

Residential Storm Water Management

Our neighborhoods are a major source of water pollution. When rainwater runs across lawns, driveways, or public streets, it picks up chemicals and small particles lying on these surfaces. Examples include soil, lawn care chemicals, pet waste, heavy metals, oil, antifreeze, trash, and yard waste. This water then runs through ditches or into storm sewers and directly to our streams and lakes, carrying whatever it acquired along the way.

Upon careful inspection, residential areas are filled with potential pollutants. According to the United States Environmental Protection Agency (EPA), 40 percent of "do-it-yourself" mechanics pour or spill used motor oil onto roads, driveways, or lawns, releasing a total of 80 million gallons each year. Just one gallon of oil can create an 8-acre oil slick. The EPA has also determined that 2 to 3 days of droppings from just 100 dogs in a small bay watershed can contribute enough bacteria to temporarily close the area to swimming. By making simple changes in home management, a significant amount of this residential pollution can be eliminated.

Problems:

- # Large amounts of impervious surfaces, such as pavement and roofs, increase rainfall runoff and peak stream flows, leading to increased erosion from bare areas and streambanks, and downstream flooding.
- # Removal of trees and shrubs from streambanks increases stream temperature; destroys habitat for many insects, fish, and mammals; and eliminates a natural buffer area that helps filter runoff before it reaches the stream.
- # Nutrients from improperly applied fertilizers and neglected pet wastes promote algae blooms, which can eventually cause fish kills.
- # Disease-causing bacteria and viruses from pets and wildlife run off lawns and roadsides into creeks and lakes, creating a risk to public health.
- # Spills, improper storage, and dumping of even small amounts of hazardous household products (paints, solvents, detergents, and oils) can introduce toxic chemicals into surface and groundwater.
- # Runoff of de-icing materials can kill vegetation and contaminate lakes and streams.
- # Residents dump chemicals, yard waste, or trash down storm drains that lead directly to streams, assuming incorrectly that they are connected to wastewater treatment plants. These wastes can clog drainage pipes and ditches and contribute nutrients and oxygen-demanding substances to nearby streams and lakes.
- # Cars and trucks with leaking seals and gaskets deposit oil, lubricants, and antifreeze on streets and parking lots.
- # Tires, brake pads, and other automobile parts wear, leaving heavy metals to be washed into surface waters.
- # "Do-it-yourself" mechanics dump used oil onto the ground, threatening wildlife and drinking water supplies. Antifreeze, toxic to children and animals, is released when radiators are flushed into streets or onto lawns.

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- # Streams become littered with cigarette butts, soda cans, food wrappers, and other trash deposited along roads, in parking lots, or on sidewalks. This trash can reduce the oxygen available to living organisms in streams, threaten wildlife, and reduce the scenic beauty of our natural resources.

Solutions:

- # Reduce the area of impervious, paved surfaces around homes through careful planning of driveways and walkways. Use porous materials, such as concrete grid pavement for driveways and sidewalks.
- # Do not clear trees and shrubs from streambanks and lake shores. Instead, provide a limited number of stabilized and maintained access points. Replant areas where woody vegetation has been removed or mowed down.
- # Establish grass or other vegetative cover on bare spots in the lawn. In areas that are too shaded or too steep, use landscaping groundcovers, mulch, and/or shrubs to cover the soil.
- # Do not over-apply fertilizers or pesticides. Follow label directions.
- # Clean up pet droppings.
- # Store hazardous household chemicals and fuels in secure areas where they are protected from tipping over. Clean up spills and dispose of excess chemicals on special county or city hazardous chemical reclamation days.
- # Keep de-icing materials on paved surfaces and apply only what is necessary. Sweep up excess after thaw and store for later use.
- # Compost yard waste. Do not deposit leaves or grass clippings in ditches or streets.
- # Do not litter. Keep a trash bag in your car and use vehicle ashtrays.
- # Minimize the amount you drive. Take alternative or public transportation to work. Car pool. Combine errands to reduce the number of trips you make.
- # Keep your vehicles in good working order. Fix any leaks that develop.
- # Recycle used oil, oil filters, and antifreeze.
- # Direct the flow of water from downspouts onto the lawn or planting beds, where it can soak in.
- # Collect rainwater in a covered barrel or cistern for later use in the yard.

References

- Earthworks Press. 1989. *50 Simple Things You Can Do to Save the Earth*. Berkeley, CA.
- “Oil & Water Don’t Mix!” Maryland Environmental Service.