

MANAGEMENT MEMO

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ISSUING AGENCY: DEPARTMENT OF GENERAL SERVICES

SUBJECT:

STATE BUILDINGS AND GROUNDS MAINTENANCE AND OPERATION

REFERENCES:

Executive Order (EO) B-18-12; Green Building Action Plan, and
Emergency Drought Proclamation

Purpose

This management memo (MM) provides state building and facility managers with practices and procedures that will help them achieve operational efficiencies and resource conservation measures for:

1. Integrated Pest Management (IPM)
2. Drought Moratorium
3. Landscaping Practices
4. Maintenance of Building Exteriors, Roofs, Hardscape, and Exterior Painting

This MM is part of a series of directives to state agencies designed to implement the Governor's Executive Order (EO) B-18-12 on energy and resource conservation in state buildings.

Note: Leadership in Energy and Environmental Design (LEED) Existing Buildings (EB) certified buildings will have additional plan and policy requirements to maintain.

Policy

State departments will implement practices and procedures that assist them in meeting the increased efficiency and resource conservation goals described in EO B-18-12.

Additional Building Operation Reference Information

State departments should have implemented the practices incorporated into the State Administrative Manual (SAM) Chapter 1800, Sustainable Operations and Practices, in the operation and maintenance of their facilities. This chapter is a compilation of previous MMs and covers topics that include:

- Water Conservation (Section 1835)
- Indoor Environmental Quality (Section 1825)
- Recycling And Waste Diversion (Section 1840)
- Environmentally Preferable Purchasing (EPP) (Section 1845)
- Cleaning Products And Methods (Section 1825.4)

Reporting Requirements

In addition to the ENERGY STAR Portfolio Manager database reporting requirements for water and energy use, departments should be prepared to provide status on compliance with these policies in the Road Map to Achieving Executive Order B-18-12 and B-16-12.

Definition

For this MM, *buildings and grounds maintenance* refers to the routine cleaning and the day-to-day maintenance of a building's interior and exterior and the surrounding landscape and hardscape that are considered a part of that facility.

Buildings and grounds maintenance can include repairs of a minor and simple nature involving mechanical and electrical systems and building elements that can readily be performed by maintenance personnel or technicians.

It does not include the following: (see Green California Glossary for definitions)

- Remodeling
- Rehabilitation
- Renovation
- Restoration
- Additions, or
- Any other type of work normally performed by a construction contractor or personnel with specialized certification.

1. Integrated Pest Management

On-site staff and contracted pest management companies shall follow an Integrated Pest Management (IPM) strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques that may include:

- Monitoring for pest presence and establishing treatment threshold levels;
- Using non-chemical practices to make the habitat less conducive to pest development;
- Improving sanitation; and
- Employing mechanical and physical controls.

The Department of General Services Best Practices Manual, Chapter 3 provides detailed steps on implementing an IPM plan. Topics include:

- A. Objectives and Strategies: IPM Best Practices (pg. 3-3)
- B. Lead Person: Assign pest management lead person for each building site (pg. 3-5)
- C. Monitoring and Evaluation: Monitor, keep records, and evaluate IPM program activities (pg. 3-7,3-12)
- D. Green IPM Practices: Emphasize use of cultural, nonchemical and biological controls in all IPM activities (pg. 3-8)
- E. Communication: Notify building occupants before pesticide application (3-11)
- F. IPM Design: Design landscape to minimize pest problems and install mowing strips and underlayments to reduce herbicide use (pg. 3-29, 3-30, 3-32)
- G. Lighting: Install outdoor lighting that doesn't attract flying insects (pg. 3-31)
- H. Waste: Store garbage receptacles on concrete or asphalt surfaces, away from building entrance; keep sealed after loading; empty regularly (pg. 3-31, 3-35)
- I. Proactive Maintenance: Make building repairs that exclude pests (e.g., install door sweeps, automatic door closers), and reduce water sources, food, and harborage (e.g., seal cracks and crevices, fix HVAC and plumbing leaks) (pgs. 3-28, 3-34, 3-38)
- J. Eliminate Food Sources: Keep food storage areas clean and dry (pg. 3-36)

1. Integrated Pest Management (cont.)

When establishing a pest treatment plan, appropriately licensed personnel shall use non-chemical and biological controls. If this treatment is ineffective, use Tier 3 (least hazardous) herbicides/insecticides, progressing to Tier 2 and then to Tier 1 (most hazardous) only if necessary to manage the pests. Utilize only Tier-rated herbicides/insecticides as listed on the current San Francisco Department of Environment Hazard Screening List.

2. Drought Moratorium

The Emergency Drought Proclamation dated January 17, 2014, places a moratorium on new, non-essential landscaping projects at state facilities and on state highways and roads. Projects that are not needed to protect existing trees and shrubs, or are not necessary for erosion or dust control are considered non-essential. Any exemptions must be approved by the governor's office. Submit any exemption requests to sustainability@dgs.ca.gov.

3. Landscaping Practices

Landscaping practices shall be adapted to:

- Reduce landfill waste material and water use;
- Promote the purchase of sustainable plant and maintenance materials; and
- Maintain a healthier outdoor environment.

These practices apply to all grounds and building exterior maintenance and landscape projects occurring on siteⁱ and will be followed by on-site staff participating contractors and vendors. They include:

- A. Existing Landscapes: Should be maintained to survive the drought with reclaimed water whenever possible. Protect high priority landscape elements such as existing trees, ground covers and shrubs. Protect all slopes from erosion. Convert conventional spray heads or rotors to drip and/or low precipitation rate nozzles. A minimum three inch (3") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications.
- B. Existing Lawns: During a declared drought, low priority landscapes such as lawns without trees shall be watered only to the extent to a minimum to control dust and erosion. The University of California, Davis publication, *Managing Turfgrasses during Drought*, provides useful information on warm-season and cool-season grasses in California. Trees in lawn areas that provide shade to buildings and hardscapes are high priority. Add drip irrigation around the drip line of the tree or water slowly and deeply with a trickling hose to increase survival rate. Trees can develop Phytophthora root rot if soil around their base remains wet for long periods. To prevent excessive growth, do not fertilize lawns. Follow the US Composting Council guidelines when using compost to retain moisture on existing lawns.
- C. Low Water Use Landscape: All new and rehabilitation landscape projects shall comply with the latest version of the California Department of Water Resource's model water efficiency landscape ordinance (MWEL0).

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ⁱ Refer to latest version of the California Department of Water Resource's model water efficiency landscape ordinance, section 490.1(e) for exceptions.

3. Landscaping Practices (cont.)

- D. Irrigation: Installation of irrigation sub-meters, flow meters, master valves and smart irrigation controllers are recommended. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance. Observe irrigation cycles and if water is running off, adjust irrigation timers to run for less time, but more frequently (as allowed). Establish a water budget for the landscape based on the plants, landscape area and local climate, and schedule irrigation based on the weather, soil type and to meet the water budget. ([Click here for cycle and soak methods.](#))
- E. Sustainable Grounds and Landscape Maintenance Practices: Sustainable landscaping practices produce significant economic and environmental benefits. Savings include reduced labor, water and fertilizer cost, lower hauling expenses and disposal fees. Standard landscaping practices include grass-cycling, lawn aeration, mulching, and composting practices that enhance the soil. These practices increase the water-holding capacity of soil, reduce erosion, and conserve water. Where appropriate, choose plants that are native or of low water use and are non-invasive to the area; consider mature plant size as it relates to available planting space to reduce pruning needs.
- F. Erosion, Sedimentation Control and Storm Water Retention: Follow recommendations for prevention of erosion, storm water pollution and reducing peak runoff found in 5.106.1 Storm Water Pollution Prevention (p.31), 5.106.10 Grading and Paving (p.34) in the 2013 California Green Building Standards Code (or current edition.) Where possible, incorporate A5.106.2 Storm Water Design (p.100) and A5.106.3 Low Impact development (LID) (p.100).

4. Maintenance of Building Exteriors, Roofs, Hardscape, and Exterior Painting

To reduce the harmful effects of chemicals and air pollution on the local environment and to promote water and energy conservation during exterior maintenance activities departments should develop a maintenance program consistent with the guidelines outlined in Sustainable Site Credit 2: Building Exterior and Hardscape Management Plan of LEED 2009 for Existing Buildings Operations and Maintenance, and linked here: <http://www.usgbc.org/Docs/Archive/General/Docs5545.pdf>

- A. Chemicals: The use of harsh chemicals is not usually necessary for most building exterior maintenance activities. The strength of the cleaning solution should approximate the level sufficient to obtain satisfactory results. Do not use cleaning solutions stronger than necessary for the particular task. Cleaning solutions for exterior maintenance should be Green Seal certified or equivalent and should conform to Environmentally Preferable Purchasing (EPP) guidelines.
- B. Exterior Maintenance: Sweeping is the preferred method of exterior cleaning; blowing is allowed when sweeping or raking is not practical. Departments are to adopt building exterior maintenance programs that conserve water. These programs include using manual cleaning methods over those that require high volume water spraying equipment. Water use, while sometimes necessary to carry out certain cleaning activities should be carefully monitored to avoid excessive waste and runoff. If pressurized washing equipment is necessary, use equipment at the lowest output settings necessary to achieve satisfactory results. When power washing equipment is needed, use electric powered or battery-powered equipment to reduce air and noise pollution. Gasoline powered equipment should only be used in unusual or compelling circumstances and only with the authorization of the building maintenance supervisor.

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4. Maintenance of Building Exteriors, Roofs, Hardscape, and Exterior Painting (Cont.)

- C. Hardscape: Water should never be used for general sweeping of hardscape although pressurized water use for purposes of specific removal of stains or grime from pavement, or for hygienic reasons, is considered reasonable use. State facility childcare centers with playgrounds and patios where food can be consumed should also be hygienically and routinely maintained. The monitored use of pressurized water would be appropriate for these areas as well.
- D. Roofing Cleaning: Roofs should be maintained on a periodic basis consistent with the roof type (built-up, single-ply, metal, cool roof, etc.); manufacturers' warranty requirements; location environment (coastal, urban, desert, mountain, etc.); and other external factors that affect roof performance, reflectivity and longevity. Department maintenance programs should establish roof cleaning methods and frequencies specific to the needs of each building roof to avoid unnecessary cleaning and overuse of water and cleaning solvents. Simple hand removal of debris from roofs, drains, gutters, downspouts, and overflows is often sufficient. Unwarranted frequent cleaning with powered equipment can reduce the lifespan of the roof by wearing down protective coatings and roofing materials. When powered roof cleaning equipment is necessary, equipment with a water recovery/recycle system should be considered in the maintenance program for the appropriate roof type. Refer to local municipalities for additional requirements.
- E. Exterior Painting: Building maintenance often requires the repainting of exterior walls. Paints should either be no or low volatile organic compound (VOC) or contain recycled content when obtainable, meeting industry performance standards (see Green Seal GS-43 Standard). Use water-based paints over those containing oils. When spray equipment is used, ensure that care is exercised to prevent overspray and runoff, particularly near people, vegetation, waterways, and storm drains.
- F. Training: Departments are responsible for providing training and instruction to maintenance personnel and contractors on the proper use, handling, and disposal of all solvents and paint products. Personnel should be directed to use manual methods of cleaning and painting whenever possible and to avoid the risk of excessive discharge with powered equipment.

Background

EO B-18-12 directs the Department of General Services to work with other state agencies to develop policies and procedures for the operation and maintenance of state buildings to achieve operating efficiency improvements and water and resource conservation.

Questions

Contact: Building and Property Management (BPM) Headquarters, Department of General Services at (916) 322-8779.

Signature



Daniel C. Kim, Director
Department of General Services

10/15/15

Date

APPENDIX

Landscaping Practices: Resources

Information and Directories:

- CalRecycle Compost and Mulch home page: Starting point to learn about the uses and benefits of compost and mulch.
- CalRecycle Compost and Mulch Producers: A list of permitted compost and mulch producers, searchable by county.
- Seal of Testing Assurance: Program run by U.S. Composting Council to assure high-quality finished products, includes listing of approved composters and laboratories.

Guidelines and Resources:

- State Landscaping and Irrigation Guidelines
- River-Friendly Landscape Guidelines, Bay-Friendly Landscape Guidelines and Russian River-Friendly Landscape Guidelines: Provides a whole systems approach to the design, construction, and maintenance of landscapes to support the integrity of the Sacramento River and San Francisco Bay watersheds, but applicable elsewhere as well.
- Caltrans Compost Specifications: Guidelines for purchase and use of compost along California roadways, developed by California Department of Transportation (Caltrans). Other resources on erosion control, infiltration and plant establishment.
- Compost Use for Landscape and Environmental Enhancement Manual: CalRecycle manual with information on compost use in landscape plantings and environmental applications.
- Grasscycling: The natural recycling of grass by leaving clippings on the lawn when mowing.
- Xeriscaping: Developing landscapes specifically designed to use little or no water.
- Landscape Plants for California Gardens, Robert C. Perry 2010.
- California Invasive Plant Council (Cal-IPC): List of invasive plants.