

## Chapter 6 Operations & Maintenance

O&M practices impact the building owner's costs and residents' health, comfort, and safety. Sustainable building O&M practices enhance tenant health and operational savings. The key to successful building performance is O&M plans, education, and design that is convenient and cost-effective.

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**6-1** **Essential:** Prepare a plan for annual scheduled maintenance of all aspects of the building and site, including but not limited to, building envelope, roof, vents, filters, plumbing, combustion equipment and landscaping.

<b>WHY</b>	<ul style="list-style-type: none"><li>• A regularly maintained building and site will provide optimum</li></ul>
<b>HOW</b>	<ul style="list-style-type: none"><li>• Use the information compiled for Chapter 1: Enhanced Design, Action Item 15, including preferred maintenance to develop a schedule matrix.</li><li>• Include this plan within the overall O&amp;M Plan.</li></ul>
<b>COST</b>	<ul style="list-style-type: none"><li>• No additional cost to construction budget.</li></ul>

**6-2** **Essential:** Prepare a sustainable landscape O&M plan.

<b>WHY</b>	<ul style="list-style-type: none"><li>• Pesticides and herbicides may not break down before reaching the water table and are harmful to many plants, animal species, and humans. While occasional use of these products seems insignificant, the cumulative effect can be devastating to water habitat.</li><li>• A sustainable landscape O&amp;M plan can provide the information property management and custodial staff need to ensure a functional landscape</li></ul>
<b>HOW</b>	<ul style="list-style-type: none"><li>• Begin the plan with a statement as to the importance of using environmentally preferable methods in landscaping.</li><li>• Landscaping policies to reduce pesticide use, such as Integrated Pest Management (IPM) should be stated in the plan.</li><li>• Provide specific guidance on proper soil preparation including preferred amendment techniques, soil and vegetation management, and irrigation. Plan should provide details on how to care for existing landscaping and</li></ul>
<b>COST</b>	<ul style="list-style-type: none"><li>• No additional cost.</li></ul>



*A well placed and labeled system encourages recycling in a common area.*

**6-3 Essential:** Provide adequate space and convenient placement of resident recycling. Develop recycling and disposal procedures for staff.

<b>WHY</b>	<ul style="list-style-type: none"> <li>• By making recycling easy, it is less likely that recyclables will end up in the garbage. A well-organized recycling system within the dwelling simplifies sorting of materials and takes up little space.</li> <li>• Recycling minimizes the long-term cost of disposal that contributes to the overall effectiveness of a building's operation.</li> <li>• Proper disposal is essential in maintaining a well-kept, sanitary facility</li> </ul>
<b>HOW</b>	<ul style="list-style-type: none"> <li>• Provide a recycling system in each unit in addition to any exterior common recycling containers. The location of recycling center should be convenient to tenants without imposing on the aesthetics of the building.</li> <li>• Consult with Seattle Public Utilities Solid Waste early in planning to determine size of bins, location and truck access.</li> <li>• Good signage will help ensure an effective recycling program.</li> <li>• Include recycling and disposal procedure in the staff O&amp;M Manual and in</li> </ul>
<b>COST</b>	<ul style="list-style-type: none"> <li>• If designed properly, there is no additional cost. A thoughtful plan may</li> </ul>

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<b>6-4</b>	<b>Essential:</b> Design properly ventilated separate storage area for maintenance supplies and paints.
<b>WHY</b>	• Cleaning and maintenance supplies, with the exception of the non-toxic alternatives discussed in this manual, off-gas many unhealthy
<b>HOW</b>	• If integrating a maintenance storage area within the development, locate it away from air intakes and windows, properly ventilate, and thoroughly seal and isolate it from interior living spaces. • Extra attention should be paid to these safety measures in rehab and smaller projects.
<b>COST</b>	• As this is already required by code, there are no additional costs.

<b>6-5</b>	Develop a tenant manual to provide guidance on living in a residence that incorporates green or sustainable features.
<b>WHY</b>	• A manual can help owners or tenants make choices that enhance the green or sustainable features of their building, such as using non-toxic cleaning supplies, or that prevent problems that could decrease the sustainability of their building, such as notifying property managers of leaks that could cause mold. • A tenant manual can enhance the sense of community and stewardship. • Residents may be unfamiliar with sustainable systems or features installed in their building and may need training in operating them properly to enjoy fully the environmental and economic benefits intended
<b>HOW</b>	• Incorporate the SeaGreen Affordable Housing Guiding Principles or the Sustainability Goals for your project as a starting point for educating residents on this unique aspect of their building. • A manual can be enhanced through visual aides, such as signage around the building, and discussion at tenant meetings on specific aspects of the building. It will be important to ensure written materials are available in non-English formats.

	<ul style="list-style-type: none"> <li>• Topics that should be included in the manual include the use of non-toxic cleaning solutions, recycling procedures, proper trash disposal, organic gardening techniques, and treatment of any critically sensitive areas on site such as wildlife corridors, streams, or buffers. Design features that require specific and perhaps unconventional practices to work effectively should be covered. For example, for zoned heating, tenants should be informed as to how to deal with rooms with different heating needs and/or how to program their thermostats.</li> </ul>
<b>COST</b>	<ul style="list-style-type: none"> <li>• No additional costs.</li> </ul>

<b>6-6</b>	Incorporate a waste disposal plan in the building/site design.
<b>WHY</b>	<ul style="list-style-type: none"> <li>• By making trash disposal easy and accessible, it is more likely that garbage/recyclables will end up in the appropriate containers. A well-organized trash system promotes safety and sanitation and may reduce maintenance and expense. Poorly maintained trash areas invite pests, rodents and unauthorized dumping.</li> </ul>
<b>HOW</b>	<ul style="list-style-type: none"> <li>• Provide disposal options convenient to tenants.. Consider trash chutes or trash rooms.</li> <li>• If appropriate, provide for intermediate disposal locations serviced by management.</li> <li>• Provide convenient and accessible common area trash collection containers.</li> <li>• Good signage will help ensure an effective disposal program. Insist on</li> </ul>
<b>COST</b>	<ul style="list-style-type: none"> <li>• If designed properly, there is no additional cost. Consult with your</li> </ul>

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**6-7** Provide training for O&M staff.

**WHY**

O&M activities can be critical in achieving actual environmental and economic performance.

**HOW**

Provide a list of training opportunities in the Seattle area. Free and low-cost training are routinely available. Vendors of systems equipment often provide training to ensure good performance of their product and reduce complaints.

Develop a schedule for training to ensure information is reviewed