



Chapter 5

Maintaining Roadside Areas

This chapter of the Toolbox describes various practices to maintain roadside areas and provides a few easy tips for conducting the work in a way that helps protect the environment:

- Cleaning roadside ditches - see Chapter 3
- Managing vegetation
- Controlling erosion
- Controlling litter
- Maintaining walls and slopes
- Cleaning and repairing pedestrian traffic areas
- Repair and painting of guardrails and fences

A handy roadside area maintenance checklist is provided on the next page.



Roadside Area Maintenance Checklist

Use this checklist of clean water tips as a guide for conducting water quality-friendly maintenance practices. Refer to the rest of this chapter for details regarding each clean water tip.

Practice	Done ✓	Clean Water Tip	Tip #
Vegetation management		Use native vegetation	1
		Contain plant & grass clippings	2
		Use covered storage containers	3
		Limit irrigation water	4
		Don't kill all the vegetation	5
		Follow application guidelines	6
Erosion & sediment controls		Apply erosion controls	7
		Use sediment controls	8
Litter control		Dispose of wastes properly	9
		Use covered storage containers	10
		Deal with illegal dumps quickly	11
		Educate and inform volunteers	12
		Establish hazardous waste handling procedures	13
Wall & slope maintenance		Dispose of wastes properly	14
		Contain sand blast grit	15
		Protect storm drain inlets	16
		Limit use of chemical cleaners	17
Pedestrian traffic areas maintenance		Avoid the use of water	18
		Require sidewalk contractors to follow agency procedures	19
Guardrail & fence repair		Contain of wastes properly	20
		Contain sand blast grit	21
		Protect storm drain inlets	22

Vegetation management

Description:

Vegetation along roadside areas, while attractive, can be a maintenance nuisance. Traffic safety considerations preclude frequent mowing and pruning, so most agencies use self-sustaining native vegetation as much as possible. Management measures include irrigation, pesticide/herbicide application and vegetation removal by hand.

Clean Water Tips:

- 1. Use native vegetation.** Where possible, use native plants and trees which can require less water, chemical, and fertilizer use. This will help to keep pollutants out of the storm sewers.
- 2. Contain plant and grass clippings** and recycle as compost for use elsewhere.
- 3. Use only covered roll-off trucks** and drop boxes to temporarily store vegetative waste. This will prevent rainfall and street runoff from leaching nutrients out of the stockpiled materials to the storm sewers.
- 4. Limit irrigation water** by installing low-flow automatic sprinkler systems. This will help reduce the volume of water discharged to the storm sewers.
- 5. Don't kill all the vegetation.** If chemicals are being applied to roadside areas to keep vegetative growth down, use them sparingly and make sure that some vegetation is maintained to stabilize slopes. Vegetation is one of the most cost-effective erosion controls available.
- 6. Follow application guidelines on all chemical products.** Do not apply chemicals near sensitive waterways or small streams.

Erosion and sediment control

Description:

In roadside areas with exposed soils, erosion control is needed to stabilize the area and keep the soils in place. If sediments are mobilized, it will be necessary to install sediment controls to keep the sediment from entering the storm sewers.

Clean Water Tips:

- 7. Apply erosion controls.** Stabilize exposed soil areas to prevent soil from eroding during rain events. This is particularly important on steep slopes. The best and generally most cost-effective choice is to vegetate the area, preferably with a mulch or binder that will hold the soils in place while the vegetation is establishing. There are several good commercially-available products to choose from, and native vegetation should be used if possible. If vegetation cannot be installed right away, apply temporary erosion control mats/blankets, should be a comma straw, or use gravel as appropriate.
- 8. Use sediment controls.** Once sediment is already eroded and mobilized, steps must be taken to keep it out of the storm sewer system or waterways. There are a variety of temporary controls which are commercially available that should be considered for roadside areas. These products slow down the flow of water (to halt erosive processes and allow sediment to drop out) and hold the sediment back. These include: sediment control fences, fabric-covered triangular dikes, gravel-filled burlap bags, and biobags or hay bales staked in place.

Litter control

Description:

Agencies collect litter from roadway areas in order to provide clean and safe traffic and pedestrian areas. These activities help to keep litter, debris, and infectious material (e.g., food waste, drug paraphernalia) out of the storm sewers and streams. Most agencies rely on citizen volunteers or low-cost inmate crews to supplement the work of staff.

Clean Water Tips:

9. **Properly contain and dispose of waste materials.** Consider recycling materials (e.g., wood scraps, leaf and plant materials) whenever possible.
10. **Use only covered roll-off trucks** and drop boxes to temporarily store debris and litter. This will prevent rainfall and street runoff from carrying the debris to the storm sewers.
11. **Deal quickly with illegal dumps.** Establish an agency procedure for quickly dealing with illegally dumped materials discovered by volunteers and staff conducting litter pick-up.
12. **Educate and inform volunteers** about agency procedures for waste disposal.
13. **Establish hazardous waste handling procedures** for crews to follow when hazardous waste is encountered in the field.

Wall and slope maintenance

Description:

These activities involve maintaining walls and paved slopes in roadside areas to restore or protect structural integrity of the structures. Cleaning generally involves removing trash and debris, graffiti removal using spray cleaners, pressure washing with a chemical or baking soda solution, painting over the graffiti, and sand blasting.

Clean Water Tips:

14. **Properly contain and dispose of waste materials and washwater.** Consider recycling materials whenever possible. See Chapter 4, Tip #14 for tips about containing and disposing of washwater.
15. **Contain sand blast grit** and pressure wash residue/debris. See Chapter 4 under Bridge Maintenance for tips.
16. **Protect storm drain inlets** during maintenance activities. See Chapter 4 under Roadway Repair for tips.
17. **Limit the use of chemical cleaners** for graffiti removal, or apply

chemicals sparingly with rags or concentrated spray to minimize water quality pollution. Properly handle and dispose of any chemical cleaner waste and empty containers.

Pedestrian traffic areas maintenance

Description:

Maintenance of pedestrian areas generally involves inspection, cleaning and repair as needed of sidewalks, elevated vaulted walkways, transit malls and city center areas. These activities are designed to provide clean and safe pedestrian areas in designated high traffic locations. Cleaning and repair may be done by contractors. Various cleaning methods are as follows:

- Flushers (tank trucks) manually flush debris to gutter areas,
- Backpack gas-powered blowers move debris to gutters, or
- Pressure washing forces built-up debris off paved surfaces and into gutters.

Once the debris is in the gutters, it is picked up by street sweepers.

Repair of pedestrian facilities involves one or more of the following: break out and removal of existing defective surface material (e.g., concrete, asphalt or stone), addition and compaction of base material, and forming of the new pavement. Painting may also be done for vaulted walkways.

Clean Water Tips:

- 18. Avoid the use of water.** Consider dry methods for cleaning, including backpack blowers and sweeping, or alternatives which generate less water, such as pressure washing. Note that the Oregon Department of Environmental Quality may require washwater permits if detergents are used, or if the area is not swept prior to flushing. Refer to Tip #14 in Chapter 4 for more advice regarding washwater.
- 19. Manage sidewalk contractors' activities.** Require sidewalk contractors to follow your agency procedures for protecting water quality, including collection of construction water, dust

control during sawcutting, inlet protection and proper waste disposal/recycling.

Guardrail and fence repair

Description:

Guardrails and fences along the roadside are maintained for public safety reasons and appearance. Cleaning generally involves removing trash and debris, graffiti removal using a spray cleaner, pressure washing with a chemical or baking soda solution to remove graffiti, painting over the graffiti, and sand blasting or pressure washing for general cleaning. Painting may take place occasionally. This may involve pressure washing or sand blasting to remove built-up grit and flaking paint before painting.

Clean Water Tips:

20. Properly contain and dispose of waste materials.

Consider recycling materials whenever possible.

21. Contain sand blast grit and painting operations, and collect and dispose of residues properly. See Chapter 4 under Bridge Maintenance for tips.

22. Protect storm drain inlets during maintenance activities. See Chapter 4 under Roadway Repair for tips.

Case Study -



The Oregon Department of Transportation's Integrated Pest Management Program

In 1991, the Oregon Legislature enacted a state law requiring state agencies responsible for vegetation control to develop Integrated Pest Management (IPM) programs. The Oregon Department of Transportation (ODOT) has established a nationally recognized model for IPM. ODOT has identified IPM coordinators in each of the 16 maintenance districts. Each district develops an annual IPM plan for vegetation management within the district. A statewide coordinator facilitates the development of the plans, conducts training, workshops, and outreach.

Each road maintained by ODOT has its own management objective. This objective is based on location and classification. The ODOT Integrated Pest Management program identifies the appropriate type of vegetation control needed to achieve the management objective. IPM employs cultural, biological, chemical, and mechanical methods in controlling vegetation. The type of control to be used is based on a variety of conditions: type of vegetation, location of road, location of water courses, presence of protected species, safety, time of year, etc.

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Case Study -



The California Department of Transportation's Litter Management Pilot Study

The California Department of Transportation (Caltrans) is conducting a pilot study of several litter management practices in an effort to identify methods that provide additional pollutant removal benefits. The agency is looking at practices in three categories, as they apply in urban freeway settings: (1) manual pick-up, (2) street sweeping, and (3) structural controls for removing or trapping litter before it enters storm drain inlets. To date, an extensive literature review has been conducted to find out what others across the country have learned. Full-scale field studies will begin in Fall 1998.

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