

9.11-4 MAINTENANCE

A. ESTABLISHMENT PERIOD (SHORT-TERM MAINTENANCE)

Where native vegetation is proposed, a more intense maintenance program is required for a period of at least three years, to support full establishment of desired vegetation and prevent growth of invasive species (especially cattails and volunteer woody growth). It is recommended that these activities should be completed by personnel with experience (three years or more preferred) in performing maintenance of native vegetation.

These short-term activities can be included into a separate contract for “Establishment and Maintenance Activities.” In such a case, the contract would include the initial installation of permanent vegetation (by seeding, plugging or planting) and a set of routine maintenance trips (quarterly trips recommended after initial installation, for a period of three years).

The contract documents should detail the expected maintenance schedule, including the month and year the required activities are to occur.

YEAR ONE—MAINTENANCE ACTIVITIES

Maintenance activities to be performed during each maintenance trip should include:

- Maintain erosion and sediment controls until full establishment of perennial vegetation.
- Weed suppression by cutting native seeding areas with mowers (if accessible) or string-type trimmers to prevent weeds from developing seeds. No cutting or trimming shall be closer than 8 inches to ground surface.
- Do not mow over mulched areas, plugs or other planted native perennials; only trim around these features.
- Removal of cuttings longer than 8 inches that fall within 20 feet of the edge of water or cover areas larger than 20 square feet to off-site location.
- Systemic herbicide treatment of areas larger than 20 square feet where weeds are the dominant plant material.
- Hand-wiping systemic herbicide on invasive weeds and woody species where native plants are the dominant plant material, taking care not to damage nearby native plants.
- Removing above-ground portion of previously treated dead or dying weeds and woody species from planting areas.
- Adding topsoil and raking to restore grade in areas where poor germination, erosion or weed removal have left rills deeper than 3 inches and longer than 10 feet, or areas in excess of 20 square feet depressed or below finished grade.
- Re-seeding areas where poor germination, erosion or weed removal have left areas in excess of 20 square feet bare or sparsely vegetated.
- Applying mulch to areas where poor germination, erosion or weed removal have left areas in excess of 20 square feet bare or sparsely vegetated.
- Pruning dead or dying material in trees or shrubs.

NOTE

When applying herbicides on turf areas adjacent to native planting areas, be careful not to overspray or allow applied chemicals to wash into native planting areas.

- Removal of weeds from the mulched areas around trees and shrubs.
- Application of appropriate insecticides and fungicides as necessary to trees and shrubs, only to maintain plants that are free of insects and disease. Follow manufacturer's instructions on any herbicide application.

YEAR TWO AND THREE—MAINTENANCE ACTIVITIES

Maintenance activities to be performed during each maintenance trip should include:

- Remove all temporary erosion and sediment controls upon full establishment of perennial vegetation.
- Weed suppression by cutting portions of native planting areas where weeds comprise more than 1/4 of the plants within an area. Use string-type trimmers to prevent weeds from developing seeds. No cutting or trimming shall be closer than 12 inches to ground surface.
- Do not mow over-mulched areas, plugs or other planted native perennials; only trim around these features.
- As allowed, add controlled burns by qualified personnel in appropriate areas on an annual or every-other-year basis to control weeds, starting in YEAR THREE.
- Removal of cuttings longer than 8 inches that fall within 20 feet of the edge of water or cover areas larger than 20 square feet to off-site location.
- Systemic herbicide treatment of areas larger than 20 square feet where weeds are the dominant plant material.
- Hand-wiping systemic herbicide on invasive weeds and woody species where native plants are the dominant plant material, taking care not to damage nearby native plants.
- Removing above-ground portion of previously treated dead or dying weeds and woody species from planting areas.
- Adding topsoil and raking to restore grade in areas where poor germination, erosion or weed removal have left rills deeper than 3 inches and longer than 10 feet, or areas in excess of 20 square feet depressed or below finished grade.
- Re-seeding areas where poor germination, erosion or weed removal have left areas in excess of 20 square feet bare or sparsely vegetated.
- Applying mulch to areas where poor germination, erosion or weed removal have left areas in excess of 20 square feet bare or sparsely vegetated.
- Pruning dead or dying material in trees or shrubs.
- Removal of weeds from the mulched areas around trees and shrubs.
- Application of appropriate insecticides and fungicides as necessary to trees and shrubs, only to maintain plants that are free of insects and disease.
- On final trip: remove staking wires from trees but leave stakes in place. Follow manufacturer's instructions on any herbicide application.

B. ROUTINE OR LONGER-TERM MAINTENANCE ACTIVITIES

During the design process, the entity responsible for routine and long-term maintenance should be established. These tasks are necessary to maintain the wet pond's ability to function and support the desired diverse native vegetation. Invasive growth, storage loss, surface erosion and outlet control failures may occur if these tasks are not completed.

ACTIVITY	SCHEDULE
Inspect storm inlets, outlets for debris. Look for signs of sediment accumulation, flow channelization, erosion damage, local streambank instability. Check the outfall for signs of surface erosion, seepage or tunneling along outfall pipe.	At least annually AND after rain events of 1.25" or larger
Inspect forebays and other pretreatment areas.	At least twice annually
Remove accumulated sediment from forebay.	When forebay is 1/2 full OR at least once every 5 years
Clean and remove debris from inlet and outlet structure.	At least three times annually
Monitor vegetation and perform replacement planting as necessary.	Annually (after short-term establishment period)
<ul style="list-style-type: none"> Examine stability of the safety bench and shoreline edge. Inspect for invasive vegetation and remove where possible. Inspect for damage to the embankment and inlet/outlet structures; repair as necessary. Note any signs of hydrocarbon build-up and remove accordingly. 	Annual Inspection
Repair undercut or eroded areas.	When observed
Harvest wetland plants that have been "choked out" by sediment accumulation.	Annually
Remove sediment when total pool volume has become reduced significantly (~25%), when plants along pond edge are "choked" with sediment or the pond becomes eutrophic. (Estimated time: every 10–20 years)	As needed; when approximately 25% of the total pool volume has been lost, or as noted

- Sediments excavated from stormwater detention areas that do not receive runoff from designated hotspots are not considered toxic or hazardous material and can be safely disposed of by either land application or at a permitted landfill.
- Sediment testing may be required prior to sediment disposal when a hotspot land use is present.
- Sediment removed from stormwater detention during construction should be disposed of according to an approved SWPPP.