

## STORMWATER BMPS: LANDSCAPING AND LAWN MAINTENANCE

### **AFFECTED FACILITIES**

These Best Management Practices (BMPs) apply at all municipal and county facilities where pesticides or fertilizers are stored, mixed, applied, recycled or disposed. They also apply at any municipal or county properties where lawns or vegetation are cut, mowed, trimmed, fertilized and maintained. The major objectives of these BMPs are to minimize or prevent the discharge of pesticides, fertilizers, and landscape wastes to storm water and receiving waters.

### **BACKGROUND**

Landscape management activities include vegetation removal, pesticide application, fertilizer application, watering, and other gardening and lawn care activities. Weed control typically involves a combination of chemical (herbicide) application and mechanical methods. These practices may contribute pollutants to the storm drain system. Landscape chemicals and wastes can pollute storm water with sediments and toxics that can kill fish and wildlife and can harm humans. Fertilizers can contribute to algae blooms, increase nutrient concentrations, and deplete oxygen in receiving waters.

### **BEST MANAGEMENT PRACTICES**

#### **Landscaping and Lawn Maintenance**

- Mulch-mow grasses whenever possible.
- Sweep grass clippings from sidewalks or streets back on to grassy areas.
- Control soil erosion by seeding, sod, mats, mulching, terracing or other effective methods.
- Dispose of organic wastes by composting whenever possible. When composting is not possible, dispose of organic wastes in an approved disposal facility.
- Do not wash down or dispose of lawn clippings, leaves, tree trimmings, or other landscape waste in or near a storm drain, drainage ditch, or open body of water.
- Use mulch or other erosion control methods to prevent erosion of exposed soils and flowerbeds.
- Do not apply bark on top of plastic sheeting unless the area is enclosed by a barrier-like lawn edging or it is far away from a storm drain inlet. Bark on plastic is easily washed off by heavy rainfall.
- Irrigate with the minimal amount of water needed. Never water at rates that exceed the infiltration rate of the soil.
- Maintain all irrigation systems so that irrigation water is applied evenly and where it is needed, and so that a minimum amount of water falls on impervious surfaces or runs off from the target property.
- Repair broken or leaking sprinkler heads as soon as possible.
- Use automatic timers on all irrigation equipment to minimize run-off.

#### **Application of Pesticides and Fertilizer**

- Develop and implement an Integrated Pest Management (IPM) Plan.
  - Use manual and/or mechanical methods for weed/pest control and vegetation removal rather than chemical methods.
  - When chemicals are required, use the least toxic method to control animal and plant pests. Pheromone-based traps and sticky paper are often more effective than chemicals.
  - Beneficial organisms and biological control should be promoted.

- When chemical pesticides are used, use the most biodegradable pesticide that will accomplish the desired control.
- Pesticide application should be done only under the supervision of a Certified Pesticide Applicator.
- Follow all federal and state regulations governing use, storage and disposal of pesticides, herbicides and fertilizers and training of pesticide applicators (“Read the Label”).
- Follow all manufacturers’ recommendations for mixing, applying, cleaning-up, storage and handling of pesticides and fertilizers. Never over-apply.
- Time the application of pesticides and fertilizers to coincide with the manufacturer’s recommendation for best results.
- Do not apply fertilizers during a heavy rainfall or if a heavy rainfall is expected.
- Do not apply a pesticide immediately before an irrigation cycle or when heavy rainfall is expected.
- Till fertilizers into the soil rather than broadcasting them.
- Use granular pesticides whenever possible since they result in lower application losses.
- Sweep pavement and sidewalks where fertilizers or other solid chemicals have fallen. Sweep the chemicals back onto grassy areas.
- Avoid broadcast spraying of pesticides. Choose an appropriate method of application such that application does not exceed the problem area. (Do not over-apply.)
- Fertilizer may be broadcast applied but apply at the proper application rate as recommended by manufacturer.
- Spot spray pesticides on infested areas whenever possible rather than treating a larger area.
- Designate “no spray zones” and/or “buffer areas” around water features (ponds, lakes or streams).
- Avoid spraying pesticides or fertilizers within 50 feet of any surface water (pond, lake or creek) or storm drainage structure (unless stricter limits apply).
- Do not apply fertilizers or pesticides in or near any drainage or irrigation ditch.
- Regularly inspect, maintain and calibrate all pesticide and fertilizer application equipment to ensure proper application rate.

### **Storage and Handling of Fertilizers and Pesticides**

- Store and mix fertilizers and pesticides inside a covered area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
- Clean up any spills or leaks of pesticides and fertilizers promptly.
- Mix only the minimum amount of pesticide that will be needed for the immediate job.
- Triple rinse all pesticide application containers or sprayers. Dispose of rinsate properly.
- Do not pour rinsate onto ground or into any drainage system.
- Use rinse water from cleaning of containers and application equipment as a diluent for the next batch of that pesticide or apply to target areas.
- Dispose of excess or leftover chemicals and empty expired pesticide containers according to instructions on the label –preferably on the target pest or vegetated area or as hazardous waste.
- Do not dispose of excess, expired or waste pesticides or fertilizers in storm sewers, drainage ditches or any surface waters.

### **REQUIRED STRUCTURES AND EQUIPMENT**

- All pesticide application equipment must be capable of immediate shut-off in the event of an emergency.
- Use automatic timers on all irrigation equipment to minimize run-off.

## **INSTALLATIONS REQUIRED FOR NEW CONSTRUCTION OR RENOVATIONS**

- Design new or re-landscaped areas using xeriscape techniques to the maximum extent possible. Use hardy plant materials appropriate to the climate. (See *“Storm Water Protection – It’s Part of the Landscaping Plan”* published by KICP.)

## **REQUIRED EMPLOYEE AND CONTRACTOR TRAINING**

- Train all current and new employees and contractors who conduct mowing or landscaping activities on this BMP.
- Conduct refresher training on this BMP for all employees and contractors who do mowing or landscaping activities as needed.
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.
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- Pesticide application should be done only under the supervision of a “certified pesticide applicator”.
- All employees who handle or apply pesticides or herbicides should be trained on the most recent Material Safety Data Sheets (MSDSs).
- Train employees on the proper methods for cleaning up spills or leaks of pesticides, herbicides and fertilizers. See *BMPs: Spill Clean Up*.

## **REQUIRED MAINTENANCE**

- Maintain all irrigation systems so that irrigation water is applied evenly and where it is needed, and so that a minimum amount of water falls on impervious surfaces or runs off from the target property.
- Regularly inspect, maintain and calibrate all pesticide and fertilizer application equipment so that it can be set at the correct application rates.

## **RECORDS**

- Keep records of employees and contractors trained.
- Keep records of fertilizer and pesticide purchases, amounts and locations used.
- Keep an inventory of fertilizers and pesticides including expiration dates.

## **REFERENCES**

1. Colorado’s Phase II Municipal Guidance, October 2001
2. *California Stormwater BMP Handbook*, January 2003
3. *Knoxville (TN) BMP Manual, Activities & Methods*, January 2001
4. *City of Tacoma: Surface Water Management Manual (Vol. IV Source Control BMPs)*, January 2003
5. *Municipal Facility Runoff Control Plan* (City of Lakewood, CO)
6. *Best Management Practices for Industrial Storm Water Pollution Control* (Santa Clara Valley, CA)