and cut a hole in one barrel for the downspout. In the top of the second barrel drill a quarter inch hole for air to escape as the water level rises. This air hole can also serve as an overflow outlet when both barrels become full.

3. Keep construction material & sediment on site

- ◆ Use 1/2 inch wire mesh screen, filter fabric covered with rock or commercially available products to cover the storm drain inlet to filter out trash, debris and sediment.
- ◆ Stabilize construction entrances with rock or other materials so the entrance and adjoining streets do not become covered with mud and sediment.
- ◆ Regular street sweeping at the construction entrance will prevent dirt from entering storm drains. Do not hose paved areas.
- ◆ Keep concrete washout on site.
- ◆ Protect waste construction materials from wind and rain and dispose of properly.



4. Protect & preserve the site's natural features



- ◆ Minimize clearing and the amount of soil exposed.

- ◆ Protect streams, stream buffers, wild woodlands, wetlands, or other sensitive areas from any disturbance or construction activity by fencing or otherwise clearly marking these areas.

- ◆ Protect and install vegetation buffers along waterways to slow and filter storm-water runoff.

Employing low impact construction and development techniques, whether during simple home improvement projects or on major constructions, will make a significant contribution to reducing sediment and pollutants traveling to our creeks, our natural drainages, and the North Platte River.

For more information on low impact development, contact any of the Watershed Partners listed below or visit the low impact development web site at: <http://lowimpactdevelopment.org>.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates 5 times more runoff than a woodland area of the same size?



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Wind, Rain & Construction



We All Live Downstream

The Problem



As stormwater runoff flows across a construction site, it can carry pollutants such as sediment, debris, and chemicals into storm drains, creeks, natural drainages and eventually into the North Platte River. These pollutants severely impact the health of natural waterways, creeks, and rivers. Polluted stormwater runoff can destroy the natural riparian areas and harm fish and wildlife.

The Wyoming wind is also a contributor to sediment and debris being carried into the storm drain system, creeks and river. Preventing soil erosion and sedimentation is an important responsibility at all construction sites.

Whether you're handling your construction project yourself or having it done by a professional, erosion and sediment control are essential elements when planning a construction or landscaping project.

The Solution

Low impact development attempts to control the volume of runoff and the degree of wind erosion from new development sites by employing measures that conserve natural areas, reduce the spread of pollutants and sediment, maximize water infiltration opportunities, and in general disturb as little of the site and surrounding area as possible.

1. Erosion control fencing



Erosion control fencing can contain loose soil during wind, rain, and snow-melt runoff events. Fencing should be a minimum of 4 feet high and placed at 50 foot intervals perpendicular to the wind direction. The bottom the fence should be buried in the ground. After installation:

- ◆ Inspect and maintain erosion control fencing after each wind or runoff event.
- ◆ Ensure that the material is securely attached to the fence stakes at all times.
- ◆ Don't place erosion control fencing in the middle of a waterway or dry creek bed, or use as a check dam. It will wash away during a rain event.
- ◆ Make sure that the runoff is not flowing around the erosion control fencing.

2. Stabilize disturbed soil piles



Exposed soil and dirt piles are common

on construction sites. Design the site to infiltrate stormwater into the ground and keep it out of the storm drain system. Plan the project in stages to minimize the amount of area that is bare. The less soil exposed, the easier and cheaper it will be to control erosion from rain and wind. The same is true for landscaping materials. Try to store materials on site and not in the street or street gutter.

Preparation, application, effectiveness, and maintenance are important considerations in choosing the appropriate erosion control measure for a construction site.

The Wyoming Department of Environmental Quality now requires design and implementation of a Stormwater Pollution Prevention Plan for all disturbed construction areas one acre or larger. This ruling can apply to individual home building lots that are part of a larger subdivision. For more information on the new stormwater requirements visit: <http://deq.wy.us/>