

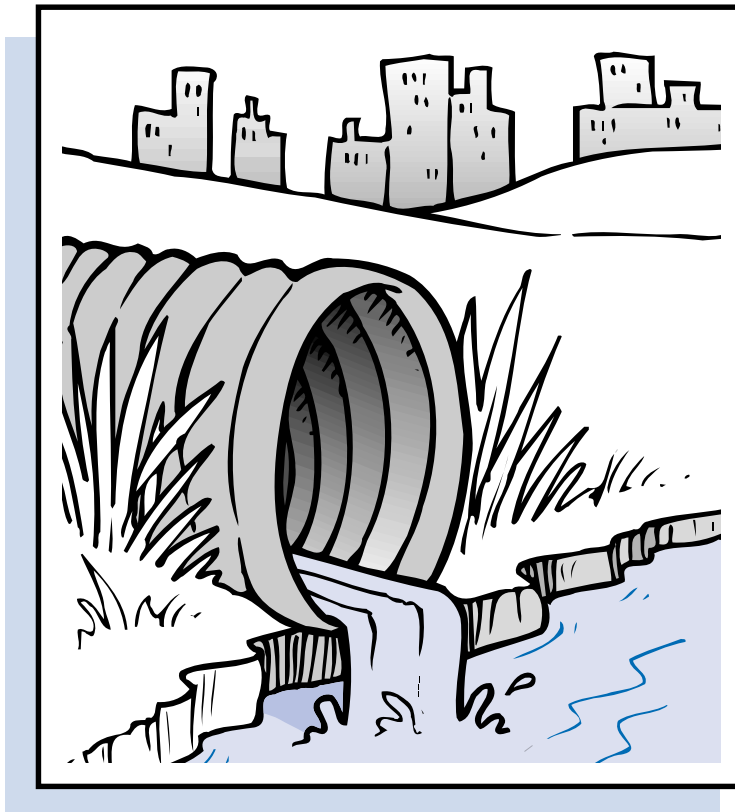


# Community Partners for Clean Streams

SERIES #2:



## SERIES #2: Maintaining Engineered Stormwater Controls



# COMMUNITY PARTNERS FOR CLEAN STREAMS

*NOTE: This handbook is one in a series of handbooks that describes specific practices businesses can use to protect water quality. A complete list of all handbooks and fact sheets available through the Community Partners for Clean Streams program is provided on the back cover. To obtain other handbooks in this series, contact the Office of the Washtenaw County Drain Commissioner at the address or phone number provided below.*

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## **Becoming a “Community Partner for Clean Streams”**

We hope you'll join with the Washtenaw County Drain Commissioner's Office and other area businesses and institutions by participating in the Community Partners for Clean Streams program. Through this program, businesses help protect County rivers and streams.

To participate in the program, the checklist in the back of this handbook must be completed and approved. In return for your effort, we'll publicly acknowledge your business through newspaper articles, displays and speaking engagements. We'll also encourage consumers to look for the Community Partners logo at your business when they select services.

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## **Washtenaw County Award for “Environmental Excellence”**

By becoming a Community Partner, your business will have completed the water quality criteria for Washtenaw County's “Environmental Excellence” award. These annual awards are presented to businesses in the County that proactively protect the environment. For more information about this award program, contact the Community Partners Program Manager, or the Office of the Washtenaw County Drain Commissioner.

Community Partners for Clean Streams Program Manager  
Washtenaw County Drain Commissioner's Office  
705 North Zeeb Rd.  
Ann Arbor, MI 48107

Phone: (734) 222-6833 or (734) 222-6813

Fax: (734) 994-2459

<http://drain.ewashtenaw.org>

*Handbook Design and Illustration by David Zinn*

# Directions for Completing the Water Quality Assessment Checklist Questions at the End of this Booklet

**- Please Read Carefully -**

1. For each question, check the appropriate answer box in the Assessment column (*Always*, *Needs Improvement*, or *Not Applicable*).
2. Next, check the corresponding box in the Action Plan column (*Plan to Continue* or *Plan to Improve*).
3. For every activity, indicate:
  - **Who** is, or will be responsible. It is best to answer with a job position, i.e. facility manager.
  - **Schedule** or proposed date by which the activity will be completed.
  - **Action(s)** - please provide additional details regarding the implementation of a proposed activity, or explain what is already being done.
  - If the action requires ongoing employee training or commitment from management, check that box as a reminder to include it in your employee education activities.

(See example below)

THE ASSESSMENT IS NOT COMPLETE UNTIL THIS INFORMATION IS PROVIDED FOR EACH QUESTION.

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## SAMPLE CHECKLIST QUESTION:

**1. Steps are taken to minimize the amount of potentially polluting materials and wastes kept in storage.**

ASSESSMENT

- |   |   |
|---|---|
| <input type="checkbox"/> Not applicable                     | ACTION PLAN   |
| <input type="checkbox"/> Always .....                       | <input type="checkbox"/> Plan to continue           |
| <input checked="" type="checkbox"/> Needs Improvement ..... | <input checked="" type="checkbox"/> Plan to improve |

Responsible job or staff position(s): Safety Manager

Schedule: Materials will be in place by 12/01

Action(s): Spill kits, absorbent pads, and spill response plans will be placed near all areas that have the potential for spills.

\_\_\_\_\_  Requires ongoing education/commitment







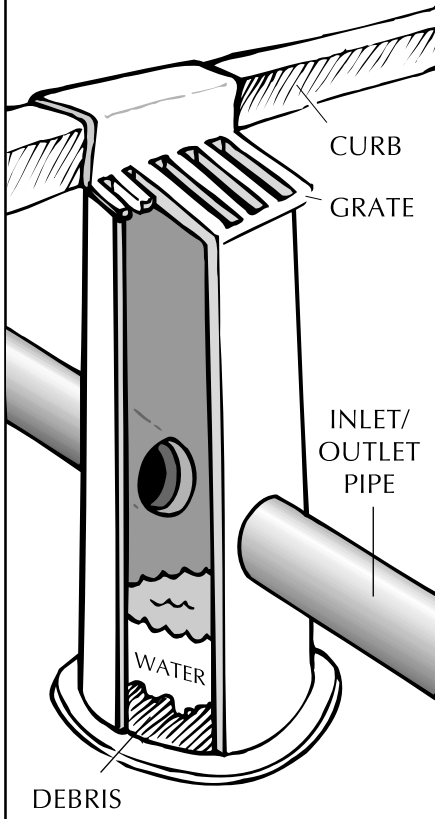
# Catch Basin Care



## Why be concerned?

Catch basins are structures located where surface water enters a storm drain or where pipes intersect. Their main function is to collect runoff and convey it into the stormwater management system. Many are also designed to let sediment and other debris settle into a storage area at the bottom of the catch basin. This helps prevent debris from flowing into the drainage system.

It's important to maintain catch basins. In addition to preventing storm sewer blockages, proper maintenance prevents accumulated pollutants from being stirred up during storms and washed through the system into rivers and streams.



## Removing Debris from Storm Drain Grates

Storm drain grates can become clogged with litter or leaves, especially in the spring and fall. Regular inspection and removal of debris can help prevent blockages that can lead to localized flooding as well as downstream pollution.

## The Importance of Regular Inspections

If you own or maintain a business site, inspect catch basins at least twice a year to see if they need cleaning. Regular inspection and cleaning prevents debris from accumulating in the outlet pipe, and reduces maintenance expense.

To find out how much material has accumulated in the storage area of your catch basin, insert a long, thin probe into the storm drain grate. Notice where the probe hits the debris and continue probing to the bottom to estimate how deep the accumulation is.

## Cleaning Catch Basins

Catch basins should be cleaned out before the storage area is half full. Once this level is reached, solids begin to be washed out in rain storms. Cleaning should be done in the spring, after the first large snow melt, in the fall, after the trees have shed their leaves, and additionally if needed.

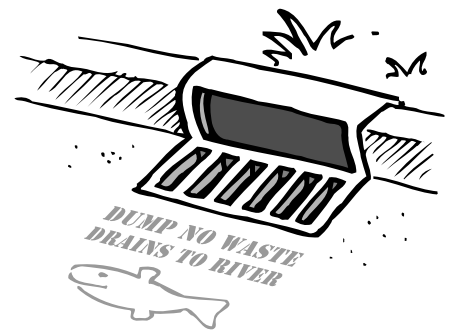
If the catch basin is shallow enough you may be able to clean it out yourself with a shovel and bucket. Be careful not to drop the basin's cover down the opening when you remove it — it can be extremely hard to retrieve. If you can't perform your catch basin maintenance, professional services are available. For assistance identifying contractors, contact one of the agencies listed under "Getting Help."

## Disposing of Excavated Material

Solids removed from catch basins may be high in pollutants such as oil, metals, chemicals, nutrients, and bacteria. To determine how to properly dispose of these solids, contact the waste disposal facility where you expect them to be taken. Hiring a professional service to maintain your catch basins can help to ensure that solid wastes are properly disposed.

## Stenciling Your Storm Drains

Stenciled or decal messages applied with adhesive that read *Dump No Waste, Drains to River* are a good reminder that nothing but water belongs down a storm drain. Community Partners for Clean Streams will lend stencils or provide decal resources for use by program participants.



## GETTING HELP

Michigan Department of Environmental Quality ..... (800) 662-9278

Washtenaw County Drain Commissioner's Office .... (747) 222- 6862

Community Partners for Clean Streams ..... (734) 994-6833

### Utilities Departments:

City of Ann Arbor ..... (734) 994-2525

City of Ypsilanti ..... (734) 483-1421



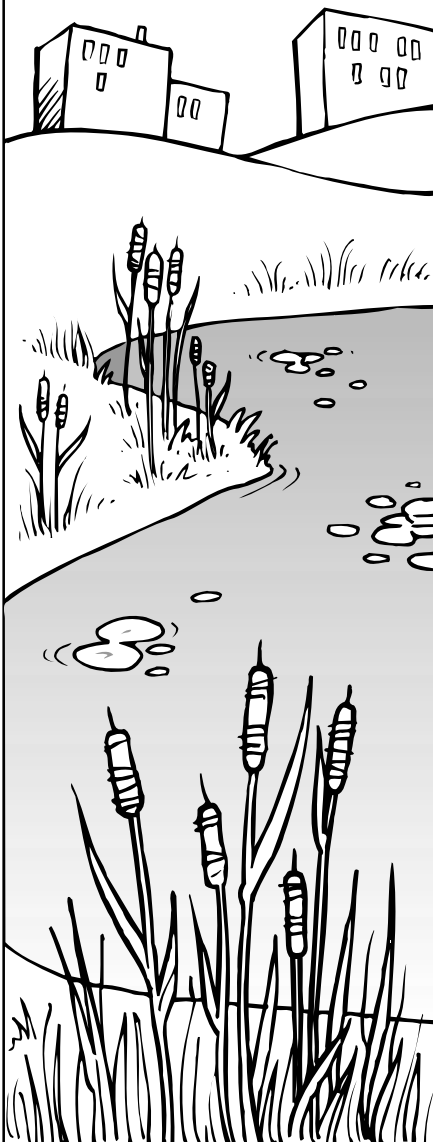


# Maintaining Stormwater Management Systems



## Why be concerned?

The importance of maintaining stormwater management systems can't be overemphasized. Even well designed drainage systems that are not maintained will eventually stop functioning properly and lose the ability to control flooding and remove pollutants from stormwater.



## Maintaining Your Detention System

**Retention** ponds are designed to store stormwater runoff without releasing it (except through evaporation, soil infiltration, or emergency bypass). **Detention** ponds are designed to store stormwater runoff and release it at a controlled rate to systems that ultimately lead to rivers and streams. In order to function properly, retention and detention systems must be rigorously maintained. Your system may have special maintenance requirements; however, in general:

- Maintain thick, native vegetation around ponds to slow and filter stormwater before it enters them. Avoid mowing lawn to the water's edge.
- Regularly remove accumulated sediment and debris, especially around outflow control devices.
- Regularly check and clean inlet sedimentation basins to ensure that there's sufficient storage volume for proper function.
- Inspect the entire system at least once a year. If possible, inspections should be carried out by a professional engineer.
- Immediately repair or replace any damaged or defective structural components.

## Herbicide-Free Algae Control

Herbicides and algicides used to control plant growth in ponds can pollute both detention ponds and waters downstream. Algae and aquatic plants can be controlled by limiting the input of nutrients (such as fertilizers, leaves and lawn clippings) and providing aeration.

## Developing and Implementing a Maintenance Plan

A plan will help to expedite proper maintenance. Plans will vary, depending on the business and site; however every plan should contain the following:

1. A delineation of all stormwater management facilities (including maintenance access and vegetated buffer areas).
2. Provision for the routine and non-routine inspection of every component within the system. A professional engineer should be retained to inspect structural facilities and to conduct emergency inspections.
3. A list of the tasks required to maintain each component of the stormwater management system and a schedule for completing these tasks. This should include both preventative and corrective activities.
4. The party responsible for performing each of the maintenance activities described.
5. A description of on-going landscape maintenance needs, including soil erosion control.

For help determining how to maintain your system, call the Washtenaw County Drain Commissioner or one of the other agencies listed under "Getting Help."

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Washtenaw County Drain Commissioner's Office ..... (747) 222- 6862

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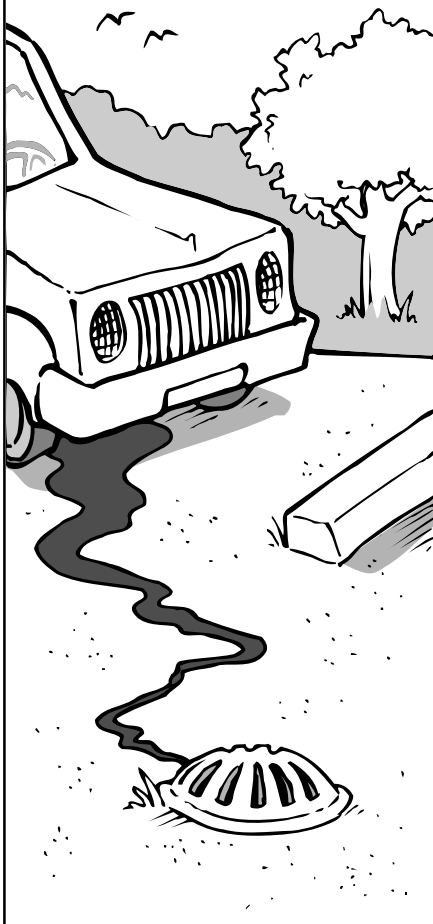


# Oil/Water Separators



## Why be concerned?

If allowed to enter a river or stream, one quart of oil can contaminate up to two million gallons of water! In addition, the Drain Commissioner's office has managed cleanups costing over \$200,000 in response to illegal petroleum releases to Washtenaw's river systems. When the source of an oil spill can be tracked, the responsible business is liable for clean-up costs.



## The First Step: Eliminate Oil at its Source

*Oil/water separators aren't designed to receive large amounts of oil and don't remove all oil from stormwater before it's discharged. Therefore, it's important to eliminate oily runoff at its source. (For example, promptly repair oil leaks on company vehicles.)*

## What is an Oil/Water Separator?

Oil/water separators are designed to remove sediment, oil and grease from stormwater runoff. They're used in areas with heavy traffic or high potential for petroleum spills, such as parking lots, gas stations, and loading areas.

Oil/water separators are usually located close to potential pollutant sources, so they can remove contaminants before runoff enters the storm water system. Two of the more commonly used designs are:

- Simple oil/water separators, which are structures with a T- or elbow-shaped pipe that traps floating pollutants.
- American Petroleum Institute (API) separators, which consist of long vaults with baffles. The baffles slow down the water, increasing the opportunity for oil to float to the surface and for heavy pollutants to settle out.
- More advanced designs for oil separators that advertise better pollutant removal capabilities are now on the market. Other hydrocarbon removal technologies are also available. For information, contact the Drain Commissioner's Office.

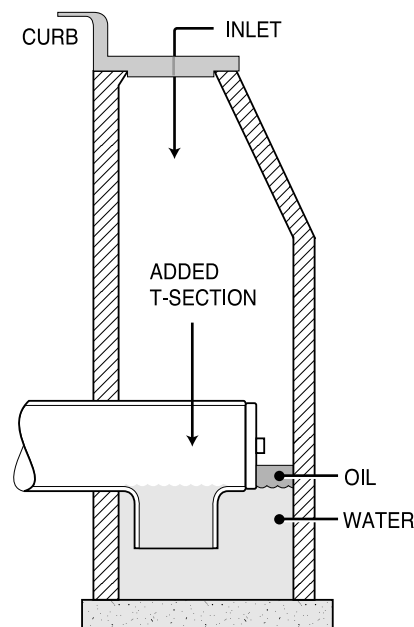
## Installing an Oil/Water Separator

Oil/water separators are an effective pollution control device for:

- gas stations
- car repair shops
- fleet vehicle yards
- heavy equipment storage and maintenance facilities

If you store or transfer liquid materials, it's a good idea to have an oil/water separator. An existing catch basin can be converted into a simple oil/water separator simply by adding a T- or elbow-shaped section of pipe. There needs to be at least one foot between the bottom of the pipe and the bottom of the catch basin to provide space for sediment to accumulate. If you use an elbow-section, be sure that it's removable so the catch basin can be cleaned as needed.

### How to turn your catch basin into a spill control oil/water separator:



## Maintaining Oil/Water Separators

Oil/water separators need regular maintenance. To ensure that separators are properly maintained, it's a good idea to hire a professional service with specific expertise in dealing with petroleum wastes. Make sure that wastes are taken to a licensed treatment facility, where the oil will be further separated for recycling.

If you choose to perform your own maintenance, follow these general guidelines:

**Simple oil/water separators:** Clean simple separators immediately after every spill. For routine maintenance, clean them as you would a regular catch basin (when deposits fill half of the area between the bottom of the catch basin and the bottom of the pipe).

**API oil/water separators:** Regularly clean each chamber. Failure to do so will cause previously trapped pollutants to be resuspended and discharged.

To determine an appropriate cleaning schedule, inspect separators after several rain events and note the amount of collected residue. At the very least, separators should be cleaned twice a year. Continue to inspect separators on a regular basis to ensure that cleaning schedules are adequate.

Replace dirty standing water with clean water to prevent oil from being washed out of the separator. Since it could be explosive, standing water that's been removed must be handled as a hazardous waste.

If your separator has oil absorbent pads, replace them in the spring, in the fall, and additionally, if needed. If your separator doesn't have oil absorbent

pads, consider putting them in. By maintaining the pads you can reduce or eliminate the need to clean out the entire oil/water separator.

For more information about installing and maintaining oil/water separators, contact one of the agencies listed under "Getting Help."

### GETTING HELP

Community Partners for  
Clean Streams Program ..... (734) 222-6833

Washtenaw County Drain  
Commissioner's Office ..... (734) 222-6862

**Utilities Departments:**

City of Ann Arbor ..... (734) 994-2525  
City of Ypsilanti ..... (734) 483-1421

Michigan Department of  
Environmental Quality ..... (800) 662-9278

**Completing Your Water Quality Assessment and Action Plan**

Assessment and action planning requires respondents to assess their current activities and identify any specific actions needed to prevent pollution and improve water quality stewardship.

To create your own "Water Quality Action Plan," please fill out the following checklist. Directions are included on page 3. The "Actions" in this checklist directly correspond to recommendations made within this handbook. If you have any questions or would like help completing this form, please contact the Community Partners for Clean Streams Program Manager at (734) 222-6833 or (734) 222-6862. Send completed checklists to:

Community Partners for Clean Streams  
Washtenaw County Drain Commissioner's Office  
705 North Zeeb Rd.  
Ann Arbor, MI 48107  
Fax: (734) 994-2459

*NOTE: To become a "Community Partner for Clean Streams," all checklists that apply to your business must be completed and returned. A complete listing of all program handbooks/checklists is provided on the inside of the back cover. To obtain copies, contact the Community Partners Program Manager.*

**Business Information**

Business name: \_\_\_\_\_  
 Type of Business: \_\_\_\_\_ No. of employees: \_\_\_\_\_  
 Address: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Contact person: \_\_\_\_\_ Title: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Water Quality Action Plan prepared by: \_\_\_\_\_ Date: \_\_\_\_\_  
 e-mail: \_\_\_\_\_ Fax: \_\_\_\_\_

**Business Activities That Can Affect Water Quality**

Please check the activities that your business is responsible for:

- Storing materials
- Maintaining buildings/pavement
- Maintaining landscapes
- Spill containment and response
- Maintaining constructed stormwater controls
- Site design and/or construction
- Managing wastes
- Managing employees

**MAINTAINING ENGINEERED STORMWATER CONTROLS (FACT SHEETS 2.1, 2.2., AND 2.3)**

**1. Leaves and other debris are regularly removed from storm drain grates.**

ASSESSMENT

- Not applicable
- Always .....
- Needs Improvement .....

ACTION PLAN

- Plan to continue
- Plan to improve

Responsible job or staff position(s): \_\_\_\_\_

Schedule: \_\_\_\_\_

Action(s): \_\_\_\_\_

\_\_\_\_\_  Requires ongoing education/commitment



**2. Catch basins are regularly maintained and wastes are disposed of at an approved site.**

ASSESSMENT

ACTION PLAN

- Not applicable
- Always .....  Plan to continue
- Needs Improvement .....  Plan to improve

Responsible job or staff position(s): \_\_\_\_\_

Schedule: \_\_\_\_\_

Action(s): \_\_\_\_\_

\_\_\_\_\_  Requires ongoing education/commitment

**3. Oil/water separators are installed in all high-traffic and large parking areas.**

ASSESSMENT

ACTION PLAN

- Not applicable
- Always .....  Plan to continue
- Needs Improvement .....  Plan to improve

Responsible job or staff position(s): \_\_\_\_\_

Schedule: \_\_\_\_\_

Action(s): \_\_\_\_\_

\_\_\_\_\_  Requires ongoing education/commitment

**4. Oil/water separators are regularly maintained and wastes are disposed of at an approved site.**

ASSESSMENT

ACTION PLAN

- Not applicable
- Always .....  Plan to continue
- Needs Improvement .....  Plan to improve

Responsible job or staff position(s): \_\_\_\_\_

Schedule: \_\_\_\_\_

Action(s): \_\_\_\_\_

\_\_\_\_\_  Requires ongoing education/commitment

**5. Detention and retention systems are regularly inspected and maintained (Attach a copy of stormwater system maintenance plan).**

ASSESSMENT

ACTION PLAN

- Not applicable
- Always .....  Plan to continue
- Needs Improvement .....  Plan to improve

Responsible job or staff position(s): \_\_\_\_\_

Schedule: \_\_\_\_\_

Action(s): \_\_\_\_\_

\_\_\_\_\_  Requires ongoing education/commitment

Additional Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_





# Community Partners for Clean Streams Fact Sheets



## **SERIES #1 - HOUSEKEEPING PRACTICES**

- Fact Sheet 1.1 ..... Storing Materials and Wastes
- Fact Sheet 1.2 ..... Preventing and Cleaning Up Spills



## **SERIES #2 - MAINTAINING ENGINEERED STORMWATER CONTROLS**

- Fact Sheet 2.1 ..... Catch Basin Care
- Fact Sheet 2.2 ..... Maintaining Stormwater Management Systems
- Fact Sheet 2.3 ..... Oil/Water Separators



## **SERIES #3 - MAINTAINING EQUIPMENT AND VEHICLES**

- Fact Sheet 3.1 ..... Storing and Maintaining Equipment and Vehicles
- Fact Sheet 3.2 ..... Washing Equipment and Vehicles



## **SERIES #4 - MAINTAINING BUILDINGS AND PAVEMENT**

- Fact Sheet 4.1 ..... Outdoor Pressure Washing
- Fact Sheet 4.2 ..... Maintaining Building Facades
- Fact Sheet 4.3 ..... Maintaining Paved Areas
- Fact Sheet 4.4 ..... Using and Storing Deicing Systems
- Fact Sheet 4.5 ..... Cooling Water Systems



## **SERIES #5 - MAINTAINING LANDSCAPES**

- Fact Sheet 5.1 ..... Maintaining Healthy Lawns, Shrubs and Trees
- Fact Sheet 5.2 ..... Using Fertilizer
- Fact Sheet 5.3 ..... Integrated Pest Management
- Fact Sheet 5.4 ..... Using Pesticides



## **SERIES #6 - SITE DESIGN AND CONSTRUCTION**

- Fact Sheet 6.1 ..... Designing Landscapes for Water Quality
- Fact Sheet 6.2 ..... Designing Stormwater Management Systems
- Fact Sheet 6.3 ..... Clearing and Grading Land



## **SERIES #7 - MANAGING WASTES**

- Fact Sheet 7.1 ..... Minimizing Waste
- Fact Sheet 7.2 ..... Recycling
- Fact Sheet 7.3 ..... Waste Disposal



## **SERIES #8 - EDUCATION**

- Fact Sheet 8.1 ..... Education and Community Leadership



## **SERIES #9 - FATS, OILS AND GREASE**

- Fact Sheet 9.1 ..... Food Service Industry FOG Recycling/Proper Disposal