Hay bales offer temporary sediment filtration and can slow runoff velocity.

STRAW BALE SEDIMENT TRAP
The implementation of straw or hay bales as check dams, outlet protection, or perimeter controls.

UNDERDRAIN FILTER SYSTEMS
Porous conduit, pipe, or trench that is installed below ground to collect and convey storm water runoff after infiltration.

VEGETATED FILTER STRIPS
Pre-established strips of vegetation that can be used to treat sheet flow, low-velocity runoff and help filter sediment and pollutants.

WET DETENTION PONDS
Basins that collect and retain storm water runoff allowing for maximal sediment removal through particulate settling and pollutant and nutrient uptake.

How can you be sure that these practices are economical and feasible?

These BMPs have been thoroughly researched to determine only the most cost-effective practices. The costs of implementing any of these preventative BMP measures are much less than any costs associated with flooding, bridge, highway, or road damage, pollution clean-up, or public health consequences that may result if preventative BMP measures are not put into effect.

The BMPs recommended were selected based on their applicability to both commercial and recreational activities. Most of these BMPs work best when used in combination, however each individual BMP is effective in reducing the effects of storm water runoff on coastal receiving waters.

If you want more information or if you would like to request a copy of our complete 'Best Management Practices (BMPs) for Coastal Louisiana Nonpoint Source Pollution: Urban Storm Water Runoff: Roads, Highways, Bridges' manual please contact:

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
Coastal Management Division
P.O. Box 44487
Baton Rouge, LA 70804
☎ 225-342-7591
☎ 800-267-4019 (toll-free)
http://dnr.louisiana.gov/crm/

More information is also available from:

U.S. Department of Transportation
Federal Highway Administration
1200 New Jersey Ave., SE
Washington, D.C. 20590
☎ 202-366-4000
http://www.fhwa.dot.gov

Louisiana Department of Transportation and Development
1201 Capitol Access Rd.
Baton Rouge, LA 70804-9245
http://dotd.louisiana.gov

American Association of State Highways and Transportation Officials
444 North Capitol St., NW , Suite 249
Washington, D.C. 20001
☎ 202-624-5800
✉ info@aashto.org
http://www.transportation.org

Photos Provided Courtesy of :
Alabama SWCC
USDA NRCS
and
Providence Engineering and Environmental Group, LLC

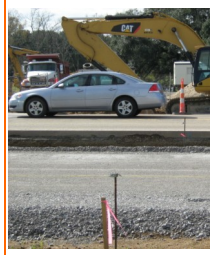
BEST MANAGEMENT PRACTICES (BMPs) FOR COASTAL LOUISIANA NONPOINT SOURCE POLLUTION

URBAN STORM WATER RUNOFF:
ROADS, HIGHWAYS, BRIDGES

DEQ LOUISIANA

Prepared by:
PROVIDENCE

Minimizing the Coastal Impact from Developmental and Residential Activities



Impermeable surfaces allow contaminants to be directly transferred to coastal receiving waters.

Contaminants such as dirt, dust, glass, grease, oils, rubber, trash, and other roadway debris are washed from the impermeable surfaces of roads, highways, and bridges and carried in storm water runoff directly to coastal receiving waters. The *Louisiana Coastal Nonpoint Pollution Control Program (CNPCP)* is responsible for implementing management measures that address the control and prevention of nonpoint source (NPS) pollution from roads, highways, and bridges in urban areas. The recommendations provided are based on cost efficiency, effectiveness, relevant usage in other coastal states, and ease of design and construction.

What are we discussing?

Best Management Practices (BMPs) – Educational and procedural activities that can resolve or reduce specific water quality resource problems if followed and implemented according to their established guidelines.

Nonpoint source (NPS) pollution - Diffuse pollution that is generated from an indirect, unspecific source. NPS pollution is commonly a result of storm water runoff and is generally difficult to control.

Urban storm water: roads, highways, bridges– Runoff flow, primarily from roads, highways, and bridges in urban or suburban areas that does not infiltrate into the soil or evaporate into the air.

What are common water pollution sources?

- *Sediment* – soils and other particulate matter that are transported and deposited
- *Fertilizers and Nutrients*—Inorganic salts and eroded soils
- *Hydrocarbons*—Carbon and hydrogen based compounds (including oil and grease by-products)
- *Pathogens*—Disease causing organisms and materials
- *Pesticides*—Chemicals used to control organisms or vegetative growth
- *Metals*—metallic contributions from non-metal products

Site Preparation and Maintenance BMPs

CONSTRUCTION SEQUENCING

The development and following of a planned construction schedule that coordinates all site activities can reduce on-site erosion and off-site sedimentation.

FERTILIZER AND PESTICIDE CONTROL

Consider alternatives before relying on chemicals. If application is necessary, it is important to follow product application instructions and to use caution in their handling and disposal.

ROAD AND BRIDGE MAINTENANCE

The utilization of pollution prevention techniques, as part of a operation or maintenance program, that serve to reduce or eliminate sediment/pollutant contribution to storm water runoff.

TOP SOILING

Removing, stockpiling, and preserving the existing soil surface (topsoil) in construction/remodeling areas for immediate or future use for vegetation.

Surface Stabilization BMPs

CONSTRUCTION ROAD STABILIZATION

The use of construction specifications, techniques, and materials to stabilize soils on which a road or travel way is constructed. This practice reduces erosion due to vehicle traffic in wet weather.

DUST CONTROL

Reducing soil surface activity and air movement that can lead to dust generation.

EROSION CONTROL BLANKETS

Using protective coverings made of environmentally-friendly, biodegradable materials to provide temporary, maintenance-free stabilization of soils until permanent vegetation can be established.

OUTLET PROTECTION

Structurally lined aprons or other energy dissipating devices at the outlet of pipes, culverts, or paved channel sections that are used to protect against erosion.

Seeding is the most economical and universally adaptable way to stabilize surfaces and prevent erosion.

SEEDING

Where there is no established vegetation, seeding can provide permanent stabilization. Fast-growing annual vegetation can be used to provide temporary stabilization until permanent vegetation can be established.

SUBSURFACE DRAIN

Perforated pipe or a continuous layer of porous material that is installed below the ground surface to intercept, collect, and carry excessive runoff water to a stable outlet.

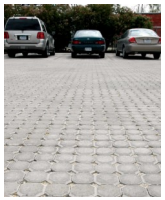
Runoff Conveyance BMPs

CHECK DAMS

Small temporary structures can be constructed across areas of concentrated flow in a swale or channel that will slow velocity and reduce erosion.

DIVERSION AND DIVERSION DIKES

Natural or man-made structures, such as gutters or swales with earthen levees, that can collect and divert runoff. Usually used around site perimeters.



Porous pavement works well in low-traffic areas.

POROUS PAVEMENT

Pavement surfaces made of coarse materials with little filler to allow for runoff to gradually infiltrate into the subsoil. This practice is particularly useful in preventing flooding in parking lots or other low-traffic areas.

Sediment Control BMPs

CONSTRUCTION ENTRANCES

Using gravel and filter layers to trap sediment from construction vehicle traffic before it is transported onto public roadways.

Construction entrances should be flared to allow for turning vehicles.

FIBER ROLLS

Erosion control devices that are made from natural materials, rolled into tubes, and wrapped with biodegradable netting. These rolls capture and filter sediment from road, highway, or bridge runoff.

GRAVEL/SANDBAG BERMS

Gravel or sand bags that are used to intercept and filter sheet flow to provide flood and erosion protection and prevent contamination from highway runoff.

MULCH FILTER BERMS/SOCKS

Mulch-filled mesh fabric that intercepts and detains storm water runoff. This allows for the separation and removal of sediment from roadways before it is transferred to receiving waters.

STREET SWEEPING

The collection and removal of various debris and pollutants, including sediment, trash, and trace metals, from roadways and bridges.

ROCK FILTER BERM

Temporary gravel, stone, or crushed rock ridges that filter, redirect, and reduce runoff velocity.

SEDIMENT BASINS/ROCK DAMS

Man-made or natural depressions that are associated with earthen embankments that retain and slowly drain runoff.