

**THE COMMONWEALTH
OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ADMINISTRATION AND
FINANCE**

Division of Capital Asset
Management and Maintenance



**FACILITIES MANAGEMENT & MAINTENANCE
STANDARDS**



March 1, 2016

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We could not have crafted Standards of this quality without your knowledge and commitment.

Sincerely,

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Purpose and Scope

The Facilities Management and Maintenance Standards (FMMS) are subject to periodic reviews to ensure that the standards remain current. As such, this March 1st 2016 revision supersedes the previous July 2014 edition.

In this newest revision, the Division of Capital Asset Management and Maintenance (DCAMM) is renewing its focus on asset management and stewardship of Commonwealth facilities. The standards reflect the universal approach to the maintenance and care of Commonwealth facilities. In addition, the standards provide consistency in service delivery and serve as a method for measuring performance over time. The FMMS are available to all Commonwealth agencies for buildings to meet a base level of quality standards, and to enhance and build upon high quality stewardship of Commonwealth assets, along with promoting the uniform care of buildings.

As per the original purpose and scope, specialized facilities like hospitals and correctional institutions which must comply with specific requirements of the Joint Commission and other comparable standards-based organizations will be addressed in facility-specific supplements to the FMMS. FMMS are to be used in conjunction with governing standards that are referenced in this document as well as any specific additional requirements for each type of facility.

Acronyms and Abbreviations

A&F	Executive Office for Administration and Finance
ADA	Americans with Disabilities Act
AEC	Architectural, Engineering and Construction
AEP	Accelerated Energy Program
ANSI	American National Standards Institute
APPA	Association of Physical Plant Administrators.
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BDL	Massachusetts Bottle Deposit Law
BIM	Building Information Modeling
BOMA	Building Owners and Managers Association
CAD	Computer Aided Design
CAMIS	Capital Asset Management Information System
CEMP	Comprehensive Emergency Management Plan
CFAC	Commonwealth Facilities Advisory Council
CIMS-GB	International Sanitary Supply Association's (ISSA) Cleaning Industry Management Standard - Green Building (CIMS-GB)
CMMS	Computerized Maintenance Management System
CMR	Construction Management at Risk
CMR	Code of Massachusetts Regulations
COBie	Construction Operations Building Information Exchange
D/B	Design-Build
DBB	Design-Bid-Build
DCAMM	Division of Capital Asset Management and Maintenance
DCR	Department of Conservation and Recreation
DHS	Department of Homeland Security
DM	Deferred Maintenance
DOER	MA Department of Energy Resources
DR	Demand Response
E. O.	Executive Order
EAM	Enterprise Asset Management
EEMS	Enterprise Energy Management System
EMAP	Emergency Management Accreditation Program
EMI	Emergency Management Institute
EMP	Energy Master Plan
EMT	Executive Management Team
EPA	US Environmental Protection Agency
EPP	Environmentally Preferable Product
FCA	Facility Condition Assessment
FCI	Facility Condition Index
FEMA	US Federal Emergency Management Agency

Acronyms and Abbreviations

FM	Facilities Management
FMMS	Facility Management and Maintenance Standards
FOMP	Facility Operations and Maintenance Plan
FSA	Facility Security Assessment
GIS	Geographic Information Systems
HVAC	Heating, Ventilation and Air Conditioning
IAQ	Indoor Air Quality
I-BEAM	IAQ-Building Education and Assessment Model
IMT	Incident Management Team
IP	Department of Homeland Security Office of Infrastructure Protection
IPM	Integrated Pest Management
ISC	Interagency Security Committee
ISSA	International Sanitary Supply Association
JOC	Job Order Contracting
LBE	Leading by Example
LCCA	Life Cycle Cost Analysis
LEED	Leadership in Energy and Environmental Design
LEED EB: O&M	Leadership in Energy and Environmental Design for Existing Buildings: Operation and Maintenance
LEED ID+C	Leadership in Energy and Environmental Design for Interior Design and Construction
LEP	Limited English Proficiency
LOP	Level of Protection
M. G. L.	Massachusetts General Law
MAAB	Massachusetts Architectural Access Board
MAFMA	Massachusetts Facilities Managers Association
DEP	MA Department of Environmental Protection
MDPH	MA Department of Public Health
MEMA	Massachusetts Emergency Management Agency
MOD	Massachusetts Office on Disability
MSDS	Material Safety Data Sheets
NBIMS	National BIM Standard
NDRF	National Disaster Recovery Framework
NFPA	National Fire Protection Association
NIMS	National Incident Management System
NPG	National Preparedness Goal
NRF	National Response Framework
OCCS	OmniClass Construction Classification System
OEP	Occupant Emergency Plan
OFMM	Office of Facilities Management and Maintenance

Acronyms and Abbreviations

OHS	Office of Homeland security
OSD	Operational Services Division
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PMAS	Project Management Accounting System
PMP	Preventive Maintenance Plan
RFR	Request for Responses
SDS	Safety Data Sheets
SF	Square Feet
SITES™	Sustainable Sites Initiative
SLA	Service Level Agreement
SLM	Service Level Matrix
SST	Strategic Sourcing Team
ST	Department of Homeland Security Science and Technology Directorate
UD	Universal Design
VOC	Volatile Organic Compound

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Title	Standard No./Revision Name	Date
Security	FMMS 01 / REV. 1	March 1 st , 2016

Purpose and Scope

This Security Standard establishes baseline requirements for the protection of people and property at all **Commonwealth facilities**.

The scope of this **Standard** includes:

- **Physical security** for the exterior, perimeter, and public spaces at all facilities
- **Operational security** for all DCAMM activities related to such facilities
- Requirements for access control, intrusion detection, video surveillance, and security communication
- Coordination of emergency response personnel

This Security Standard is based on the **Interagency Security Committee (ISC)** standards and tools developed in conjunction with the **Department of Homeland Security (DHS) Office of Infrastructure Protection (IP) Science and Technology Directorate (ST)**, which is designed for use in every facility in the federal government portfolio regardless of agency or purpose.

Security services shall be consistent across **Commonwealth facilities** of similar type and coordinated with the specific program needs and regulatory requirements of the **User Agency**.

The **Service Delivery and Performance Objectives** document that supports this Standard shall detail the activities necessary for successful implementation of the Security Standard at the facility, as well as the performance goals for ensuring these activities meet the anticipated level of service. The related **Service Level Matrix (SLM)** shall detail the specific service levels available to the **User Agency** and their associated costs.

Implementation of all activities under this Standard shall ensure, and when appropriate, enhance accessibility for facility **occupants**.

The specific regulatory requirements of specialized facilities such as hospitals and correctional institutions are addressed in facility-specific supplements to the Facility Maintenance and Management Standards (FMMS).

Specialized security requirements within **User Agency** spaces shall be the responsibility of the User Agency. Maintenance of special security requirements shall be coordinated with the security work of DCAMM staff and contractors.

Specific requirements and responsibilities can be reasonably varied in the SLM agreed upon by DCAMM and the **User Agency**.



Related Standards

The following FMMS also include references and/or requirements related to this Security Standard:

FMMS 09	Emergency Management
FMMS 15	Accessibility
FMMS 16	Fire Safety
FMMS 17	Wayfinding

Summary

This Standard addresses the following items:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Training
- 5.0 Communication
- 6.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a **User Agency** may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated **Service Level Matrix (SLM)**. This standard applies to leased buildings as well as Commonwealth owned.

Controlling Agency: A state agency with the “legal control or jurisdiction” of the property as provided by M.G.L. Chapter 7C, Section 41, which carries with it the right to “occupy, or make expenditure for the maintenance of, any land, buildings or other state-owned or state-occupied facilities.” Control and jurisdiction does not mean that a state agency is the owner of the property since the Commonwealth owns all state property.

DCAMM Security Manager: This position reports to the Deputy Commissioner of Facilities Management and works closely with the DCAMM Office of Facilities Management and Maintenance to implement standards and integrate security into **Commonwealth facilities**.



DCAMM Security Technology Standards: Series of technology specifications for equipment installed at **Commonwealth facilities**. These specifications identify acceptable security equipment and technology to be used to provide the **Level of Protection (LOP)** specified from the Facility Security Assessment (FSA). The Security Technology Standards include information on access control software, cards and readers, video cameras, storage systems, management software, screening equipment and turnstiles, site protection systems (bollards, fencing, gates), and other related systems.

Department of Homeland Security (DHS): Responsible for protecting the United States and its territories (including protectorates) from and responding to terrorist attacks, man-made accidents, and natural disasters.

DHS Office of Infrastructure Protection (IP): This agency is responsible for leading the national effort to protect critical infrastructure from all hazards by managing risk and enhancing resilience through collaboration with the critical infrastructure community. The office conducts and facilitates vulnerability and consequence assessments to help critical infrastructure owners and operators and State, local, tribal, and territorial partners understand and address risks. IP provides information on emerging threats and hazards so that appropriate actions can be taken. The office also offers tools and training to partners to help them manage the risks to their assets, systems, and networks.

DHS Science and Technology Directorate (ST): The primary research and development arm of the **Department of Homeland Security** which manages science and technology research from development through transition for the Department's operational components and first responders.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Interagency Security Committee (ISC): Created under U.S. Executive Order 12977 to address continuing government-wide security for Federal facilities. The ISC's mandate is to enhance the quality and effectiveness of physical security in, and the protection of buildings and nonmilitary Federal facilities in the United States. The ISC standards apply to all nonmilitary Federal facilities in the United States - whether government-owned, leased or managed; to be constructed or modernized; or to be purchased.

Level of Protection (LOP): A set of protective measures that may be customized to address site-specific threat conditions.

Licensee: Individual or entity that is not a state agency or state employee but occupies the space of a **User Agency** as part of a service contract or other arrangement with the User Agency to further the User Agency's mission, or that occupies space as part of a contract with DCAMM to further DCAMM's services. For example, a private consulting firm hired by an agency might be provided with offices inside the agency's space. The consulting firm would be a licensee.

Massachusetts Emergency Management Agency (MEMA): MEMA is the state agency



charged with ensuring the state is prepared to withstand, respond to, and recover from all types of emergencies and disasters including natural hazards, accidents, deliberate attacks, and technological and infrastructure failures.

Occupant(s): The individuals or entities that occupy space in a **Commonwealth facility** by virtue of their status as a **Controlling Agency, User Agency**, or because they are permitted to use the space as a Licensee of the User Agency.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of **Commonwealth facilities**.

Operational Security: A component of the facility/building security program/plan focused on people. This includes the provision of staff to support the security protocol, education, and training of employees, and the procedures for managing contractors, vendors, and visitors.

Physical Security: The type of security that addresses actions one can take to protect buildings, property, and assets against intruders. When designing a physical security program, the three levels one needs to protect are the outer perimeter, the inner perimeter and the interior. Examples of physical security measures include barriers, fences, gates, walls, outside perimeter lighting, signage, locks, and access control points.

Security Supervisor: The individual responsible for implementing and managing the security program at a facility in cooperation with the facility manager.

Security Staff: In-house security presence that perform a range of security roles. May be cross-trained for duties such as control center monitoring, incident investigation, and emergency preparedness support.

Service Delivery and Performance Objectives: The supplemental document for each Standard that details the activities necessary for successful implementation of the Standard at **Commonwealth facilities**, as well as the performance goals for ensuring these activities meet the anticipated level of service. This document shall also align with the activities listed within the **Service Level Matrix (SLM)**.

Service Level Matrix (SLM): A document that details each of the specific facility maintenance and management services that DCAMM OFMM will provide to a **User Agency** of a **Commonwealth facility** and any that may be retained by the User Agency or **Occupant**. This document is negotiated between OFMM and the User Agency or Occupant and forms part of the Facilities Management Agreement, Occupancy Agreement, or other similar agreement between DCAMM OFMM and an Occupant.

Service Providers: The parties responsible for completing all maintenance and management activities governed by this standard. Service providers at the facility are internal facility staff, external contracted providers, or both.

Technological Security: A component of the facility security program that involves the management of technical data and systems, alarm systems for intrusion detection, video monitoring systems, building automation systems that control HVAC and lighting, fire alarm systems, communication systems such as radios and emergency call boxes, and access control of spaces.



User Agency: A state agency that has the legal right to use and occupy all or a portion of any building, facility, improvement, or property owned by the Commonwealth for its agency mission and purposes. A User Agency may have the exclusive use of an entire building, or in a multi-occupancy facility, it may have the exclusive use of part of the building and the right to use common areas with other users. A User Agency is also an “**Occupant**” as defined herein.

Requirements

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Security Standard and its requirements at **Commonwealth facilities**.
- 1.2 The **OFMM Director of Operations and Maintenance** shall work with the **User Agency** to identify their specific security needs at the facility, and coordinate these needs with those of the entire facility including, but not limited to, providing the proper physical, operational, and technical security.
- 1.3 The **OFMM Director of Operations and Maintenance** shall oversee the completion of all activities under this Standard during both normal operations and actual disaster/emergency incidents and shall determine the individuals responsible for providing these services at the facility. These individuals include, but are not limited to the following:
 - a. **DCAMM Director of Security**
 - b. **Security Manager**
 - c. **Security Staff**
 - d. **Facility Manager**
 - e. **Facility Staff**
 - f. Contracted Service Providers
 - g. Internal and external subject matter experts
 - h. External First Responders
 - i. Massachusetts State Police

2.0 Implementation

The **OFMM Director of Operations and Maintenance** shall ensure the following security service activities occur in **Commonwealth facilities**. The OFMM Director of Operations and Maintenance shall-determine the individuals responsible for carrying out each activity listed below on a case-by-case basis depending on the specific facility.

- 2.1 Ensure an agreement between the **User Agency** and the **OFMM Director of Operations and Maintenance** to establish the actual level of security necessary at the



facility.

- 2.2 Execute, at a minimum, the base level services included in the **Service Level Matrix (SLM)**, which will include but shall not be limited to the following:
 - a. Physical security for the exterior, perimeter, and public spaces.
 - b. Operational security for carrying out all security practices on a day-to-day basis and for managing all facility occupants during and after an actual disaster/emergency event.
 - c. Technological security for access control, intrusion detection, video surveillance, and security communication.
 - d. Coordination of emergency response personnel.
- 2.3 Establish a **Security Management Program** at the facility, and review the program on a regular basis to ensure compliance with current requirements.
- 2.4 Complete a **Facility Security Assessment (FSA)** to determine the **Level of Protection (LOP)** required for the facility and the specific measures necessary to achieve this **LOP**.
- 2.5 Document the results of the **FSA** and the recommendations for achieving the **LOP** in a report that shall be made available to all facility occupants and regulatory agencies involved with security at the facility.
- 2.6 Coordinate with all relevant authorities having jurisdiction (specifically the Massachusetts State Police station of jurisdiction and if applicable, local law enforcement) to ensure they are aware of on-site activities involving security.
- 2.7 Provide guidance during all phases of security operations to assist with providing the proper physical, operational, and technical security.
- 2.8 Ensure **physical security** measures are in place:
 - a. Coordinate security measures with the existing infrastructure to provide physical security of the site, building exterior, and public areas.
 - b. Where current security measures in place do not achieve the **LOP** identified during the FSA, document what elements are missing, lacking, or do not meet the **DCAMM security technology standards** and submit the list of needed measures to the **OFMM Director of Operations and Maintenance** and obtain guidance on interim security measures for the site and an acknowledgement of risk acceptance.
- 2.9 **User Agency** security measures that are above and beyond the baseline services included in the **SLA** shall be managed by the User Agency occupying the facility and coordinated with the **facility manager** and the **security supervisor**.
- 2.10 Implement security planning activities, including, but not limited to the following:
 - a. Plan and coordinate DCAMM OFMM response to incidents including coordination with first responders and authorities having jurisdiction specifically the Massachusetts State Police and if applicable, local law enforcement.



- b. Record and report daily information on routine procedures, emergency situations, and unusual incidents.

3.0 Materials and Equipment

This section identifies high-level regulations, requirements, and categories related to materials and equipment for providing security services and shall not serve as an all-inclusive inventory.

3.1 **Physical security measures** (i.e., materials, products, equipment, and tools) shall be considered for installation at the facility based on the findings of the FSA. These measures include, but are not limited to the following:

- a. Access control points
- b. Barriers and walls
- c. Fences
- d. Gates
- e. Outside perimeter lighting
- f. Signage
- g. Locks

3.2 **Physical security measures** installed at the facility shall meet all federal, state and DCAMM rules, regulations, and requirements in place at the time of purchase.

3.3 Protection of building systems shall be provided as appropriate.

3.4 Control of security systems shall be established and centralized at each facility or at an off-site designated control center. The **DCAMM Security Manager** will specify when the control needs to be established on-site or off-site.

- a. Access control systems shall be integrated with other security systems in place at the facility.
- b. Intrusion detection systems shall be designed and installed to operate in coordination with other building systems.

4.0 Training

The below training requirements are high-level and not all-inclusive. The **OFMM Director of Operations and Maintenance** shall approve and oversee training content and requirements, and ensure that all security providers have proper training in compliance with the requirements under their specific contracts.

4.1 An ongoing training program shall be in place for all security **service providers** and **User Agency** representatives to ensure compliance with all security-related requirements, procedures, processes, and products.

4.2 Training content shall follow applicable industry standards for security procedures, including, but not limited to the following:



- a. Security management of the facility/building
- b. Communication skills necessary for dealing with **occupants, service providers**, local jurisdictions, and visitors
- c. The Occupant Emergency Plan (OEP) for each facility. These plans include, but are not limited to the following activities:
 - Facility/building evacuation, including evacuating persons with disabilities
 - Fire safety planning
 - Emergency management planning

4.3 **Occupants** shall be trained in proper Security and OEP procedures. Training of occupants shall be the responsibility of the **User Agency** and shall be coordinated with the security manager.

4.4 In addition to the above training programs, security **service providers** shall comply with any other training requirements their contracts require.

5.0 Communication

The below information is an overview of requirements related to communication related to this Standard. The **OFMM Director of Operations and Maintenance** shall ensure specific and appropriate communication across staff, service providers, and facility occupants for the successful and transparent implementation of all standards.

5.1 **Service providers** shall not communicate directly with facility **occupants**. All communication with facility occupants shall only occur through the **OFMM Director of Operations and Maintenance**, the **facility manager**, or a designated representative.

5.2 Provide security staff with accurate and updated contact information for key facility personnel and services (e.g., **facility manager**, facility staff, alarm service, etc.).

5.3 Coordinate the communication process with the **User Agency** and their individual security requirements.

5.4 Ensure communication of the following by the appropriate people and through the designated processes:

- a. Pertinent advisories transmitted from **Massachusetts Emergency Management Agency (MEMA)**, **Federal Emergency Management Agency (FEMA)**, the Massachusetts State Police, and other appropriate authorities.
- b. Any impending emergency management hazards
- c. Any changes to the physical security of the facility
- d. Regular updates to **occupants** on security planning and procedures.
- e. Security reports
- f. Information about routine security procedures
- g. Information about emergency situations and unusual incidents



6.0 Recordskeeping

The **OFMM Director of Operations and Maintenance** shall ensure the following recordskeeping activities occur in **Commonwealth facilities**. The OFMM Director of Operations and Maintenance shall determine the individuals responsible for tracking and collecting the below information on a case-by-case basis depending on the specific facility.

- 6.1 Best practices and lessons learned from other **Commonwealth facilities**.
- 6.2 Incorporate required changes into the physical, operational, and technical security programs.
- 6.3 Collect and update security data for the facility, including:
 - a. Visitor processing statistics
 - b. Alarm activation and response
 - c. Documentation of conditions and incidents
- 6.4 Security activity and incident tracking log

Tools and Resources

All tools and resources are also in an appendix to the complete FMMS.

- Cotts, Roper, & Payant. "The Facility Management Handbook." 3rd Edition
- DHS Interagency Security Committee's Standard, Facility Security Level Determinations, March 2008 1st Edition
- Interagency Security Committee Standard, Physical Security Criteria for Federal Facilities, April 2010 1st Edition
- Interagency Security Committee Report, Design-Basis Threat, March 2013 7th Edition

Related Metrics

- The process for security plan development and implementation for each **Commonwealth facility** is provided by the **ISC** and Integrated Rapid Visual Screening Series (IRVS); tools from **DHS ST**. Once this process is complete, a determination can be made that will identify if the facility meets the Standard.
- If the building, facility, and site meets the **LOP** for the identified FSL, no mitigation actions of security systems/solutions are needed. However, the security program will still need to coordinate with active security initiatives with the enterprise security system and it is maintaining the security program at the facility.
- If a facility or site (or portion thereof) is determined not to meet the Standard, a list of areas that need mitigation will be identified by the assessment process and documented in the Tool (and its database).



- Input/Process Metrics
 - a. Have new facilities been added to the DCAMM OFMM building inventory? Have they been assigned a FSL? Have the FSAs been performed?
 - b. Have the inventory of deployed technology assets for **Commonwealth facilities** been updated for new buildings added to the inventory?
 - c. Are resources being tracked for the security program? Are staff/contractors available to perform the assessments for the upcoming year? Is there adequate staff/contractors for maintaining the security program (and if not, have resources been requested)?
- Output Metrics
 - a. Has the building, facility, or site been evaluated to identify the FSL? How many need to be assessed/have been assessed?
 - b. Has a full FSA been performed using the **DHS ST ISC** Tool (modified for use in the Commonwealth)? How many need to be assessed/have been assessed?
 - c. Have a list of necessary mitigation actions been developed for security program elements (staffing, plans, policies and procedures, etc.) appropriate for the identified FSL and **LOP**?
 - d. Have a list of necessary mitigation actions been developed for security technology solutions (access control, CCTV, intrusion detection, etc.) appropriate for the identified FSL and **LOP**?
 - e. Establish a plan/schedule to implement the needed security measures. Has a security improvement plan been developed for the facility to address the identified mitigation actions to meet the desired **LOP**? Has the plan been submitted to the DCAMM Security Manager?
 - f. For measures in place, have they been tested to meet the **LOP** performance requirements? If not, when is the test scheduled?
 - g. Is the facility security system connected to the Control Center?
 - h. For FSL III and IV facilities, are interim plans in place to provide weapons screening for all visitors until mitigation actions are permanently installed at the facilities?
 - i. Establish and track the incident response time for various scenarios at the building, facility, or site. Schedule trainings and exercises for security and emergency response.
 - j. Have training and development courses for OFMM **Security Staff** been provided? for Customers/Occupants?
 - k. Survey Customers/Occupants as to quality and delivery of Security Program.
- Outcome Metrics
 - a. Annual review of security program needs. Review deferred security program needs



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(Staffing, training, etc.). Review deferred security mitigation projects needs to provide desired LOP and reduce accepted risk.

- b. Review program Strategic Goals with respect to Security Posture, Risk Acceptance, Customer/Occupant needs and requests, and Training (for both DCAMM security staff and Customer/Occupants needs).
- c. Develop and maintain the Security Program Efficiency Goals. Track risk reduction, Customer/Occupant needs, etc. to provide security planning metrics for budget development.



FMMS 02: Grounds and Landscape Maintenance Standard

Title	Standard No./Revision No.	Date
Grounds and Landscape Maintenance	FMMS 02 / REV. 1	March 1 st , 2016

Purpose and Scope

The Grounds and Landscape Maintenance Standard establishes the minimum requirements for exterior site work at all **Commonwealth facilities**. This Standard identifies the parties responsible for grounds and landscape maintenance services at facilities, as well as the requirements for carrying out these services.

All grounds and landscape maintenance services should reflect the actual conditions at the facility and the specific needs of the occupant agency; therefore, only high level and summary requirements are included within this document. The actual scope of services will be determined by the facility manager and when applicable, a designated representative for the occupant agency.

Grounds and landscape maintenance plans shall incorporate site-specific vegetation, environmental, and cultural requirements at each site. Furthermore, grounds and landscape maintenance plans shall conform to applicable strategies established through certification programs (i.e. **LEED** or the **Sustainable Sites Initiative**).

Detailed information explaining the specific requirements for grounds and landscape maintenance required to implement this standard is included in the related Service Delivery documents.

Activities included within the scope of this standard shall be carried out in a manner that complies with all regulatory industry requirements. Specialized requirements for facilities occupied by the Massachusetts Department of Conservation and Recreation (DCR) and other agencies are addressed in facility-specific supplements to the FMMS.

Specific requirements and responsibilities can be reasonably varied in the **Service Level Matrix (SLM)** agreed upon by DCAMM and the user agency.

Related Standards

The following DCAMM Standards set forth requirements related to Grounds and Landscape Maintenance:

- FMMS 03 Cleaning
- FMMS 04 Solid Waste Management
- FMMS 05 Routine Maintenance
- FMMS 06 Preventive and Scheduled Maintenance



FMMS 02: Grounds and Landscape Maintenance Standard

- FMMS 07 Integrated Pest Management
- FMMS 08 Health and Safety
- FMMS 10 Energy Management and Sustainability
- FMMS 14 Procurement of Equipment, Material and Building Services
- FMMS 15 Accessibility
- FMMS 17 Wayfinding

Summary

This Standard addresses the following items:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management responsibilities. The extent of these services to be provided by DCAMM for a **User Agency** may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated **Service Level Matrix (SLM)**. This standard applies to leased buildings as well as Commonwealth owned.

Environmentally Preferable Product (EPP) refers to a product or service that has a reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. EPPs include, practices that minimize waste, conserve energy or water, reduce the amount of toxins either disposed or consumed, and products with recycled content.

Executive Order 515 (E.O. 515) “Establishing an Environmental Purchasing Policy” - E.O. 515 requires all janitorial service companies providing services to Executive Branch Agencies to use **Environmentally Preferable Products (EPPs)** as specified in Commonwealth statewide contracts.



Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Green Grounds and Landscape Maintenance is a planned and organized approach to grounds and landscape maintenance that uses products and processes to reduce negative impacts on human health and the environment.

Impervious Surfaces refer to paved, developed, or naturally occurring surfaces that do not allow precipitation (rainwater, storm water, hose water, etc.) to pass through to subsequent soil layers. Examples of impervious surfaces include roofs, paved roads, parking areas, sidewalks, and some hard soils that have been compacted either by design or by use.

Invasive (Non-Native) Plant Species are plants that grow in an environment outside their natural habitat range by being introduced (planted) to the area either deliberately or accidentally. Invasive plants can thrive in areas beyond their natural range of dispersal. These plants are characteristically adaptable, aggressive, and have a high reproductive capacity. Their vigor combined with a lack of natural predators in introduced habitats often lead to outbreak populations.

Leadership in Energy and Environmental Design for Existing Buildings (LEED EB: O&M)

A rating system established through the U.S. Green Building Council (USGBC) that encourages owners and operators of existing buildings to implement sustainable practices and reduce the environmental impacts of their buildings, while addressing the major aspects of ongoing building operations.

Native Plant Species are plant types that grow naturally in a particular region, ecosystem, or habitat without direct or indirect human actions (Federal Native Plant Conservation Committee, 1994). Existing plant species prior to European settlement in eastern North America are considered native to eastern United States.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.

Service Level Matrix (SLM): A document that details each of the specific facility maintenance and management services that DCAMM OFMM will provide to a **User Agency** of a **Commonwealth facility** and any that may be retained by the User Agency or **Occupant**. This document is negotiated between OFMM and the User Agency or Occupant and forms part of the Facilities Management Agreement, Occupancy Agreement, or other similar agreement between DCAMM OFMM and an Occupant.

Sustainable Sites Initiative (SITES™) A program to promote sustainable land development and management practices that can apply to sites with and without buildings. The SITES program will provide tools for those who influence land development and management practices and can address increasingly urgent global concerns such as climate change, loss of biodiversity, and resource depletion.



Requirements

1.0 Roles and Responsibilities

1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**.

1.2 The **OFMM Director or Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:

- **Facility Manager**
- **Facility Staff**
- Contracted Service Providers

1.3 These Standards apply to the performance of all grounds and landscape maintenance services for all buildings under the care and control of DCAMM, and apply to both facility maintenance staff and contracted cleaning service providers.

1.4 Facility Manager

- a. Work with the building occupants to identify any special needs related to grounds and landscape maintenance. Because this service serves the entire building rather than individual occupants, the Facility Manager and DCAMM shall be responsible for establishing scope of service unless an occupant has a specific need.
- b. Work with the Operational Services Division (OSD) and DCAMM to establish contracts for grounds and landscape maintenance services in compliance with the following:
 - Executive Order 515 “Establishing an Environmental Purchasing Policy”
 - OSD FAC71: Lawns and Grounds, Equipment, Parts and Services Statewide Contract
 - OSD FAC77: Landscaping Services, Tree Trimming, Catch Basin Cleaning, Snow Removal and Related Services
 - OSD FAC79: Landscaping and Green Roof Products, Playground Equipment, Site Amenities and Related Products
 - OSD FAC67: Janitorial Services, Environmentally Preferable Statewide Contract

1.5 Contracted Service Providers

- a. Perform all grounds and landscape maintenance operations to achieve the following goals:



FMMS 02: Grounds and Landscape Maintenance Standard

- Benefit human health, native species and the environment
 - Prevent pollution
 - Preserve and protect native plants and wildlife habitats
 - Reduce potable water use
 - Infiltrate water into the ground
- b. Meet minimum qualification requirements to perform grounds and landscape maintenance services, including all applicable certifications and training.
- A Certified Arborist shall be responsible for all tree trimming or removal. Certification must be through the International Society of Arboriculture (ISA) or the Massachusetts Certified Arborist Program (MCA).
 - A contracted service provider that is a “Certified Horticulturalist” under the Massachusetts Nursery and Landscape Association shall manage landscaping activities.
- c. Ensure appropriate training in all tasks under this standard, including, but not limited to the following:
- Landscape management
 - Irrigation design
 - Plant science
 - Soil testing

2.0 Implementation

2.1 The scope of grounds and landscape maintenance services at **Commonwealth facilities** includes, but is not limited to the following:

- a. Landscaping
- Tree trimming and removal
 - Invasive plant control
 - Fertilization
 - Watering and irrigation
- b. Cleaning
- Building exterior (including windows), pavement, and impervious surfaces
 - Catch basin
- c. Grounds keeping and general site maintenance
- Turf and Landscape Integrated Pest Management (refer to FMMS 04)
 - Landscape Erosion and Sedimentation Control



FMMS 02: Grounds and Landscape Maintenance Standard

- Composting
- Snow related services (i.e. snow removal – shoveling and plowing, application of deicers, pretreatment of roadways, parking lots and walkways, etc.)

Water conservation– implement a landscaping program which focuses on low flow season, human demands and promotes potable water conservation, including the planting of native species which do not need regular irrigation.

The Service Delivery documents include tables that detail the following, which will serve as a master service menu for services and the costs associated with those services at each space/building.

- d. Itemized Task List
- e. Frequency of Service
- f. Documentation:
 - Procedures
 - Controls
 - Quality Assurance
 - Training
 - Safety
- g. Performance Tracking

3.0 Materials and Equipment

- 3.1 Meet applicable Federal, State, and local requirements for safety and quality.
- 3.2 Comply with **E.O. 515** Massachusetts “Environmentally Preferable Product” Procurement Program (**EPP Program**) “green” products guidelines.
- 3.3 Procure materials and services under this Standard that meet Environmental preferable standards through the following: (refer to FMMS 14 “Procurement”)
 - a. FAC71 Lawn and Grounds Equipment, Parts and Services
 - b. FAC79 Landscaping and Green Roof Products, Playground Equipment, Site Amenities and Related Specialty Environmentally Preferable Products
 - c. FAC59 Green Cleaning Products, Programs, Equipment and Supplies
- 3.4 Use equipment that reduces impact on the environment wherever possible, including, but not limited to the following.
 - a. Equipment operated with alternative fuel (e.g. electricity compressed natural gas).
 - b. Implement practices for reduced fossil fuel usage and reduce carbon emissions.
 - c. Reduce use of potable water for irrigation.
 - d. Where irrigation is necessary implement practices and installs watering equipment to reduce water consumption as outlined in the Massachusetts Water Conservation



Standards.

- e. Use drought resistant, native plants, wherever possible, that do not need irrigation (If this is a requirement then many of the other elements are not appropriate).
- f. Work with regulatory agencies and the Massachusetts Water Resources Commission to investigate opportunities for water conservation for irrigation practices.

3.5 Cleaning products used for exterior cleaning operations shall also comply with regulations under FMMS 03 Cleaning.

4.0 Regulatory Compliance

4.1 Reduce or eliminate the use of cleaning chemicals wherever possible.

4.2 Where cleaning chemicals are necessary, ensure they are environmentally preferable and minimize impact to human health, animal life and the environment.

4.3 Adopt the Massachusetts Water Conservation Standards for lawn and landscape water use.

4.4 Avoid outdoor water use between the hours of 9:00 am and 5:00 pm.

4.5 Minimize watering of lawns and landscapes by limiting number of watering days per week, and using stored rain water.

4.6 Irrigate efficiently i.e. only as necessary.

4.7 Implement safety procedures for the following:

- a. Handling and tracking of chemicals (fertilizers, weed control products, snow removal products, etc.).
- b. Operation and maintenance of equipment.
- c. Establish a communications plan to inform building occupants of cleaning practices and chemical use.

4.8 Personnel shall have completed all applicable health and safety training related to the services they provide and the products they use on a regular or infrequent basis

- a. Comply with Massachusetts Division of Occupational Safety and OSHA requirements.
- b. Provide current documentation of training and certification for personnel.

4.9 Contracted Services Providers shall develop an Environmental Plan to incorporate sustainable practices throughout their business operations.

5.0 Training

5.1 DCAMM will review and approve training requirements for all grounds and landscape maintenance providers. Contracted service providers shall submit the following



information for its employees, for review by the **Facility Manager**:

- a. Training scope
- b. Training service provider
- c. Certification

5.2 Training for cleaning, and grounds and landscape maintenance personnel shall comply with applicable industry standards and manufacturers' specifications for all products and equipment.

5.3 Service providers are responsible for meeting all additional training requirements pertaining to cleaning (refer to FMMS 03).

6.0 Communication

6.1 Ensure procedures are communicated to all staff for chemical handling and tracking, and equipment maintenance and operation procedures.

6.2 Establish a communications plan to inform building occupants of cleaning practices and chemical use. This communications plan is important for targeting building occupants that are more sensitive to chemical use due to illness or allergies.

6.3 Contracted Services Providers shall develop an Environmental Plan to incorporate sustainable practices throughout their business operations.

7.0 Recordskeeping

7.1 Provide documentation of compliance with **EPP Program** requirements related to the services of this Standard.

7.2 Contract vendors are responsible for identifying and meeting all tracking requirements in place at the time they execute a contract for services.

7.3 As required under **LEED** for Existing Buildings: Operations and Maintenance, DCAMM will identify a representative to conduct an annual audit in accordance with APPA Leadership in Educational Facilities' Custodial Staffing Guidelines to determine the appearance level of the facility.

7.4 To ensure services are carried out in a manner consistent with the appropriate service level established for the facility, DCAMM will conduct regular building assessments of the appearance level and cleanliness of the site.



Tools and Resources

All tools and resources are also in an appendix to the complete FMMS.

- APPA. Operational Guidelines for Educational Facilities: Custodial. Third Edition.
- *Chapter 123 of the Acts of 2006* directs the State Purchasing Agent to grant a preference to products of agriculture grown or produced using locally grown products. These products include any agricultural, aquacultural, floricultural or horticultural commodities, the growing and harvesting of forest products, the raising of livestock, including horses, raising of domesticated animals, bees, fur-bearing animals and any forestry or lumbering operations.
- Commonwealth of Massachusetts Executive Order 515 “*Establishing an Environmental Purchasing Policy*”
- Green Seal’s Environmental Standard for Commercial Cleaning Services (GS-42): greenseal.org/GreenBusiness/Standards.aspx
- GSA Solicitation GS-09P-10-KS-0118, Custodial and Related Services, issued July 9, 2010
- International Sanitary Supply Association (ISSA) Cleaning Industry Management Standard (CIMS) Standard
- International Sanitary Supply Association (ISSA) Cleaning Industry Management Standard for Green Buildings (CIMS-GB): issa.com/
- International Society of Arboriculture: <http://www.isa-arbor.com/home.aspx>
- Leadership in Energy and Environmental Design (LEED), Existing Buildings: Operations and Maintenance Rating System v2009.
- Leadership in Energy and Environmental Design (LEED), Existing Buildings: Operations and Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Massachusetts Certified Arborist Program (MCA): <http://www.massarbor.org>
- Massachusetts Nursery and Landscape Association <http://www.mnla.com/>
- *Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools*. Operational Services Division: Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Massachusetts Water Conservation Standards, Massachusetts Water Resources Commission:
<http://www.mass.gov/eea/docs/dcr/watersupply/intbasin/waterconservationstandards.pdf>
- Operational Services Division (OSD) FAC59: *Green Cleaning Products, Programs, Equipment and Supplies Pricing for all Awarded Statewide Contract Vendors*
- Operational Services Division (OSD) FAC67: *Janitorial Services, Environmentally Preferable Statewide Contract*
- Operational Services Division (OSD) FAC71: *Lawns and Grounds, Equipment, Parts*



FMMS 02: Grounds and Landscape Maintenance Standard

and Services Statewide Contract

- Operational Services Division (OSD) FAC77: *Landscaping Services, Tree Trimming, Catch Basin Cleaning, Snow Removal and Related Services*
- Operational Services Division (OSD) FAC79: *Landscaping and Green Roof Products, Playground Equipment, Site Amenities and Related Products*
- *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts, Operational Services Division: Massachusetts Environmentally Preferable Products (EPP) Procurement Program

Related Metrics

- Grounds and Landscape Maintenance equipment, chemicals, products, and materials soaps will be measured based on the cost of the goods. The cost of the items purchased that have the desired sustainable qualities will be measured against the total cost of items purchased.
- All maintenance equipment will be measured based on quantity. The quantity of equipment that has the desired sustainable qualities will be measured against the total quantity of equipment.
- See FMMS 03 for all additional metrics related to cleaning services.



FMMS 3: Cleaning Standard

Title	Standard No./Revision Name	Date
Cleaning	FMMS 03 / REV.1	March 1 st , 2016

Purpose and Scope

The Cleaning Standard establishes baseline requirements for routine cleaning services performed in **Commonwealth facilities** to provide a clean working environment and protect the health of building occupants. The Cleaning Standard establishes and defines cleaning tasks (such as mopping floors, dusting furniture, vacuuming carpeting, etc.), products, equipment, roles and responsibilities, and performance measurements. This Standard applies to facility staff and cleaning **service providers**.

The Cleaning Standard is intended to meet the following requirements:

Executive Order 515 establishing an Environmental Purchasing Policy (E.O. 515) which requires all Executive Branch Agencies and service providers to use Environmentally Preferable Products (**EPPs**) including environmentally preferable (green) cleaning products and equipment.

Certification through the **International Sanitary Supply Association's (ISSA) Cleaning Industry Management Standard - Green Building (CIMS-GB)** which establishes the procedures and principles cleaning organizations shall follow to deliver efficient, quality service management and environmentally preferable cleaning programs.

Cleaning services shall be consistent across **Commonwealth facilities** of similar type and coordinated with the specific program needs and regulatory requirements of the **User Agency**. The specific regulatory requirements of specialized facilities such as hospitals and correctional institutions are addressed in facility-specific supplements to the Facility Maintenance and Management Standards (FMMS). Implementation of all activities under this Standard shall ensure, and when appropriate, enhance accessibility for facility **occupants**.

The **Cleaning Service Delivery and Performance Objectives** that support this Standard detail the activities required for successful implementation of the Cleaning Standard as well as the specific performance objectives.

A **Service Level Matrix (SLM)** between DCAMM and the User Agency shall be established to detail specific cleaning tasks and the service level at each facility.

Specific requirements and responsibilities can be reasonably varied in the SLM agreed upon by DCAMM and the user agency.

Related Standards

The following FMMS also include references and/or requirements related to this Cleaning Standard:

FMMS 03: Cleaning Standard

FMMS 02	Grounds and Landscape Maintenance
FMMS 04	Solid Waste Management
FMMS 05	Routine Maintenance
FMMS 06	Preventive and Scheduled Maintenance
FMMS 07	Integrated Pest Management
FMMS 08	Health and Safety
FMMS 14	Procurement of Equipment, Material and Building Services
FMMS 15	Accessibility

Summary

This Standard addresses the following items:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials & Equipment
- 4.0 Training
- 5.0 Communication
- 6.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

APPA An international association providing leadership in physical plant management in the education sector through research and publications, professional development, and credentialing. Formerly known as the Association of Physical Plant Administrators.

Approved Green Products List for FAC59 (or any successor contract for these products): A list of green cleaning products, equipment, and supplies approved for use under statewide contract FAC59: Green Cleaning Products, Programs, Equipment and Supplies.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management responsibilities. The extent of these services to be provided by DCAMM for a **User Agency** may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated **Service Level Matrix (SLM)**. This standard applies to leased buildings as well as commonwealth owned.

Controlling Agency: A state agency with the “legal control or jurisdiction” of the property as



provided by M.G.L. Chapter 7C, Section 41, which carries with it the right to “occupy, or make expenditure for the maintenance of, any land, buildings or other state-owned or state-occupied facilities.” Control and jurisdiction does not mean that a state agency is the owner of the property since the Commonwealth owns all state property.

Environmentally Preferable Product (EPP) refers to a product or service that has a reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. EPPs include practices that minimize waste, conserve energy or water, reduce the amount of toxins either disposed or consumed, and products with recycled content.

Executive Order 515 (E.O. 515) “Establishing an Environmental Purchasing Policy” - E.O. 515 requires all janitorial service companies providing services to Executive Branch Agencies to use **Environmentally Preferable Products (EPPs)** as specified in Commonwealth statewide contracts.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Green Cleaning: The use of cleaning products and practices that have lower environmental impacts than conventional products and practices.

Green Seal: A non-profit organization that develops life cycle-based sustainability standards for products, services, and companies in addition to offering a third-party certifications.

International Sanitary Supply Association’s (ISSA) Cleaning Industry Management Standard - Green Building (CIMS-GB): Procedures and principles cleaning organizations shall follow to deliver efficient, quality service management and environmentally preferable cleaning programs. CIMS and CIMS-GB certification demonstrates an organization is prepared to deliver quality, customer-focused services and ensures an organization is capable of delivering a comprehensive green cleaning program based on **LEED: EB O&M** green-cleaning criteria.

Leadership in Energy and Environmental Design for Existing Buildings: Operations and Maintenance (LEED EB: O&M): A rating system established through the U.S. Green Building Council (USGBC) that encourages owners and operators of existing buildings to implement sustainable practices and reduce the environmental impacts of their buildings, while addressing the major aspects of ongoing building operations.

Licensee: Individual or entity that is not a state agency or state employee but occupies the space of a **User Agency** as part of a service contract or other arrangement with the User Agency to further the User Agency’s mission, or that occupies space as part of a contract with DCAMM to further DCAMM’s services. For example, a private consulting firm hired by an agency might be provided with offices inside the agency’s space. The consulting firm would be a licensee.

Occupant(s): The individuals or entities that occupy space in a Commonwealth facility by virtue of their status of a Controlling Agency, **User Agency**, or because they are permitted to use the



space as a **Licensee** of the User Agency.

Occupational Safety and Health Administration (OSHA): The federal agency responsible for ensuring safe and healthful working conditions by setting and enforcing standards and by providing training, outreach, education, and assistance.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of facilities.

Service Delivery and Performance Objectives: The supplemental document for each Standard that details the activities necessary for successful implementation of the Standard at **Commonwealth facilities**, as well as the performance goals for ensuring these activities meet the anticipated level of service. This document shall also align with the activities listed within the Service Level Matrix.

Service Level Matrix (SLM): A document that details each of the specific facility maintenance and management services that DCAMM OFMM will provide to a **User Agency** of a **Commonwealth facility** and any that may be retained by the User Agency or **Occupant**. This document is negotiated between OFMM and the User Agency or Occupant and forms part of the Facilities Management Agreement, Occupancy Agreement, or other similar agreement between DCAMM OFMM-and an Occupant.

Service Providers: The parties responsible for completing all maintenance and management activities governed by this standard. Service providers at the facility are internal facility staff, external contracted providers, or both.

User Agency: A state agency that has the legal right to use and occupy all or a portion of any building, facility, improvement, or property owned by the Commonwealth for its agency mission and purposes. A User Agency may have the exclusive use of an entire building, or in a multi-occupancy facility, it may have the exclusive use of part of the building and the right to use common areas with other users. A User Agency is also an “Occupant” as defined herein.

Requirements

1. Roles and Responsibilities

- 1.1 **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Cleaning Standard and its requirements at all **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** shall work with the **User Agency** to identify the specific scope of cleaning services at the facility, including but not limited to level of cleanliness, frequency of individual cleaning tasks, regulations, and statutory requirements related both to the cleaning services and to the User Agency type.
- 1.3 The **OFMM Director of Operations and Maintenance** shall oversee the completion of all activities under this Standard and shall determine the individuals responsible for providing these services at the facility. These individuals include, but are not limited to



the following:

- a. Facility Manager
- b. Facility Staff
- c. Contracted Service Providers
- d. Internal and external subject matter experts

1.4 All contracted cleaning service providers at **Commonwealth facilities** shall ensure **ISSA CIMS-GB** certification and maintain this certification for the life of the cleaning services contract.

2.0 Implementation

The **OFMM Director of Operations and Maintenance** shall ensure the following cleaning service activities occur at all **Commonwealth facilities**. The OFMM Director of Operations and Maintenance shall determine the individuals responsible for carrying out each activity listed below on a case-by-case basis depending on the specific facility.

2.1 Ensure an agreement between the **User Agency** and the **OFMM Director of Operations and Maintenance** to establish the actual level of cleaning services at the facility.

2.2 Execute, at a minimum, the base level services included in the **Service Level Matrix (SLM)**, which shall include but shall not be limited to specific itemized tasks related to the following:

- a. Cleaning and restocking bathrooms.
- b. Floor cleaning, servicing, and maintenance for attached carpeting, hard surfaces, and walk-off mats at all facility entrances (e.g., vacuuming, washing, sweeping, stripping, waxing, buffing) on a schedule consistent with recommendations from the IICRC (Institute of Inspection Cleaning and Restoration Certification) S100 Carpet Cleaning guideline.
- c. Cleaning of furniture, fixtures, and interior building surfaces (e.g., dusting, washing, and periodic steam cleaning) on a schedule consistent with recommendations from the IICRC S300 Upholstery Cleaning guideline.
- d. All related activities under the other FMMS, such as Solid Waste Management and Integrated Pest Services.
- e. All other applicable cleaning services as defined in the cleaning **service provider** contract for the specific facility.

2.3 Use **green cleaning** procedures and practices in compliance with all applicable standards including but not limited to the following:

- a. **ISSA CIMS-GB**
- b. **APPA**
- c. **Green Seal's** Environmental Standard for Commercial Cleaning Services (GS-42)



d. Leadership in Energy and Environmental Design (LEED), Existing Buildings: Operations and Maintenance Rating System (EB: O&M) Approved Green Products List for Statewide Contract FAC59 (or the successor contract)

2.4 Comply with applicable legal requirements relating to cleaning, chemical handling and tracking, and equipment maintenance and operation.

2.5 Define all required cleaning services at the facility by means of a **SLM**, which shall list each task and indicate the frequency and procedures of tasks.

a. Tasks and procedures shall reflect the requirements specific to all laws guiding the facility and the **User Agency**, the particular facility, the User Agency's use of the facility, and the User Agency's desired level of cleanliness.

2.6 Provide opportunity for **occupants** to self-identify chemical sensitivities, which may influence the cleaning products acceptable for use at the facility and in the **User Agency** space.

3.0 Materials and Equipment

This section identifies high-level regulations, requirements, and categories related to materials and equipment for providing cleaning services and shall not serve as an all-inclusive inventory.

3.1 Cleaning products and equipment shall comply with the **Environmentally Preferable Products (EPP)** Guide to Massachusetts Statewide Contracts and the requirements of **E.O. 515**. All acceptable products are listed on the Approved Green Products List for FAC59 (or any successor contract for these products).

3.2 **Green cleaning** products and equipment shall be used when available. Detailed information on acceptable products and materials is included in the **Service Delivery and Performance Objectives** document related to this Standard.

3.3 Cleaning services and products shall comply with all applicable health and safety requirements (e.g., **OSHA**).

3.4 Requests to utilize non-green cleaning products (whether in response to a specific condition or incident) must be submitted by DCAMM for review by OSD and TURI (Toxics Use Reduction Institute) to determine if alternative green cleaning equivalent products are available.

3.5 Cleaning products that fall within the scope of this standard include, but are not limited to the following:

- a. General-purpose, bathroom, glass, carpet and hard floor cleaners
- b. Sanitizers and disinfectants
- c. Specialized cleaners
- d. Disposable paper products and trash bags
- e. Hand soaps and cleaners



f. Equipment (e.g., floor buffers, vacuums, carpet steam cleaners)

3.6 Cleaning chemicals in use at the facility shall require regular evaluation to identify opportunities to reduce or eliminate their use while still meeting the cleaning service requirements of DCAMM OFMM, the facility, and the **User Agency**.

4.0 Training

The below training requirements are high-level and not all-inclusive. **The OFMM Director of Operations and Maintenance**, or approved designee shall approve and oversee training content and requirements, and ensure that all cleaning service providers have proper training in compliance with the requirements under their specific contracts.

4.1 An ongoing training program shall be in place for all cleaning **service providers** and **User Agency** representatives to ensure compliance with all cleaning-related requirements, procedures, processes, and products. required by DCAMM OFMM.

4.2 Training content shall follow applicable industry standards for cleaning procedures, as well as the manufacturers' specifications for cleaning products and equipment.

4.3 Training shall include but not be limited to use and safe handling of appropriate cleaning products and equipment and proper procedures and frequency for completing all cleaning tasks.

4.4 Training for all cleaning **service providers** shall include the approximate six-month training process required for **CIMS-GB** Certification, as well as any training programs offered through **Green Seal's** GS-42 Standard for Commercial Cleaning Services Program.

4.5 In addition to the above training programs, cleaning **service providers** shall comply with any other training requirements their contracts require (e.g. training regarding use, proper ventilation, and product MSDSs).

5.0 Communication

The below information is an overview of communication requirements pertaining to this Standard. **The OFMM Director of Operations and Maintenance** shall ensure specific and appropriate communication actions across staff, service providers, and facility occupants for the successful and transparent implementation of all standards.

5.1 **Service providers** shall not communicate directly with facility **occupants**. All communication with facility occupants shall only occur through the **OFMM Director of Operations and Maintenance**, the **facility manager**, or a designated representative.

5.2 The facility manager shall clearly communicate procedures to the proper parties for chemical handling and tracking, and equipment maintenance and operation.

5.3 Service providers shall follow the **Service Level Matrix (SLM)** and inform the **facility manager** of cleaning practices and chemical use. The communications plan is important for targeting facility occupants that are unusually sensitive to chemicals due to illness or allergies.



6.0 Recordskeeping

The **OFMM Director of Operations and Maintenance** shall ensure the following recordskeeping activities occur at all **Commonwealth facilities**. The OFMM Director of Operations and Maintenance shall determine the individuals responsible for tracking and collecting the below information on a case-by-case basis depending on the specific facility.

- 6.1 Conduct at minimum annual facility assessments of the appearance level and cleanliness of the facility to the extent required to meet all program certification requirements (e.g., **LEED, APPA, CIMS, and OSHA**) and to ensure that cleaning services meet the **User Agency's** agreed-upon service level.
- 6.2 Comply with all recordskeeping requirements of the **EPP Program**, applicable laws, and the cleaning **service provider's** contract.
- 6.3 Designate a cleaning services representative for the facility to collect and maintain the following:
 - a. A list of all approved cleaning products in addition to Material Safety Data Sheets (MSDS) for all cleaning products, which shall be kept in a location that is easily accessible by all facility occupants.
 - b. Product specification sheets from the manufacturer verifying that cleaning products and equipment meet the **green cleaning** requirements.
 - c. Cleaning equipment maintenance logs which shall include equipment purchase date, purchasing entity, and details of repairs and preventive maintenance.
 - d. Inventory of cleaning equipment and sustainable criteria for all powered equipment.
 - e. Maintenance logs for all hard floor care, which include maintenance task, date, number of coats of finish applied, and length of time between stripping and refinishing activities.
- 6.4 Cleaning service providers shall track the training of all staff members to document staff attendance and to identify any gaps in the training program.

Tools and Resources

All tools and resources related to the Cleaning Standard are included in both an appendix to the complete FMMS.

- International Sanitary Supply Association. *CIMS: Cleaning Industry Management Standard*
- Commonwealth of Massachusetts Executive Order 511: Employee Safety *"Establishing a Massachusetts Health and Safety Advisory Committee"*
- Operational Services Division FAC 59: Statewide contract for Green Cleaning Products
- Operational Services Division *FAC81: Janitorial Services, Environmentally Preferable*



Related Metrics

- Cost of all **cleaning chemicals**, products, materials, and equipment purchased for use at the facility.
- Total cost of **environmentally preferable** cleaning chemicals, products, materials, and equipment as a percentage of total products purchased.
- Total quantity of cleaning equipment and percentage of total quantity that is environmentally preferable.
- Results of the annual cleanliness audit of the facility to determine the appearance level of the facility and ensure service providers are meeting the agreed-upon level of service between the User Agency Audit is in line with requirements of LEED EB: O&M and in accordance with **APPA** Leadership in Educational Facilities' Custodial Staffing Guidelines.
- Custodial staffing is in accordance with **APPA's** "Custodial Staffing Guidelines."
- **Occupant** feedback based on an annual survey.



FMMS 04: Solid Waste Management Standard

Title	Standard No./Revision No.	Date
Solid Waste Management	FMMS 04 / REV.1	March 1 st , 2016

Purpose and Scope

This Standard establishes baseline requirements for solid waste and recycling services at **Commonwealth facilities**.

The Solid Waste Management Standard not only identifies the people responsible for waste disposal and recycling related services, but also includes guidelines for implementing the solid waste management plans that meet all State and Federal laws, with the ability to customize solid waste and recycling programs to address specific occupant needs at each **Commonwealth facility**. The actual scope of services for occupant spaces will be determined by the facility manager and a designated representative for the occupant agency.

Specific language in this standard should also be utilized in requesting quotes for service as well as inclusion in the contract itself.

State regulations and policies that guide solid waste management in the Commonwealth include, but are not limited to the following:

Executive Order 350 (Clean State Program)

Massachusetts Solid Waste Management Regulations: Waste Bans (310 CMR 19.017)

In 1990, the Massachusetts Department of Environmental Protection (MassDEP) introduced its first bans on landfilling and combustion of easy-to-recycle and toxic materials. Additional "waste bans" have been phased in over time.

The Massachusetts 2010-2020 Solid Waste Master Plan: Pathway to Zero Waste

outlines the vision of solid waste reduction and management in the Commonwealth, and sets the 2020 goal of reducing annual solid waste disposal 30 percent below the 2008 statewide total.

Hazardous and medical waste producing facilities must comply with specific legal requirements and will be addressed in more detail through facility-specific supplements to the FMMS that are not part of these baseline standards. For example, when providing service to any Department of Corrections facility contractors must meet all DOC rules and regulations.

Specific requirements and responsibilities can be reasonably varied in the SLM agreed upon by DCAMM and the user agency.



Related Standards

The following DCAMM Standards set forth requirements related to Refuse & Recycling:

- FMMS 02 Grounds and Landscape Maintenance
- FMMS 03 Cleaning
- FMMS 05 Routine Maintenance
- FMMS 14 Procurement of Equipment, Material and Building Services
- FMMS 15 Accessibility

Summary

The following topics and their related requirements are included in the Solid Waste Management Standard and detailed under the “Requirements” section of this document.

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Baseline Service Level Audit contains, but is not limited to the following components:

- Characterization of the type of waste generated by the facility (e.g. paper, plastic, bottles, cans, etc.)
- Types of collection containers in the facility (for trash, recycling, pallets, cardboard, etc.)
- How materials get to their final destination
- Approximate amounts and weights of waste generated during collection period.

Landfills are waste disposal sites for solid waste from human activities.

Occupants: The individuals or entities that occupy space in a Commonwealth facility by virtue of their status as a Controlling Agency, User Agency, or because they are permitted to use the



space as a Licensee of the User Agency.

Recycling: The collection, reprocessing, marketing and use of materials that were diverted or recovered from the solid waste stream.

A **recycling collection** area is located in regularly occupied space in a building for the collection of occupants' recyclables. A building may have numerous collection areas from which recyclable materials are typically removed to a central collection and storage area.

Reuse returns materials to active use in the same or a related capacity as their original use, thus extending the lifetime of materials that would otherwise be discarded.

Source reduction reduces the amount of unnecessary material brought into a building. One example is purchasing products with less packaging.

Tipping fees are charged by a landfill for the disposal of waste, typically quoted per ton.

Waste comprises all materials that flow from the building to final disposal. Examples include paper, grass trimmings, food scraps, and plastics. Waste refers to all materials that are capable of being diverted from the building's waste stream through waste reduction.

Waste disposal eliminates waste by means of burial in a landfill, combustion in an incinerator, dumping at sea, or any other way that is not recycling or reuse.

Waste diversion is a management activity that disposes of waste other than through incineration or the use of landfills. Examples include reuse and recycling.

Waste reduction includes both source reduction and waste diversion through reuse or recycling.

Waste stream is the overall flow of waste from the building to a landfill, incinerator, or other disposal site

Requirements¹

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**.
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**

¹ All documents referenced under the "Requirements" section are included in the supplemental "Service Delivery" package.



c. Contracted **Service Providers**

1.3 The Solid Waste Management Standards apply to the performance of all **waste disposal** and **recycling** services establishing a baseline for all **Commonwealth facilities**, and require the involvement of Facility Managers, Facility Maintenance Staff, Contracted Service Providers, and the building **occupants**.

1.4 Facility Managers

- a. Work with DCAMM and the building **occupants** to develop a solid **waste** management policy that establishes hierarchy for management of waste within the facility.
- b. Work with DCAMM and building occupants to identify a solid **waste** management plan that outlines service levels, locations, equipment and staff responsibility.
- c. Conduct a baseline service level audit identifying **waste** flows through the facility and identifying responsible parties for oversight/management of each identified waste flow.
- d. Work with DCAMM and appointed representative to create a cleaning services contract for occupants based on their identified needs and level of service. This contract will clearly define all cleaning related tasks and requirements, as well as costs to the occupants.
- e. Work with the Operational Services Division (OSD) to obtain a Solid **Waste** and Recycling Services provider (either combined or separate for waste disposal and recycling) for the facility in compliance with FAC33: Statewide Contract for Solid Waste Collection Services (haulers and waste facilities)
- f. Adhere to municipal by-laws, and comply with the **waste** bans.
- g. Ensure all facility staff, solid waste service providers, janitorial service providers and building occupants are aware of the solid **waste** management requirements for the facility, as well as materials regulated under the Massachusetts Waste Bans.
- h. Ensure that banned materials collected do not go for disposal at landfills, municipal **waste** combustion facilities, or transfer stations. Implement recycling collection programs with haulers that ensure collection and management of all restricted materials in a way that prevents disposal.
- i. Use **waste** ban requirements to improve recycling by occupants and hold haulers responsible for recycling services.
- j. Designate someone in the facility to act as the recycling coordinator.

1.5 Contracted **Waste** Service Providers

- a. Collect refuse and **recycled waste** at a facility or group of facilities on a regular schedule as identified in the contract between the service provider and the Facility Manager/DCAMM (i.e. frequency, process, procedures, notifications, etc.).
- b. Assist in the development of a recycling program that works and is cost-effective, including specific suggestions on the types of materials to recycle and the



collection and storage system that would work best for the facility.

- c. Comply with all occupant specific regulations and statutory requirements (i.e. hospitals, detention centers, schools, childcare, etc.).
- d. Comply with FAC33: Statewide Contract for Solid **Waste** Collection Services (haulers and waste facilities)
- e. Comply with Executive Order 515 “Establishing an Environmental Purchasing Policy”.
- f. Responsible for leaving the area surrounding the container(s) in the same condition it was in prior to the pick-up.

1.6 Janitorial Service Providers

- a. Empty trash & **recycling** bins and bring to collection/storage area for **waste** and recyclables, (i.e. loading dock) where contracted waste hauler will pick-up waste and recycling for transport to processing facility.
- b. Ensure that separated **recyclables** and trash are kept separate and placed in the proper container when bringing them to the collection/storage area.

1.7 Building Occupants

- a. Building occupants are responsible for understanding the solid **waste** and recycling policies for the building.
- b. Building occupants are responsible for minimizing the materials they dispose into garbage cans, and placing waste materials to the appropriate end-use location (i.e. **recycling** bin, **reuse**, hazardous waste bin, etc.).

2.0 Implementation

2.1 Implement an environmentally preferable solid **waste** management policy that addresses **reuse, recycling**, or composting of products used during regular operations of the building, as well as non-regular building activities (i.e. renovations) Products include, but are not limited to the following:

- a. Ongoing waste
 - Standard, daily use items i.e. paper, cardboard, plastics, packaging, etc.
 - Food
- b. Durable goods waste
 - Office equipment, appliances, and audiovisual equipment
 - Electric powered equipment
 - Furniture
- c. Hazardous waste
 - Mercury containing materials (i.e. batteries and lamps)



- Medical Waste
 - Construction waste
 - Laboratory and chemical wastes
- 2.2 Facility Managers shall identify, if possible, what **recyclable** items are generated in large quantities and ensure they are a focus of the recycling program.
- 2.3 Facility Managers shall retain flexibility with the contracted solid **waste** service provider to alter the recycling program to change or add materials during the agreement period.
- 2.4 Facility Managers shall ask contractors to provide credits for **recyclable** materials that are uncontaminated and have a market value.
- 2.5 Collection and Storage Procedures include, but are not limited to the following:
- a. Designate and visibly mark easily accessible central collection and storage locations for **recyclable** materials, including mixed paper, corrugated cardboard, glass, plastics, and metals.
 - b. Establish **recycling** collection points within common areas, such as classrooms, break rooms, open offices, and any location where occupants may need to recycle. Recycling areas should include signage to discourage contamination, protection from the elements, and security for high-value materials to discourage illegal disposal.
 - c. The central collection and storage area should provide easy access for both maintenance staff and collection vehicles.
 - d. Consider how **recycling** activities might affect a building's indoor environmental quality. Activities that create odors, noise, and air contaminants should be isolated or performed when the building is not occupied.
 - e. For sites with multiple buildings it may be possible to create a central collection area that is outside a building's footprint. In this case, establish a continuing strategy for transporting **recyclable** materials to the separate collection area.
 - f. For sites with landscaping, consider designating an area for collecting plant debris.
 - g. Establish safe storage areas for hazardous **waste** materials (i.e. batteries, mercury-containing lamps, waste oil and other automotive fluids, HVAC lubrication, etc.).
 - h. Determine collection frequency for both internal processes and pick-up by the contracted service provider.
 - i. Contractors must collect all **waste** and **recyclable** materials in accordance with the Massachusetts Waste Ban Regulations and inform Building Managers of any incidences of non-compliance.
 - j. Collection points must be left in clean and sanitary condition. Tops and access doors on containers and dumpsters must be closed after each pick up and materials frozen in containers must be removed or container replaced.



- k. All contractors must agree to reduce collection frequency or change the size of collection containers at any time during the agreement period should a facility request such a reduction as a result of greater **recycling** and/or **waste** prevention activities. Such reductions in collections should result in associated reductions in price.

3.0 Materials and Equipment

- 3.1 Facility Managers shall work with DCAMM and contracted service providers to determine the appropriate collection bins for the facility. (i.e. under desk bins, common area bins, collection area dumpsters, etc.)
- 3.2 For all appropriate services, contracted service providers must provide containers which are fully enclosed, leak proof, fire retardant, labeled, and in good condition (for all outdoor containers).
- 3.3 Contractors shall clean containers on a schedule to be agreed upon by the contractor and the Building Manager.
- 3.4 Comply with all requirements established by the “Environmentally Preferable Product” Procurement Program (EPP Program), established under EO 515.

4.0 Regulatory Compliance

- 4.1 Ensure procedures are in place and clearly communicated for the proper disposal of hazardous **wastes** and medical wastes.
- 4.2 Establish a communications plan to inform building occupants of both commonly used materials that contain hazardous materials not permitted in traditional **waste** streams, as well as proper disposal of hazardous materials.
- 4.3 Ensure all service providers are current on all applicable health and safety training related to the services they provide and the products they use on a regular or infrequent basis. (i.e. OSHA, blood borne pathogens, sharps, etc.)
- 4.4 Adhere to all **Waste** Material Regulations, including, but not limited to the following.
- a. **310 CMR 19.000: Waste Bans.** The following materials and items are prohibited from disposal and/or transfer for disposal in Massachusetts:
- Asphalt pavement, brick & concrete (ABC Waste)
 - Cathode ray tubes
 - Clean gypsum wallboard Commercial organic material (food material, only from facilities that dispose of one ton or more per week) (effective October 1, 2014)
 - Ferrous & non-ferrous metals
 - Glass & metal containers
 - Lead acid batteries
 - Leaves & yard waste



- Recyclable paper, cardboard & paperboard
 - Single resin narrow-necked plastics
 - Treated & untreated wood & wood waste (banned from landfills only)
 - White goods (large appliances)
 - Whole tires (banned from landfills only; shredded tires acceptable)
- b. **Mercury Management Act**, which was passed in 2008 and prohibits the disposal of any product that contains mercury.
- c. **Massachusetts Bottle Deposit Law (BDL)** places a five cent deposit on all carbonated soft drinks, beer, malt beverages and sparkling water sold in Massachusetts with the assurance that consumers can redeem their empty beverage containers for cash.

5.0 Training

- 5.1 Implement an ongoing training program for all facility maintenance staff and contracted **waste** service providers to ensure compliance with all waste management related requirements, procedures, and processes approved by the Commonwealth. Training content will follow all applicable industry standards for waste management.
- 5.2 Following an agreement to provide waste and/or recycling services to a facility, contractors must provide, at no cost, the following training, assessment, and educational services to explain the recycling program, the associated benefits and any specific procedures that need to be followed. .
- 5.3 Facility Managers shall work with the contracted service provider to provide education to all departmental employees (contractors may charge for this training or Eligible Entities may choose other recycling trainers from the Statewide Training Contract).
- 5.4 In addition to the above training, assessment, and educational requirements, contractors are responsible for identifying and meeting all training requirements in place at the time they enter into a contract with the Commonwealth for waste management services.

6.0 Communication

- 6.1 Include janitorial staff when discussing **waste** management options; ask contractors to propose training/educational activities to promote **recycling**.
- 6.2 Get top management support for the **recycling** program through a memo, email or other department-wide communication.
- 6.3 Facility Managers shall teach **occupants**, maintenance personnel and other building users about activities to reduce and reuse materials instead of recycling, which will reduce the volume of recyclables.
- 6.4 Facilities shall have appropriate signage to inform all building occupants about the solid waste and recycling programs in place at the facility.



6.5 Facilities shall have appropriate signage by garbage and **recycling** bins to ensure proper solid **waste** disposal by building occupants. Signage shall include at a minimum the types of materials and products that should and should not be disposed of in each bin.

6.6 Facilities shall have signage that identifies how and where to dispose of materials and products not allowed in the trash or **recycling** bins (i.e. batteries, electronics, light bulbs, etc.)

7.0 Recordskeeping

7.1 A solid **waste**/trash stream audit is necessary for all buildings owned and managed by the Commonwealth to identify the following solid **waste** related issues for the facility.

- a. Determine the profile (amount and composition) of the solid waste/trash stream;
- b. Identify efficient methods for the collection, storage, and transfer of wastes for disposal recycling, and composting;
- c. Determine the right service level for solid waste/trash collection and removal to minimize waste shipments.

7.2 **Recycling** and **Waste** Reports: Collect monthly hauler reports for all buildings owned and operated by the Commonwealth. The recycling and waste hauling reports above shall contain sufficient data to calculate waste diversion and waste removal costs. Information to be tracked on a regular basis includes, but is not limited to the following:

- a. Records by material category (i.e. wood, paper, plastic, etc.) for type, quantity, and weight of each material category that is salvaged, reused, recycled, treated, or disposed.
- b. Total quantity of waste recycled as a percentage of total waste.
- c. Records of Sales of salvageable materials sold or donated to individuals and organizations.
- d. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable materials by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices. Include documentation for back-charge fees, if any, for improperly segregated materials.
- e. Disposal Records: Indicate receipt and acceptance of waste by landfills, municipal waste combustion facilities, and transfer stations licensed to accept waste materials. Include manifests, weight tickets, receipts, and invoices.
- f. Records that document proper handling and disposal of all hazardous wastes.



Tools and Resources

All tools and resources are also in an appendix to the complete FMMS.

- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Massachusetts Executive Order No. 484: Leading by Example – Clean Energy and Efficient Buildings, dated April 18, 2007.
- Massachusetts Executive Order No. 515: Establishing an Environmental Purchasing Policy, dated October 27, 2009.
- Massachusetts Solid Waste Master Plan
- Massachusetts Toxics Use Reduction Reform Act of 2006
- Massachusetts Zero Mercury Strategy
- MA Department of Environmental Protection (DEP): *Waste Wise Program*
- Municipal Compliance Fact Sheet: Waste Bans (<http://www.mass.gov/eea/agencies/massdep/recycle/regulations/waste-bans.html>)
- Operational Services Division (OSD) FAC33: How to Use the Solid Waste and Recycling Services Statewide Contract
- Operational Services Division (OSD) FAC82: Hazardous/Universal, Medical, and Electronic Waste Disposal and Emergency Response.
- Recycling Works MA. [RecyclingWorks](#)

Related Metrics

A record by material category (i.e. wood, paper, plastic, etc.) of the type and quantity, by weight, of each material category salvaged, reused, recycled, treated, or disposed.

Total quantity of waste recycled as a percentage of total waste.



Title	Standard No./Revision No.	Date
Routine Maintenance	FMMS 05 / REV.1	March 1 st , 2016

Purpose and Scope

The Routine Maintenance Standard establishes the minimum requirements for carrying out day-to-day maintenance needs and responding to unplanned work order requests in all **Commonwealth facilities**.

Routine maintenance activities involve **facility managers, custodians, grounds workers, general maintenance crews**, and as necessary, specialized **contracted service providers**.

All **routine maintenance** services should reflect the actual systems and equipment at the facility and the specific needs of the occupant agency; therefore, only high level and summary requirements are included within this document. The actual scope of services will be determined by the facility manager and, when applicable, a designated representative for the occupant agency.

The goals of the Routine Maintenance Standard are to:

- Maintain a safe, healthy, and comfortable environment for occupants
- Maintain, or restore the facility and all related elements (i.e. finishes, structure, landscape, equipment and systems) to ensure they serve their intended purpose
- Provide a timely and effective response to work-order requests
- Maximize the productive lifespan of the building and equipment
- Maximize building efficiency
- Lower overall operating costs
- Protect the Commonwealth’s capital investments
- Promote Environmental Sustainability

Childcare centers, hospitals, correctional facilities and any other specialized facilities must comply with specific requirements set forth in regulatory standards, and addressed in facility-specific supplements to the FMMS.

Specific requirements and responsibilities can be reasonably varied in the SLM agreed upon by DCAMM and the user agency.

Related Standards

The following DCAMM Standards set forth requirements related to Routine Maintenance:

- FMMS 02 Grounds and Landscape Maintenance



FMMS 05: Routine Maintenance Standard

- FMMS 03 Cleaning
- FMMS 04 Solid Waste Management
- FMMS 06 Preventive and Scheduled Maintenance
- FMMS 07 Integrated Pest Management
- FMMS 08 Health and Safety
- FMMS 09 Emergency Management
- FMMS 10 Energy Sustainability Management
- FMMS 14 Procurement of Equipment, Material & Building Services
- FMMS 15 Accessibility

Summary

The following topics and their related requirements are included in the Routine Maintenance Standard and detailed under the “Requirements” section of this document.

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Custodial Maintenance is the cleaning and upkeep of the facility and includes the routine (daily, monthly, and semi-annual) tasks and capital investments for cleaning equipment and supplies).

Emergency Maintenance consists of situations requiring immediate attention due to a failure in or around the facility that can cause significant damage to the building, building systems, and/or equipment. Such emergencies can create an unmanageable situation and/or unsafe physical conditions which require immediate attention.



Landscape Maintenance consists of the upkeep of the landscape, flower beds, trees and shrubs, water gardens and hardscape areas such as parks, parking lots and walkways around the building. This not only includes the maintenance of the landscape and hardscape areas but also seasonal tasks such as snow removal, leaf clean-up and removal and winter preparation of the landscape and water gardens.

LEED for Existing Buildings: Operations and Maintenance (LEED EB: O&M) is a rating system established through the U.S. Green Building Council (USGBC) that encourages owners and operators of existing buildings to implement sustainable practices and reduce the environmental impacts of their buildings, while addressing the major aspects of ongoing building operations. All buildings (as defined by standard building codes) are eligible for certification under LEED EB: O&M. It is targeted at single buildings, whether owner occupied, multi-occupant, or multiple-building campus projects. The prescriptive and performance strategies of LEED EB: O&M are intended to provide operational benefits throughout the life of the building. If these strategies are continued, a building can maintain and even improve its performance over time. Projects that certify under any version of LEED for Existing Buildings must recertify at least once every five years in order to keep their certification current.

Routine Maintenance refers to simple small-scale activities and specific work-order requests associated with general upkeep and continued operation of a building, site, equipment, machine, plant, or system against normal wear and tear. Typically, Routine Maintenance includes activities that are completed by the facility management staff and regularly contracted facility service providers rather than specialized professionals. Routine maintenance is done within a specific period of time e.g. daily, weekly, monthly, etc.

Massachusetts Facilities Managers Association (MAFMA) is a network of state facilities managers that meet periodically to discuss specific topics of interest with the aim toward increased information sharing and problem solving.

Operational Efficiency represents the life-cycle, cost-effective mix of **preventive, predictive,** and reliability-centered maintenance technologies, coupled with equipment calibration, tracking, and computerized maintenance management capabilities all targeting reliability, safety, occupant comfort, and system efficiency.

Preventive (Predictive) Maintenance is proactive work performed by various trades personnel based on scheduled inspections, scheduled testing, and minor element replacements. Preventive Maintenance consists of a series of maintenance requirements that provide a basis for planning, scheduling, and executing scheduled maintenance, planned versus corrective for improving equipment life and to avoid any unplanned maintenance activity/minimize equipment breakdowns.² Predictive Maintenance also involves the use of electronic monitoring equipment to warn of problems/conditions before they affect equipment performance.

Reactive (Corrective) Maintenance is unplanned repair or adjustment of equipment or

¹ Glenn Hunt, Peripheral Systems, Inc., *Comprehensive Facility Operation & Maintenance Manual*. Last updated: 10-04-2013. Accessed on 10/20/2013 via http://www.wbdg.org/om/om_manual.php



components.

Subcontracted Maintenance is maintenance that is typically performed by outside contractors or by facility staff outside of their usual job description.

Operational Efficiency represents the life-cycle, cost-effective mix of **preventive, predictive,** and reliability-centered maintenance technologies, coupled with equipment calibration, tracking, and computerized maintenance management capabilities all targeting reliability, safety, occupant comfort, and system efficiency.

Work Order is a written (or electronic) request for a task or project to be completed. The order can be sent from an occupant to a facility manager, from a customer to a contractor, or internally from one company department to another. Work orders can range in scope from small (i.e. fixing a leak), to large (i.e. replacing old plumbing).

Requirements³

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance**, or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**.
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**
- 1.3 The Routine Maintenance Standard applies to the baseline performance of all related services at facilities under **Commonwealth facilities** and requires the involvement of Facility Managers, Facility Maintenance Staff, Contracted Service Providers, and the building occupants.
- 1.4 Facility Managers
 - a. Develop and implement a **Routine Maintenance Plan (RMP)** when DCAMM assumes responsibility for the care and control of a facility.
 - b. Review, revise, and adjust the RMP either as conditions warrant, or annually at a minimum.
 - c. Collect and prioritize work-order requests.
 - d. Create daily and weekly maintenance plans to coordinate activities and priorities of

³ All documents referenced under the "Requirements" section are included in the supplemental "Service Delivery" package.



all facilities maintenance staff and contracted service providers.

- e. Track **routine maintenance** activities in the Commonwealth's Capital Asset Management Information System (CAMIS) database program.
- f. Work with the Operational Services Division (OSD) and DCAMM to contract for routine maintenance services under a statewide contract as applicable.
- g. Ensure all routine maintenance service providers have the appropriate licensing and certifications.
- h. Ensure that all routine maintenance performed at the facility complies with the appropriate rules and regulations.

1.5 On-site Facility Staff and Contracted Service Providers

- a. Most daily tasks fall under the scope of routine maintenance and are completed by the on-site facility staff. Contracted service providers can also provide these services if there is insufficient capacity within the on-site facility staff.
- b. Specific staffing needs include, but is not limited to, the following:
 - General Maintenance Crews
 - Custodians (various levels)
 - Grounds Workers and Landscapers
 - Electricians
 - Plumbers/Pipefitters
 - HVAC/Controls Mechanics
 - Carpenters
 - Painters
 - Trade Workers
 - Locksmiths
- c. Assist the Facility Manager with the creation and implementation of a RMP.
- d. Identify routine maintenance needs and report them to the Facility Manager.
- e. Work under the direction of the Facility Manager to carry out day-to-day maintenance needs and respond to unplanned work order requests.
- f. Comply with all requirements, rules, and regulations applicable to the **routine maintenance** services provided.
- g. Comply with all occupant specific regulations and statutory requirements (i.e. hospitals, detention centers, schools, childcare, etc.).

1.6 Occupants

- a. Submit work order requests using CAMIS, which is the established building



notification system.

2.0 Implementation

- 2.1 The scope of services included within the *Routine Maintenance Standard*, includes, but is not limited to the following:
- a. Custodial Maintenance
 - b. **Landscape Maintenance**
 - c. **Reactive (Corrective) Maintenance** (i.e. work order requests, etc.)
 - d. **Emergency Maintenance** (i.e. system failure, floods, etc.)
- 2.2 Typical **routine maintenance** tasks include, but are not limited to responding to the following requests:
- a. HVAC - space temperature is not within acceptable limits
 - b. Plumbing - dripping faucet, clogged toilet, leaking pipe
 - c. Electrical - power malfunction or burned out light fixture
 - d. Finishes - walls are scratched or faded, floor tiles are broken
 - e. Carpentry - broken door, ceiling tile replacement
- 2.3 A **Routine Maintenance** Plan (RMP) shall be created to identify the activities and processes involved in providing routine maintenance services specific to the needs of the facility and its occupants.
- 2.4 The RMP shall contain the following:
- a. Overview of potential routine maintenance activities
 - b. Staffing:
 - List of on-site maintenance staff and contracted service providers
 - Tasks the staff can perform
 - Contract tasks
 - Schedules
 - Training and certification needs
 - c. Equipment list and parts inventory
 - d. A list of **routine maintenance** activities and the associated procedures, practices, and performance level
 - e. Prioritization standard (Process for receiving and prioritizing **work-order** requests)
 - f. The computerized system in place to record, manage and communicate routine maintenance activities and requests
- 2.5 The RMP will determine the actual extent of services necessary at each facility, including:



- a. Facility use / occupancy
- b. Occupants' desired service level
- c. Prioritization thresholds
- d. Identified level of need
- e. Detailed task and procedure lists
- f. Schedule and frequency of services

2.6 All **routine maintenance** services undertaken in **Commonwealth facilities** must maintain a minimum *Facility Maintenance Standard* of "Level 4: Comprehensive Maintenance."⁴

3.0 Materials and Equipment

- 3.1 Sustainable methods and applications shall be employed whenever possible for all products within the scope of this standard, in accordance with EO 515: Environmentally Preferable Products.
- 3.2 Products shall conform to all Federal, State, and local standards for quality and safety requirements.
- 3.3 The Facility Manager and contracted service professionals shall make available at all times the product-specific information for products used to **perform routine maintenance**, including, but not limited to the following:
 - a. Product name and manufacturer
 - b. Product label
 - c. Product cut sheet, or specification
 - d. Material Safety Data Sheets (MSDS)

4.0 Regulatory Compliance

- 4.1 All work shall comply with the applicable requirements of 29 CFR §1910, Federal, State, municipal safety, environmental and health requirements where applicable. Where there is a conflict between applicable regulations, the most stringent shall apply.

5.0 Training

- 5.1 Facility Managers will provide training opportunities for all to facility staff, contracted service providers, and facility occupants, including, but not limited to the following.
 - a. Systems and equipment training
 - b. Work request processing and prioritization levels

⁴ Commonwealth of Massachusetts, *Standards for Building Maintenance: Guidance for Indicator Levels*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/docs/dcam/ofm/maint-st-letter-2010-2011.pdf>



- c. Maintenance procedures and practices (by level of service provision)
 - d. CAMIS training
 - e. OSHA/Safety training
- 5.2 DCAMM will review and approve training content and requirements for all service providers. Training content will follow all applicable industry standards, as well as the manufacturer's specifications for all products and equipment.
- 5.3 The **Massachusetts Facilities Managers Association (MAFMA)** is a network of state facilities managers and facility staff that:
- a. Meet periodically to discuss specific topics of interest.
 - b. Disseminate information on training opportunities and new technologies.
 - c. Inform facilities personnel of proposed regulatory or statutory changes.
 - d. Maintain working committees to address issues of interest to facilities operators and managers.

6.0 Communication

- 6.1 Provide information (signage, occupant handbook, etc.) to the occupants identifying the process for submitting **work order** requests.
- 6.2 Provide notice to occupants if any **routine maintenance** needs or corrective actions will have an impact on their daily operations (i.e. lavatory out of order, system shut-down, spill in common area, etc.). Communication shall include description of activity, impact to occupants, any applicable safety information, and duration of maintenance activity.

7.0 Recordskeeping

- 7.1 Capital Asset Management Information System (CAMIS) program, which is a database inventory of state facility infrastructure – both major (i.e. elevators, HVAC and its major related components) and minor (fire extinguishers by location), as well as tasks (i.e. cleaning windows, cleaning carpets, etc.).
- 7.2 CAMIS enterprise asset management (EAM) and maintenance software program used at all facilities owned and operated by the Commonwealth to help automate all aspects of maintenance operations, including equipment history, scheduling, preventive maintenance, work orders, labor and expense tracking, procurement and reporting.
- 7.3 The Facility Manager shall track routine maintenance and work-order request activities and indicators in an effort to generate useful metrics that inform future decisions by the Facilities Manager and DCAMM about the routine maintenance program and the service providers. (See "Related Metrics" section below for a list of information that shall be tracked at all facilities owned and operated by DCAMM).



Tools and Resources

- *ASHRAE Guidelines 4-2008 Preparation of Operating and Maintenance Documentation for Building Systems*
- *CAMIS Standard Operating Procedures*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/camis/standard-operating-proc/>
- Commonwealth of Massachusetts, Standards for Building Maintenance: *Status Chart and Guidance for Indicator Levels*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/docs/dcam/ofm/maint-st-letter-2010-2011.pdf>
- Division of Capital Asset Management and Maintenance, Office of Facilities Management and Maintenance. *Facilities O&M Manual for Beginners: "What you need to think about when maintaining your facilities!"* Accessed via: <http://www.mass.gov/anf/docs/dcam/mafma/manuals/dcam-fm-manual-11-7-6.pdf>
- Hunt, Glenn. *Comprehensive Facility Operation & Maintenance Manual*. Peripheral Systems, Inc. Last updated: 10-04-2013. Accessed via Whole Building Design Guide (WBDG) http://www.wbdg.org/om/om_manual.php
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4. (released November 2013)
- Massachusetts Statewide Contracts for Healthier Schools: *How to Use Massachusetts Contracts for Pollution Prevention in Schools*. Operational Services Division: Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Operational Services Division (OSD): *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts, Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Sebesta Blomberg and Associates, Inc., *Facility Operation & Maintenance Plan, UMASS Amherst - New Life Science Building*. Project No. 700796.00. August 2, 2013.

Related Metrics

It is important to track the following metrics to create a comprehensive view of activities and purchasing that is occurring at facilities under the care and control of DCAMM:

- Capacity factor (actual operation vs. full-utilization operation)
- Work orders generated vs. closed out
- Backlog of corrective maintenance (number of requests and duration)
- Safety record (number of loss-of-time incidents, or total number of reportable incidents)



FMMS 05: Routine Maintenance Standard

- Energy use
- Inventory control
- Pieces of equipment in Maximo
- Overtime worked
- Maintenance Spending
- Emergency Maintenance vs. Total Maintenance
- Environmental record
- Absentee rate
- Staff turnover
- Purchases (equipment, products and materials) Water usage



Title	Standard No./Revision No.	Date
Preventive and Scheduled Maintenance	FMMS 06 / REV. 1	March 1 st , 2016

Purpose and Scope

The Preventive and Scheduled Maintenance Standard establishes minimum requirements to carry out preventive and scheduled maintenance services in **Commonwealth facilities**.

All **preventive** and scheduled maintenance services should reflect the actual systems and equipment at the facility and the specific needs of the occupant agency; therefore, only high level and summary requirements are included within this document. The actual scope of services will be determined by the facility manager and, when necessary, a designated representative for the occupant agency.

The goal of the Preventive and Scheduled Maintenance Standard is to effectively and efficiently support the life cycle of the facility by eliminating unplanned shutdowns and realizing life-cycle cost savings. This high-level goal will be achieved by accomplishing the following:

- Maintenance of a safe, healthy, and comfortable environment for occupants.
- Replacement of system components at the appropriate time to ensure cost-effective, reliable plant operation.
- Prolong equipment life and maximize the productive lifespan of the building.
- Maximize building efficiency.
- Optimize inventory control.
- Lower operating costs and control large spending spikes by avoiding a deferred maintenance approach and incorporating a planned budget approach.
- Protect the Commonwealth's capital investments.

Childcare centers, hospitals, correctional facilities and any other specialized facilities must comply with specific requirements set forth in regulatory standards, and addressed in facility-specific supplements to the FMMS.

Specific requirements and responsibilities can be reasonably varied in the SLM agreed upon by DCAMM and the user agency.



Related Standards

The following DCAMM Standards set forth requirements related to Preventive and Scheduled Maintenance:

- FMMS 02 Grounds and Landscape Maintenance
- FMMS 03 Cleaning
- FMMS 04 Solid Waste Management
- FMMS 06 Routine Maintenance
- FMMS 07 Integrated Pest Management
- FMMS 08 Health and Safety
- FMMS 10 Energy Management and Sustainability
- FMMS 13 Facilities Information Management
- FMMS 14 Procurement of Equipment, Material and Building Services
- FMMS 15 Accessibility

Summary

The following topics and their related requirements are included in the Preventive and Scheduled Maintenance Standards and detailed under the “Requirements” section of this document.

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Capital Asset Management Information System (CAMIS) program is a database inventory of



state facility infrastructure – both major (i.e. elevators, HVAC and its major related components) and minor (fire extinguishers by location), as well as tasks (i.e. cleaning windows, cleaning carpets, etc.). CAMIS includes an enterprise asset management (EAM) and maintenance software program used at all facilities owned and operated by the Commonwealth to help automate all aspects of maintenance operations, including equipment history, scheduling, preventive maintenance, work orders, labor and expense tracking, procurement and reporting.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management responsibilities. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as commonwealth owned.

A **Computerized Maintenance Management System (CMMS)** is a utility that maintains a computer database of information about an organization's maintenance operations to assist facility maintenance staff in maximizing their effectiveness. A CMMS achieves this goal by tracking work orders, monitoring system reliability and repair/maintenance costs, and providing **preventive maintenance** tools.

Custodial Maintenance is the cleaning and upkeep of the facility and includes the routine (daily) tasks and capital investments for cleaning equipment and supplies.

Emergency Maintenance consists of situations requiring immediate attention because of a failure in or around the facility that would cause significant damage to the building, building systems, and/or equipment. Such emergencies can create an unmanageable situation and/or unsafe conditions and needs to be rectified immediately.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Operations and Maintenance Plan (FOMP) Provides the facility owners, operators, and occupants with detailed information on the building systems and operations as well as a foundation for training and system analysis. The FOMP also provides a means to reduce operating costs through a comprehensive maintenance assessment and implementation plan that looks at all maintenance at a facility and identifies best practices to save time and money, while increasing efficiency and the productive life of equipment.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Landscape Maintenance consists of the upkeep of the landscape, flowerbeds, trees & shrubs, water gardens, and hardscape areas such as parks, parking lots, and walkways around the building. This not only includes the maintenance of landscape and hardscape areas but also seasonal tasks such as snow removal, leaf clean-up & removal, and winter preparation of the landscape and water gardens.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of **Commonwealth facilities**.

Operational Efficiency represents the life-cycle, cost-effective mix of **preventive, predictive,** and reliability-centered maintenance technologies, coupled with equipment calibration, tracking,



and computerized maintenance management capabilities all targeting reliability, safety, occupant comfort, and system efficiency.

Preventive (Predictive) Maintenance is proactive work performed by various trades personnel based on scheduled inspections, scheduled testing, and minor element replacements. Preventive Maintenance consists of a series of maintenance requirements that provide a basis for planning, scheduling, and executing scheduled maintenance, planned versus corrective for improving equipment life and to avoid any unplanned maintenance activity/minimize equipment breakdowns.⁵ Predictive Maintenance also involves the use of electronic monitoring equipment to warn of problems/conditions before they affect equipment performance.

A **Preventive Maintenance Plan (PMP)** will typically identify Preventive Maintenance task descriptions and schedules, troubleshooting, replacement parts, service providers, operating quantity and unique storage requirements for spare parts. The Plan also lays out a regularly scheduled inspection of building interior and exterior equipment and systems for signs of wear and tear that will require routine and/or corrective maintenance. This inspection process is performed by building facilities staff as well as contracted service providers.

Subcontracted Maintenance is maintenance that is typically performed by outside contractors or by facility staff outside of their usual job description.

Requirements⁶

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**

1.3 Facility Managers

- a. Develop a Facility Operations and Maintenance Plan (FOMP) and a **Preventive Maintenance Plan (PMP)** when DCAMM assumes responsibility for the care and

⁵ Glenn Hunt, Peripheral Systems, Inc., *Comprehensive Facility Operation & Maintenance Manual*. Last updated: 10-04-2013. Accessed on 10/20/2013 via http://www.wbdg.org/om/om_manual.php

⁶ All documents referenced under the "Requirements" section are included in the supplemental "Service Delivery" package.



control of a facility.

- b. Review, renew, and adjust the FOMP and the PMP, either as conditions warrant, or annually at a minimum.
- c. Create the timeline and schedule for all preventive maintenance activities.
- d. Work with the Operational Services Division (OSD) and DCAMM to contract for **preventive maintenance** services under a statewide contract as applicable. Preventative maintenance services estimated at more than \$10,000 dollars shall be bid under the auspices of Chapter CH.149.
- e. Coordinate activities of all facilities maintenance staff and contracted service providers.
- f. Track all facility equipment in the **Commonwealth's Capital Asset Management Information System (CAMIS)** database program. This includes the entry, updating & management of facility equipment and their associated preventive maintenance procedures.
- g. Update and manage major capital equipment and the associated preventive maintenance entered into **CAMIS** by DCAMM.

1.4 Contracted Service Providers

- a. Assist the **Facility Manager** with the creation and implementation of the FOMP and the PMP as applicable.
- b. Comply with all requirements rules and regulations applicable to the services provided.
- c. Comply with all occupant specific regulations and statutory requirements (i.e. hospitals, detention centers, schools, childcare, etc.).
- d. **Preventive Maintenance** service providers include crafts specializing in:
 - Painting
 - Carpentry
 - Locksmithing
 - Plumbing
 - Metal fabrication
 - HVAC
 - Controls
 - Electrical
 - Commissioning
- e. Independent, third party commissioning agents shall provide commissioning services (commissioning, continuous commissioning, or retro-commissioning) for Commonwealth facilities.



2.0 Implementation

- 2.1 The general scope of services included within the **Preventive** and Scheduled Maintenance Standard includes, but is not limited to the following services:
- a. Inspection and servicing of:
 - HVAC
 - Lighting and electrical
 - Plumbing
 - Process equipment
 - Elevators
 - Roofs
 - Fire safety/protection and alarms
 - Cleaning and landscape/grounds equipment (i.e. floor buffers, lawn mowers, etc.)
 - b. Cleaning and lubricating of all equipment and systems
 - c. Monthly pest inspections to identify potential areas for pest infestation (See FMMS 07 Integrated Pest Management)
- 2.2 All **preventive maintenance** services at **Commonwealth facilities** must maintain a minimum *Facility Maintenance Standard* of “Level 4: Comprehensive Maintenance.”⁷
- 2.3 The Facility Operations and Maintenance Plan (FOMP) shall be in place prior to start-up and, if applicable, commissioning of the facility’s equipment.
- 2.4 The FOMP shall contain the following sections:
- a. Introduction and overview of the building and systems
 - Space use(s)
 - Occupancy type(s),
 - Occupancy schedule
 - Sequence of operations
 - Building system overview
 - b. Potential safety hazards (identification and prevention)
 - c. Utility systems and service providers
 - d. Building interior and exterior maintenance procedures

⁷ Commonwealth of Massachusetts, *Standards for Building Maintenance: Guidance for Indicator Levels*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/docs/dcam/ofm/maint-st-letter-2010-2011.pdf>



- e. The computerized system in place (**CAMIS**) to record, manage and communicate **preventive maintenance** activities and the procedures, equipment and staff to ensure successful completion.
 - f. Minimum outside air requirements and indoor air/environmental quality
 - g. Reporting, record-keeping and inspections
 - h. Maintenance budgets and life-cycle costing analysis
 - i. Staffing plan and competencies
- 2.5 The **Preventive Maintenance Plan (PMP)** will supplement the FOMP by establishing system and equipment specific maintenance procedures to extend their useful life, as well as the processes in place to carry out these procedures.
- 2.6 At a minimum, the **PMP** shall include the following equipment and system specific information:
- a. Individual systems and equipment at the facility
 - b. System/equipment description (operating criteria, set points, etc.)
 - c. Start-up and shut-down procedures
 - d. Operating schedules (controls, occupied hours, off-hour operation, etc.)
 - e. Maintenance tasks/procedures
 - f. Maintenance schedule (daily, weekly, monthly, quarterly, seasonal, annual, etc.)
 - g. Maintenance staff and service providers (equipment specific) and the **Preventive maintenance** activities they are responsible for completing as scheduled.
 - h. Tracking and reporting
 - i. Troubleshooting: Identifying potential problems and solutions
 - j. Replacement parts
 - k. Building equipment tag information
 - l. Manufacturer's literature and warranties
 - m. Figures and illustrations
- 2.7 **Facility Managers** shall work with a contracted commissioning service provider to prepare and implement a commissioning plan for carrying out the testing of all building systems to verify that they are working according to the specifications of the building operation plan.
- a. Repair or upgrade all systems components that are found to be not working according to the specifications of the building operation plan.
 - b. Re-test all building components that require repairs or upgrades to verify that they are working according to the specifications of the building operation plan.
- 2.8 Facilities shall implement an Indoor Air Quality Protocol for continuous tracking and optimization of systems that regulate ventilation, indoor comfort and the conditions



(temperature, humidity and CO₂) delivered in occupied spaces.

- a. IAQ related preventive maintenance procedures include, but are not limited to cleaning coils and outdoor air intakes, inspecting and maintaining proper internal insulation, cleaning and ensuring drainage of condensate pans, and cleaning and replacing filtration media.

2.9 All facilities shall have in place a comprehensive Best Practices Equipment **Preventive Maintenance** Program that provides in-house resources or contracted services to deliver post-warranty maintenance.

3.0 Materials and Equipment

3.1 Sustainable methods and applications shall be employed whenever possible for all products within the scope of this standard, in accordance with *EO 515: Environmentally Preferable Products*.

3.2 Products shall conform to all Federal, State, and local standards for quality and safety requirements.

3.3 The **Facility Manager** and contracted service professionals shall make available at all times the product-specific information for products used to perform routine maintenance.

- a. Product name and manufacturer
- b. Product label
- c. Product cut sheet, or specification.
- d. Safety Data Sheets (SDS)

4.0 Regulatory Compliance

4.1 All work shall comply with the applicable requirements of 29 CFR §1910 and State and municipal safety and health requirements. Where there is a conflict between applicable regulations, the most stringent shall apply.

4.2 Facilities shall have an IAQ Protocol that meets applicable department standards in place to direct building operators to use practices to prevent contamination, maintain good air quality, and identify and quickly resolve IAQ issues that do arise.

5.0 Training

5.1 DCAMM will review and approve training content and requirements for all service providers. Training content will follow all applicable industry standards, as well as the manufacturer's specifications for all products and equipment.

5.2 DCAMM and **Facility Managers** will provide training opportunities to all facility staff, contracted service providers, and facility occupants. Training topics include, but are not limited to the following:

- a. Systems and equipment training
- b. Maintenance procedures and practices (by level of service provision)



- c. Training in the use of the building/space management utility (**CAMIS** is currently in use by DCAMM)
- d. Training in the use of the CMMS
- e. OSHA/Safety training
- f. Program specific orientation and maintenance issues

5.3 **Facility managers** will establish a building operations and maintenance staff education program that provides each staff person primarily working on building maintenance with at least 24 hours of education each year. The education program should provide information on building and building systems operation, maintenance, and achieving sustainable building performance.

6.0 Communication

- 6.1 The **Facility Manager** shall provide notice to building occupants if any **preventive** or scheduled maintenance activities will have an impact on their daily operations. Communication shall include description of activity, impact to occupants, any applicable safety information, and duration of maintenance activity.
- 6.2 The **Massachusetts Facilities Managers Association (MAFMA)** is a network of state facilities managers that:
 - a. Meet periodically to discuss specific topics of interest.
 - b. Disseminate information on training opportunities and new technologies.
 - c. Inform facilities personnel of proposed regulatory or statutory changes.
 - d. Maintain working committees to address issues of interest to facilities operators and managers.

7.0 Recordskeeping

- 7.1 Capital Asset Management Information System (**CAMIS**)
 - a. A database inventory of state facility infrastructure – both major (i.e. elevators, HVAC and its major related components), and minor (fire extinguishers by location), as well as tasks (i.e. cleaning windows, cleaning carpets, etc.).
 - b. **CAMIS** includes an enterprise asset management (EAM) and maintenance software program used at all facilities owned and operated by the Commonwealth to help automate all aspects of maintenance operations, including equipment history, scheduling, **preventive maintenance**, work orders, labor and expense tracking, procurement and reporting.
- 7.2 All new Equipment shall be entered into the tracking system before the facility is brought online.
 - a. The **Facility Manager** is responsible for the entry of new equipment and the creation of the PM program for that equipment.
 - b. DCAMM (Commissioning Agent) is responsible on capital projects for the entry of new major capital equipment and the associated preventive maintenance program



for the equipment.

- 7.3 The **Facility Manager** shall track preventive and scheduled maintenance activities and indicators in an effort to generate useful metrics that inform future decisions on the preventive maintenance program and the service providers. (See “Related Metrics” section below for a list of information that shall be tracked at all facilities).

Tools and Resources

All tools and resources are also in an appendix to the complete **FMMS**.

- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) *Standard 62.1: Ventilation for Acceptable Indoor Air Quality*.
- ASHRAE Guidelines 4-2008 Preparation of Operating and Maintenance Documentation for Building Systems
- CAMIS Standard Operating Procedures. Developed by DCAMM and accessed via <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/camis/standard-operating-proc/>
- Commonwealth of Massachusetts, *Standards for Building Maintenance: Status Chart and Guidance for Indicator Levels*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/docs/dcam/ofm/maint-st-letter-2010-2011.pdf>
- Commonwealth of Massachusetts: *Human Resources Division Class Specification Maintenance Worker Series*. Accessed via <http://www.mass.edu/shared/documents/classificationspecs/specspers/Maintenance%20Worker.doc>
- Division of Capital Asset Management and Maintenance, Office of Facilities Maintenance. *Facilities O&M Manual for Beginners: “What you need to think about when maintaining your facilities!”* Accessed via: <http://www.mass.gov/anf/docs/dcam/mafma/manuals/dcam-fm-manual-11-7-6.pdf>
- Division of Capital Asset Management & Maintenance *Preventive Maintenance Guidelines for Roofs*. Accessed via <http://www.mass.gov/anf/docs/dcam/mafma/tutorials/mafma-tutorial-roof-maint.pdf>
- Hunt, Glenn. *Comprehensive Facility Operation & Maintenance Manual*. Peripheral Systems, Inc. Last updated: 10-04-2013. Accessed via Whole Building Design Guide (WBDG) http://www.wbdg.org/om/om_manual.php
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Operational Services Division (OSD). *Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools*.



Massachusetts Environmentally Preferable Products (EPP) Procurement Program

- Operational Services Division (OSD) *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Sebesta Blomberg and Associates, Inc. *Facility Operation & Maintenance Plan, UMASS Amherst - New Life Science Building*. Project No. 700796.00. August 2, 2013.
- State of Minnesota Office of the Legislative Auditor. Preventive Maintenance for Local Government Buildings. <http://www.mass.gov/anf/docs/dcam/mafma/manuals/o-andm-pm-for-local-govt-buildings.pdf>
- U.S. EPA “*Building Air Quality: A Guide for Building Owners and Facility Managers*”. Accessed via http://www.epa.gov/iaq/largebldgs/baq_page.htm

Related Metrics

It is important to track the following metrics to create a comprehensive view of activities and purchasing within **Commonwealth facilities**:

- Capacity factor (actual operation vs. full-utilization operation)
- Safety record (number of loss-of-time incidents, or total number of reportable incidents)
- Energy use
- Inventory control
- Pieces of equipment in Maximo
- Overtime worked
- Maintenance Spending
- Emergency Maintenance vs. Total Maintenance
- Environmental record
- Absentee rate
- Staff turnover
- Purchases (equipment, products and materials)



Title	Standard No./Revision No.	Date
Integrated Pest Management	FMMS 07/ REV.1	March 1 st , 2016

Purpose & Scope

The Integrated Pest Management (IPM) Standard establishes minimum requirements for pest management services provided for **Commonwealth facilities**.

The IPM Standard identifies the parties responsible for pest management services at facilities owned and operated by DCAMM, as well as all requirements related to carrying out these services. All IPM services should be consistent to the specific needs of the occupant agency; therefore, only high level and summary IPM requirements are included within this document. The actual scope of services will be determined by the facility manager and, when necessary, a designated representative for the occupant agency.

State regulations and policies that guide pest management in the Commonwealth include, but are not limited to, the following.

- **Executive Order 403, Integrated Pest Management for Massachusetts State Agencies (E.O. 403)**, issued by Governor Cellucci in 1998, requires the use of IPM in all state buildings and facilities.
- **Massachusetts Pesticide Control Act Chapter 132B: Section 6** (General Law of Massachusetts, ND, Ch. 132B:6), which makes it illegal to do any of the following:
 - Distribute purchase or use a pesticide that is not registered
 - Alter or misbrand any pesticide
 - Distribute any pesticide that is open or unsealed
 - Distribute any pesticide container that is unsafe or damaged
 - Destroy or detach any pesticide label
- **Children Protection Act of 2000 and the Executive Order of 2003** (Mas.Gov, 2003, p. 1) makes it mandatory for parents, staff, and children of any school or daycare to receive notification whenever pesticide applications are being made on the property.

Childcare centers, hospitals, correctional facilities and any other specialized facilities must comply with specific requirements set forth in regulatory standards addressed in facility-specific supplements to the FMMS.

Certain pests, including birds; mosquitoes, bed bugs, snakes, bats, vertebrates that are not commensal rodents, and termites and other wood-destroying organisms have specialized requirements for prevention and extermination that are addressed in pest-specific supplements to the FMMS.

Specific requirements and responsibilities can be reasonably varied in the Service Level Matrix (SLM) agreed upon by DCAMM and the **user agency**.



Related Standards

The following Standards also include requirements related to Integrated Pest Management:

- FMMS 02 Grounds and Landscape Maintenance
- FMMS 03 Cleaning
- FMMS 04 Solid Waste Management
- FMMS 05 Routine Maintenance
- FMMS 06 Preventive and Scheduled Maintenance
- FMMS 08 Health and Safety
- FMMS 14 Procurement of Equipment, Material and Building Services
- FMMS 15 Accessibility

Summary

This Standard addresses the following items, which are detailed under the “Requirements” section of this document.

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping



Definitions

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a **User Agency** may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated **Service Level Matrix (SLM)**. This standard applies to leased buildings as well as Commonwealth owned.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Integrated Pest Management (IPM) is a process for achieving long term, environmentally sound pest control using a wide variety of management practices. An IPM program shall include a combination of pest monitoring, good sanitation practices, education, appropriate solid waste management, building maintenance, cultural pest control measures, mechanical pest control measures, and biological pest controls. Chemical pesticides will be used only when the use of these measures is warranted and when used as part of an integrated pest management plan (IPM Plan).

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of **Commonwealth facilities**.

Service Level Matrix (SLM): A document that details each of the specific facility maintenance and management services that DCAMM OFMM will provide to a **User Agency** of a **Commonwealth facility** and any that may be retained by the User Agency or **Occupant**. This document is negotiated between OFMM and the User Agency or Occupant and forms part of the Facilities Management Agreement, Occupancy Agreement, or other similar agreement between DCAMM OFMM-and an Occupant.

User Agency: A state agency that has the legal right to use and occupy all or a portion of any building, facility, improvement, or property owned by the Commonwealth for its agency mission and purposes. A User Agency may have the exclusive use of an entire building, or in a multi-occupancy facility, it may have the exclusive use of part of the building and the right to use common areas with other users. A User Agency is also an “**Occupant**” as defined herein.



Requirements⁸

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements throughout **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted Service Providers
- 1.3 The Integrated Pest Management (IPM) Standards establish baseline requirements and apply to the performance of all pest management services for **Commonwealth facilities**, and require the involvement of **Facility Managers, Facility Maintenance Staff**, Contracted Service Providers, and the building occupants.
- 1.4 Facility Managers
 - a. Identify potential and actual pest infestation at the facility and work with internal staff or contract with pest management professionals and specialists as necessary.
 - b. Work with DCAMM and appointed representative to create an IPM services contract for occupants based on their identified needs and level of service. This contract will clearly define all related tasks and requirements, as well as costs to the occupants.
 - c. Work with the Operational Services Division (OSD) to obtain an IPM Services provider for the facility in compliance with FAC74: Integrated Pest Management (IPM) Statewide Contract.
 - d. Implement a preventive maintenance program that identifies and corrects conditions that contribute to pest infestation.
 - e. Work with an IPM professional to review, renew and adjust (either as conditions warrant, or at a minimum annually) the IPM Plan.
 - f. Ensure that all pest management, service providers have the appropriate licensing and certifications.
 - g. Ensure all pest management services performed at the facility comply with the appropriate rules and regulations.

1.5 Contracted IPM Service Providers

⁸ All documents referenced under the "Requirements" section are included in the supplemental "Service Delivery" package.



- a. Work with Facility Manager, staff and building occupants to create an IPM Plan for the facility.
 - b. Comply with all occupant specific regulations and statutory requirements (i.e. hospitals, detention centers, schools, childcare, etc.).
 - c. Comply with IPM Statewide Contract
- 1.6 Janitorial Service Providers shall ensure trash, especially food waste and crumbs do not accumulate at the facility and promote pest infestation.
- 1.7 Building Occupants (or designated representative)
- a. Are responsible for understanding the IPM policies for the building.
 - b. Are responsible for notifying the Facility Manager of pest infestations or areas that may cause a potential infestation.

2.0 Implementation

- 2.1 Establish an **Integrated Pest Management (IPM)** Plan for the facility. The IPM Plan shall establish the management, preventive maintenance and treatment procedures for achieving long term, environmentally sound pest control. The IPM Plan shall include:
- a. IPM Team identification
 - b. Provisions for utilizing environmentally friendly products as a 1st resort before using fertilizers, pesticides, or other potentially harmful products.
 - c. Company and employee qualifications/certifications to perform Pest Management night inspections
 - d. On-line and paper-based Pest Logging and Reporting procedures
 - e. Training of facility staff, contractors, and occupants
 - f. Frequency of technician visits and activities performed
 - g. Pest Management planners and quality assurance
- 2.2 IPM Base Services
- a. Perform and document initial **IPM** Assessment
 - b. Develop and implement IPM Plan
 - c. Prevent pest infestations: Identify and correct conditions and activities that have the potential to cause pest infestation
 - d. Eliminate pest infestations: Monitoring, trapping, pesticide application, and pest removal
 - e. Turf and Landscape Integrated Pest Management (see FMMS 02)
- 2.3 The IPM Facility Assessment and Plan will determine the actual extent of services necessary at each facility.
- 2.4 All species found within the structure of the building shall be covered within the scope



of the IPM program.

- 2.5 Pest populations that are located immediately outside of the buildings and pose a possible infestation hazard or threat are included within the scope of this standard.
- 2.6 Treatment of pests damaging to landscaping elements, including treatments prior to infestation problems, is within the scope of this standard.

3.0 Materials and Equipment

- 3.1 Products within the scope of this standard include, but are not limited to the following:
 - a. Portable vacuums with HEPA or MICRO filtration
 - b. Trapping devices
 - c. Chemical Pesticide Products
 - d. Bait stations and bait formulations of types other than sprays.
- 3.2 Sustainable methods and applications shall be employed whenever possible for all products within the scope of this standard, in accordance with *EO 515: Environmentally Preferable Products*.
- 3.3 Products shall conform to all Federal, State, and local standards for quality and safety requirements.
- 3.4 The Facility Manager and contracted service professionals shall make available at all times the product-specific information for products used in the prevention and management of pest infestation.
 - a. Product name and manufacturer
 - b. Product label
 - c. Material Safety Data Sheets (MSDS)

4.0 Regulatory Compliance

- 4.1 Ensure procedures are in place and clearly communicated for the proper disposal of hazardous wastes.
- 4.2 All work shall comply with the applicable requirements of 29 CFR §1910 and State and municipal safety and health requirements. Where there is a conflict between applicable regulations, the most stringent shall apply.

5.0 Training

- 5.1 DCAMM will review and approve training content and requirements for all service providers. Training content will follow all applicable industry standards for pest management, as well as the manufacturer's specifications for all products and equipment.
- 5.2 Contracted service providers shall provide one training session per year to facility staff, contractors and facility occupants. The contractor will also be responsible for providing



additional training sessions as necessary for a mutually agreed upon additional cost.

- 5.3 In addition to the above training, assessment, and educational requirements, contractors are responsible for identifying and meeting all training requirements in place at the time they enter into a contract with the Commonwealth for waste management services.

6.0 Communication

- 6.1 Signs, placards, literature, or other information shall be used to inform building occupants of the nature of the pest application.
- 6.2 Notification shall be given to building occupants no less than 72 hours prior to the use of pesticides.
- 6.3 Notification shall be given to building occupants no more than 24 hours after application of a pesticide in the event of an emergency.

7.0 Recordskeeping

- 7.1 Service providers shall provide secure online capabilities to accomplish one or more of the following tasks:
- a. Pest logging for facility staff
 - b. Contractor service reports
 - c. Contractor financial reports
 - d. Contractor reports of pesticide applications
- 7.2 The Facilities Manager is responsible for maintaining a pest control logbook, or file for each building or site. The monitoring and documentation of pest locations and actions taken is to prevent recurring infestations.

Tools and Resources

All tools and resources are also in an appendix to the complete **FMMS**.

- Environmental Protection Agency (EPA). *Integrated Pest Management in Buildings*. This reference guide defines IPM, describes proper IPM implementation in buildings, and outlines the roles and responsibilities necessary for success. http://www.epa.gov/pesp/publications/ipm/ipm_in_buildings.pdf
- The Federal Insecticide, Fungicide and Rodenticide Act
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Massachusetts General Law (ND). 333 CMR "MGL 132B Massachusetts Pesticide



Control Act". Commonwealth of Massachusetts

- Massachusetts Executive Order No. 403, Integrated Pest Management for Massachusetts State Agencies
- MASS.Gov. (2003) "The Act Protecting Children and Families from Harmful Pesticides of 2000"
- MA Department of Fish and Wildlife (MassWildlife) Regulations
- Massachusetts Department of Agricultural Resources (DAR).
- Massachusetts Executive Order 515 "Establishing an Environmental Purchasing Policy"
- Operational Services Division (OSD) FAC74: Integrated Pest Management (IPM) Statewide Contract
- Operational Services Division (OSD) *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Operational Services Division (OSD). Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Radcliffe, E.B., Hutchison, W. D., & R. E. Cancelado [eds.], Radcliffe's IPM World Textbook, URL: <http://ipmworld.umn.edu>, University of Minnesota, St. Paul, MN.
- San Francisco's Department of the Environment (SF Environment) explains the listing criteria and process and has an updated 2007 reduced-risk pesticide list for screened pesticide active ingredients. <http://www.sfenvironment.org/ipmchecklist>

Related Metrics

It is important to track the following metrics to create a comprehensive view of activities and purchasing that is occurring in **Commonwealth facilities**

Set up an electronic spreadsheet tracking tool for the following items:

Pest name

Monitoring method

Monitoring schedule

Responsible party

Pest prevention

Prevention measures

Threshold for action

Product applied (name)



FMMS 07: Integrated Pest Management Standard

Toxicity of product (least?)

Date and time of product application

Date and time of occupant notification

Emergency application? (If so, explain emergency)



Title	Standard No./Revision No.	Date
Health and Safety	FMMS 08 / REV. 1	March 1 st , 2016

Purpose and Scope

The Health and Safety Standard establishes minimum requirements to maintain a safe and healthy environment in **Commonwealth facilities** by reducing the potential for injury, illness, and other hazards to facility occupants and visitors. The benefit to the Commonwealth is a reduction in costs due to unscheduled medical leave, medical care, and disability.

The scope of this Standard includes requirements for the assessment of health and safety risks at each building, development of a plan to manage specific risks, and implementation of the facility-specific plan in the operation of the facility.

Executive Order No. 511 “Establishing the Massachusetts Employee Safety and Health Advisory Committee” requires that all state agencies shall maintain, track and report data related to occupational injuries, illnesses, and deaths in the workplace, and manage and perform training under the guidance of DCAMM’s Health and Safety Coordinator.

Health and safety activities within this Standard shall also comply with regulations promulgated under the **Occupational Safety Act**, as set forth in **29 CFR Part 1904, “Recording and Reporting Occupational Injuries and Illnesses”**.

Specific requirements and responsibilities can be reasonably varied in the Service Level Matrix (SLM) agreed upon by DCAMM and the user agency.

Related Standards

The Health and Safety Standard includes selected topics and requirements that are also found within other Facility Maintenance and Management Standards (FMMS). The following Standards are referenced within the Health and Safety Standard:

- FMMS 02 Grounds and Landscape Maintenance
- FMMS 03 Cleaning
- FMMS 04 Solid Waste Management
- FMMS 06 Preventative and Schedule Maintenance
- FMMS 07 Integrated Pest Management
- FMMS 11 Space Management
- FMMS 12 OFMM Project Management
- FMMS 13 Facility Information Management
- FMMS 14 Procurement of Equipment, Material and Building Services



- FMMS 15 Accessibility

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Asbestos is a naturally occurring silicate mineral used commercially for its desired physical properties. Asbestos (Chrysotile) became increasingly popular among manufacturers and builders in the late 19th century because of its sound absorption, tensile strength, resistance to damage (fire, heat, electrical and chemical), and affordability. It was used in such applications as electrical insulation for hotplate wiring and in building insulation. When asbestos is used for its resistance to fire or heat the fibers are often mixed with cement (resulting in fiber cement) or woven into fabric or mats. In the mid 1980's asbestos became a health concern for respiratory diseases. Although it has not been banned in the US it is regulated by the US EPA under OSHA 29 CFR 1926.

Combustible materials include building materials such as wood and paper products, fuels (oil, gas, kerosene, and coal), and flammable products that may be stored in buildings (e.g. solvents, paper, etc.)

Confined space is an area whose configuration hinders activities of any employees who must enter into, perform work in, and exit from it. Confined spaces have limited or restricted means of access, are large enough to permit access for the performance of necessary work, and are not designed for continuous occupancy.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as Commonwealth owned.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Hazardous materials are substances that workers may be exposed to during building maintenance/repair; these materials include, but are not limited to, sewerage, sewer gases, radiation, asbestos, lead, fibrous glass (e.g. insulation), pesticides, or polychlorinated biphenyl (PCB) containing materials. Other hazards include chemicals used in cleaning products.

Indoor Air Quality (IAQ) refers to the air quality within and around buildings and structures, especially as it relates to the health and comfort of building occupants. IAQ can be affected by indoor environmental contaminants, adequacy of fresh air, temperature, and relative humidity. Source control, filtration and use of ventilation to dilute contaminants are the primary methods for improving indoor air quality in most buildings.

IAQ-Building Education and Assessment Model (I-BEAM) is a US EPA guidance tool



designed for use by building professionals and others interested in maximizing indoor air quality in facilities/buildings. Implement I- BEAM with assistance from the MDPH/IAQ-Program.

Massachusetts Right-To-Know Law, or hazard communication standard, regulates how information about workplace chemical hazards is communicated to occupants, employees and visitors.

Material Safety Data Sheets (MSDSs) are documents that provide information regarding the product, manufacturer contact information, chemical ingredients, physical and health hazards associated with the chemical(s), protective equipment, and safe work practices, pursuant to the Occupational Safety and Health Administration Hazardous Communication Standard (29 CFR 1910.1200) or Hazardous Substance Disclosure by Employers (Massachusetts Right-To-Know Law, M.G.L. c. 111F).

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.

Polychlorinated Biphenyls (PCB's) were widely used as dielectric and coolant fluids in transformers, capacitors, and electric motors. They were also used in construction materials like caulking as a plasticizer to improve a product's resistance to degradation. They are known to cause cancer in animals and thought to do so in humans. They were banned in the US in 1979.

Radon is an invisible, radioactive gas that results from the decay of radium, which may be found in rock formations beneath buildings or in certain building materials themselves.

Radioactive Materials that produce ionizing and non-ionizing radiation form through specific radioactive sources such as x-ray technology and nuclear medicine.

Raw Sewage may contaminate building materials following toilet overflow, sewer backup, or flooding from certain sources of water. Sewage can contain pathogens or disease-causing agents. Proper cleanup of the materials that have come into direct contact with the contaminated waters is required to limit health impacts.

Total Worker Health integrates occupational safety and health protection with health promotion to prevent worker injury and illness and improve health and wellbeing.

Volatile Organic Compounds (VOCs) are organic chemicals that have a high vapor pressure at ordinary, room-temperature conditions. Common VOCs such as formaldehyde and other hydrocarbons create indoor air quality hazards and/or are potential groundwater contaminants.



Summary

Each **Facility Manager** shall prepare and implement a health and safety program that includes (but is not limited to) the following elements and requirements:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Requirements

1. Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**.
- 1.2 **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted Service Providers
- 1.3 Facility Manager
 - a. Eliminate or reduce hazards in the work place to achieve the following:
 - Prevent conditions that may result in pedestrian hazards (e.g. tripping hazards, slip-and-fall hazards, etc.)
 - Work to reduce exposure to **VOCs** and eliminate exposure to, lead, **asbestos**, **PCBs** and other hazardous or regulated materials in the facility
 - Promote the use of personal protective equipment (PPE) where needed
 - b. Develop and maintain a current Health and Safety Policy for the facility.
 - c. Collect and track information on health and safety-related incidents and complaints that affect operation and all building occupants. Information shall be maintained in CAMIS database (refer to FMMS 13).



- d. Verify that all contracted service providers adhere to the Health and Safety policy.
- e. Maintain building systems to provide acceptable **indoor air quality (IAQ)** and adequate ventilation.

1.4 Occupant Agency

- a. Adhere to the Health and Safety Policy.
- b. Maintain a healthy environment in their work areas.
- c. Manage the collection and tracking of data related to health and safety incidents within their leased spaces.

2.0 Implementation

2.1 Perform a Health and Safety Risk Assessment for each facility. The facility Health and Safety Risk assessment shall contain the following elements:

- a. Assessment scope and methodology.
- b. Documentation of existing conditions.
- c. Identification of actual or potential Health and Safety hazards including the presents of hazardous and regulated materials.
- d. Identification of facility/building users at risk.
- e. Develop and implement a Health and Safety Policy, based on the findings from the Health and Safety Risk Assessment. The Health and Safety Policy shall address the following Health and Safety Hazard Prevention elements (as needed):
- f. Occupant health and safety practices
- g. Emergency action planning
- h. Hazard communication or compliance including right to know requirement
- i. Occupant and visitor first aid
- j. Occupant personal equipment
- k. Personal protective equipment
- l. Where hazards are identified evaluate for safer alternatives
- m. Implementation of an incident and complaint, reporting and tracking system

2.2 Review Health and Safety assessment and policy at least annually and in response to any major event or incident.

3.0 Materials and Equipment

3.1 The approved Health and Safety Policy for each facility shall address specific hazards at that particular facility, which may include (but are not limited to):

- a. Building materials and furnishings containing **volatile organic compounds (VOCs)**



- b. Equipment and supplies containing hazardous or regulated materials
- c. **Indoor air quality (IAQ)**
- d. Low lighting levels in corridors and other areas of public travel
- e. Occupational noise exposure
- f. Confined spaces
- g. Improper, inadequately maintained or malfunctioning equipment
- h. Lead paint (in older and/or child occupied buildings)
- i. Deteriorated **asbestos** insulation (in older buildings)
- j. **Polychlorinated Biphenyls (PCBs)** (in older buildings) e.g. caulking, electrical transformer and floor finishing
- k. Material exposed to conditions that may cause it to become wet or damp, presenting a host environment for mold and mildew growth.
- l. Electrical energize equipment

4.0 Regulatory Compliance

- 4.1 Comply with 29 CFR Part 1904 and Executive Order No. 511
 - a. Maintain, track and report data related to occupational injuries, illnesses, and deaths in the workplace.
 - b. Manage and perform training in accordance with the requirements established by the DCAMM Health and Safety Coordinator.
- 4.2 M.G.L c.11F compliance
 - a. Comply with M.G.L. c.111F and acquire **Material Safety Data Sheets (MSDSs)** for hazardous material-containing products

5.0 Training

- 5.1 Facility occupant agency shall be trained on hazard communication system.
- 5.2 Facility occupant agency shall be trained on emergency action plan.
- 5.3 Facility occupant agency shall be trained on how to identify potential hazards.
 - a. Individual sources of pollution
 - b. Hazardous and regulated materials
 - c. Sources of potential combustion (e.g. unprotected combustible building materials, oil, gas, kerosene, coal, wood, solvents, etc.)
 - d. Unsafe and unhealthy activities by occupant agency.
 - e. Maintenance and housekeeping practices.
 - f. Occupant health symptoms (e.g. symptom relief after leaving the facility/building).
 - g. As appropriate, train in proper use of chemicals, including appropriate ventilation



methods

5.4 Procurement personnel shall trained the Order of Executive 515

6.0 Communication

6.1 **Facility Manager** communications responsibilities include:

- a. Creating and maintaining a list of identified stakeholder contacts
- b. Making key contact information readily available to facility occupants and visitors
- c. Informing occupants of upcoming pest management applications
- d. Advising occupants of planned equipment maintenance (e.g. HVAC system)
- e. Notifying occupants of upcoming unusual cleaning activities
- f. Notifying occupants of renovations, equipment replacements, and other capital projects that may affect occupant health and safety
- g. Involving occupants in safer alternatives planning

6.2 Occupant agency communications responsibilities include:

- a. Making key contact information readily available to facility manager
- b. Reporting all health and safety incidents and relevant complaint taking place in or as a result of conditions in program spaces, and/or conditions of building systems and elements
- c. Alerting the facility manager to potential health and safety hazards observed in the facility
- d. Note: MSDSs are available upon request per M.G.L.c.111F.

7.0 Recordskeeping

7.1 Document **Indoor Air Quality (IAQ)** testing on a regular basis

- a. **Indoor Air Quality (IAQ)** assessment shall be performed using **I-BEAM** every five (5) years in all facilities with occupied spaces in consultation with the MDPH's IAQ Program.

7.2 Document Preventive Maintenance of items affecting health and safety including but not limited to:

- a. Walking surfaces
- b. Fall protection systems
- c. HVAC systems
- d. Electrical power and lighting systems

7.3 Periodically update the facility/building Health and Safety Risk Assessment.



Tools and Resources

All tools and resources are also in an appendix to the complete **FMMS**.

- American Society Testing Materials International, *Standard Practice for Visual Inspection of Asbestos Abatement Projects*, West Conshohocken, PA, ASTM E1368
- American Society Testing Materials International, *Standard Practice for Maintenance, Renovation, and Repair of Installed Asbestos Cement Products*, West Conshohocken, PA, ASTM E2394
- Massachusetts Department of Public Health. *Indoor Air Quality Program*. <http://mass.gov/dph/iaq>
- National Institute of Occupational Safety and Health, US EPA, June 1998, *Building Air Quality Action Plan*, DHHS Publication No. 98-123
- US Environmental Protection Agency, *An Introduction to Indoor Air Quality (IAQ) – Improving Indoor Air Quality*, US EPA, Washington, DC, <http://www.epa.gov/iaq/is-imprv.html>
- US Environmental Protection Agency, *An Introduction to Indoor Air Quality (IAQ) – Do you suspect your office has an indoor air problem*, US EPA, Washington, DC, <http://www.epa.gov/iaq/is-build2.html>
- US Environmental Protection Agency, 2002, *IAQ (Indoor Air Quality) Building Education and Assessment Model (I-BEAM)*, US EPA, Washington, DC, Only available on-line
- US Environmental Protection Agency, October 1997, *An Office Building Occupant's Guide to Indoor Air Quality*, US EPA, Washington, DC, EPA-402-K-97-003
- US Government Printing Office, December 1991, *Building Air Quality, A Guide for Building Owners and Facility Managers*, SSOP, Washington DC, ISBN 0-16-035919-8
- US Occupational Safety & Health Administration, February 1979, *Code of Federal Regulations for Construction*, OSHA, Washington DC, 29 CFR Part 1926 Subpart D

Related Metrics

- Current Health and Safety Risk Assessment
- Current Facility Health and Safety Plan
- Current and accurate data: workplace injuries, illnesses and deaths
- Current test documentation: IAQ, electrical preventive maintenance, fall protection equipment inspection



Title	Standard No./Revision No.	Date
Emergency Management	FMMS 09 / REV. 1	March 1 st , 2016

Purpose and Scope

This Emergency Management Standard establishes standardized approaches for disaster/emergency management planning and business continuity in addition to facility-specific mitigation planning to minimize the impacts of a disaster while protecting life and property. Events to which this standard is applicable to includes, but is not limited to:

- Weather related natural disasters, including blizzards, hurricanes, tornados, and floods
- Human-caused events such as work stoppage, acts of terrorism, attacks, and other acts of workplace violence
- Technology related events including unforeseen failures of structural, architectural, mechanical, or electrical systems

This standard describes the relationship and interface requirements with the **Massachusetts Emergency Management Agency (MEMA)** as the state agency with primary responsibility for the state's disaster response. MEMA ensures the Commonwealth's ability to rapidly recover from disasters by assessing and mitigating hazards, enhancing preparedness, ensuring effective response, and building the capacity to recover.

Executive Order 469 Designation of the National Incident Management System as the Commonwealth's Incident Management Standard requires Massachusetts to incorporate the National Incident Management System (NIMS) into its Emergency Operations Plan as a prerequisite for receiving Federal funding. NIMS specifies standardized terminology, unified command structures, consolidated action plans, uniform standards for personnel qualification, planning and training, comprehensive resource management, and designated incident facilities during emergencies or disasters.

Commonwealth of Massachusetts Comprehensive Emergency Management Plan (CEMP) (Base Plan and ESF Annexes) dated July 2013. This plan supersedes the previously issued CEMP dated 2011 and provides a flexible framework for emergency operations in the Commonwealth. The CEMP describes the system that will be used by the Commonwealth to prevent, prepare for, respond to, and recover from an emergency or disaster. The CEMP is an all hazards plan and was drafted in accordance with relevant federal and state laws, and conforms to federal guidance, including the Comprehensive Preparedness Guide (CPG-101), National Response Framework (NRF), and **National Incident Management System (NIMS)**. The CEMP also complies with the Emergency Management Standard published by the Emergency Management Accreditation Program (EMAP).

Specific requirements and responsibilities can be reasonably varied in the Service Level Matrix (SLM) agreed upon by DCAMM and the user agency.



Related Standards

The Emergency Management Standard includes requirements that are addressed within other Standards included within the overall Facility Maintenance and Management Standards (FMMS). The following is a list of referenced Standards:

- FMMS 01 Security
- FMMS 15 Accessibility
- FMMS 16 Fire Safety
- FMMS 17 Wayfinding

Summary

The following topics and their related requirements are included in the Emergency Management Standard and detailed under the “Requirements” section of this document:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Business Continuity is the continuing of operations and services under adverse conditions due to threatened or actual natural disasters and human-caused or technology-related events.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as Commonwealth owned.

Disaster/Emergency Management is an ongoing process to mitigate, prepare for, respond to, maintain continuity during and recover from an incident that threatens life, property, operations, or the environment. Emergency Management, in order to lessen the impact, must be



comprehensive, progressive, risk-driven, integrated, collaborative, coordinated, flexible, and professional.

The **Emergency Management Institute (EMI)** a component of FEMA directly supports the implementation of the National Incident Management System (NIMS), the National Response Framework (NRF), the National Disaster Recovery Framework (NDRF), and the National Preparedness Goal (NPG) by conveying necessary knowledge and skills to improve the nation's capability.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

The **Federal Emergency Management Agency (FEMA)**, as part of the U. S Department of Homeland Security, coordinates the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all Federal disasters, whether natural or man-made, including acts of terror. FEMA provides expertise and resources to support local and regional governments in emergency planning, preparation, response and recovery.

An **Incident Management Team (IMT)** is a group of representatives from public safety departments (i.e. fire, law enforcement, EMS, et al.) trained to serve in Command and General Staff positions during the initial hours following an emergency. An IMT can respond to a wide range of emergencies including fires, floods, earthquakes, hurricanes, tornadoes, tsunamis, riots, spilling of hazardous materials, and other natural or human-caused incidents.

The **Massachusetts Emergency Management Agency (MEMA)** is the state agency charged with ensuring the state is prepared to withstand, respond to, and recover from all types of emergencies and disasters.

Mitigation refers to the structural and non-structural actions taken to lessen the impact of a hazard to the building through the review of possible risks.

National Incident Management System (NIMS) is administered by the US Department of Homeland Security and is referenced in FEMA Publication P-501. This publication provides a consistent nationwide template to enable Federal, State, tribal, and local governments, nongovernmental organizations (NGOs), and the private sector to work together to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.

Preparedness - refers to ongoing activities, tasks, and systems to develop, implement, and maintain program capabilities. This is completed by a cycle of planning, organizing, training, equipping, exercising, evaluating, and improving.

Prevention refers to preventing hazards to humans, primarily from potential natural disasters, accidents, or human acts of violence.



Recovery is the process of bringing the affected building and its operations back to business continuity and some degree of normalcy.

Response is the effort to mitigate the impact of an incident on the public and the environment.

Requirements

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Accessibility Standard and its requirements throughout **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** shall work with the User Agency ADA Coordinators to identify their specific accessibility needs and concerns at the facility, including, but not limited to, security procedures, maintenance schedules, housekeeping, and signage
- 1.3 The **OFMM Director of Operations and Maintenance** shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**
 - d. DCAMM ADA Coordinator
 - e. User Agency ADA Coordinators and/or on-site managers
- 1.4 DCAMM designee responsibilities shall include the following tasks:
 - a. Verification with the **Facility Manager** and **Incident Management Team** that the plan meets the requirements of Executive Order 469
 - b. Review of the Emergency Management Plan with the Facility Manager and Incident Management Team to ensure that it functions as intended
 - c. Verification that the plan is consistent with all applicable Commonwealth statutes, regulations, polices, and procedures
 - d. Provision of assistance to the Incident Management Team and Facility Manager during the execution of all phases of the emergency management plan
- 1.5 The **Facility Manager** is responsible for the following tasks:
 - a. Verification (with the **Incident Management Team**) that the Emergency Management Plan meets the requirements of Executive Order 469
 - b. Assisting the Incident Management Team in executing the plan



- c. Testing and improving the plan in collaboration with the Incident Management Team
- d. Assisting the Incident Management team during an emergency

1.6 The Incident Management Team is responsible for the following tasks:

- a. Establishing a facility-specific Emergency Management Plan in accordance with the CEMP including coordination emergency first responses, notification/reposition requirements
- b. Verifying (with the Facility Manager and DCAMM) that the plan meets the requirements of the CEMP
- c. Communicating the plan to the occupant agency liaison
- d. Executing the Emergency Management Plan
- e. Testing and improving the plan with critical personnel
- f. Managing the Plan continuously and during all emergencies
- g. Distribution of DCAMM's Emergency Response Guide
- h. Evaluating, assessing, and reporting following each incident

1.7 It is the responsibility of the occupant agency occupants, suppliers, and visitors to adhere to the emergency plan during testing and during an actual disaster/emergency.

2.0 Implementation

2.1 Disaster prevention activities shall focus on:

- a. Preventing injury to building occupants and visitors to the property
- b. Providing permanent protection from disasters
- c. Preparing and implementing a facility-specific Disaster Management Program that includes the following elements:
 - Identification of goals and objectives for the Disaster Management Program
 - Identification of the present condition of the facility and repairs and upgrades that are needed to meet Program requirements
 - Identification of all functions performed in the building operation to determine the minimum deliverable Program requirements
 - Establishment of minimum deliverable requirements and responsibilities for the Program
- d. Performing a comprehensive Hazard Identification and Risk Assessment to identify risks of natural disasters and human-caused events, as well as the potential effects of such disasters including:
 - The vulnerability of occupant agency occupants and visitors
 - The vulnerability of the facility/building



- The potential risks to the environment if a disaster/emergency affects a facility/building
 - Operations within the facility/building that could be disrupted by a disaster
- e. Performing an annual review of the Hazard Identification and Risk Assessment
- f. The following are general requirements for multiple facility types; it is the responsibility of the Facility Manager, however, to ensure that all facilities maintenance staff and contracted service providers follow all current rules, regulations, policies, and procedures relevant to the specific operational/programming requirements of occupant agencies in the facility.

2.2 Mitigation activities shall focus on:

- a. Assessing all potential non-preventable risks at the facility/building
- b. Designing and implementing procedures to minimize identified risks
- c. Training facility/building occupant agency occupants on proper emergency procedures

2.3 Preparedness activities shall focus on:

- a. Preparing emergency equipment and procedures for use when a disaster occurs, including:
 - Sources and locations for temporary shelter within the facility /building that do not put occupant agency occupants at risk
 - A 24/7 communication system for the facility/building that can be utilized immediately in the event of an emergency
 - Back-up utility services that can support critical facility/building functions
 - Simulated evacuation drills from the facility/building, with required participation by the Facility Manager and occupant agency occupants
- b. Preparing a 24/7 Emergency Preparedness Plan that addresses the following areas:
 - Resource management
 - Emergency response
 - Communications
 - Business continuity
 - Information technology
 - Employee assistance
 - Incident management
- c. Preparing a test plan for the 24/7 Emergency Preparedness Plan that addresses the following elements:



- The continuing ability of the plan to meet minimum requirements
- Definition of the different types of exercises required to fully test the plan
- Exercises that include all critical functions required to operate the facility/building that are consistent and are conducted on a regular basis

Results from the tests are used to evaluate plan effectiveness

2.4 Response activities shall focus on:

- a. Determining and prioritizing the requirements for evacuation of the facility/building
- b. Recording and retaining the requirements for shelter-in-place at the facility/building
- c. Determining and prioritizing the requirements for lock-down of the facility/building
- d. Coordinating all disaster response with first responders and **MEMA**

2.5 Recovery activities shall focus on:

- a. An orderly transition from the response phase
- b. Identification and reporting of all potential off-site temporary recovery locations
- c. Restoration of normal facility operations by performing the following tasks:
 - A complete and accurate damage assessment by the facility manager
 - Removal of debris to an offsite location
 - Restoration of facility/building utility services as quickly as possible
 - Restoration of access and transportation to the facility/building as quickly as possible
- d. Ensuring Effective Business Continuity so that critical functions are available to occupant agencies, suppliers, and others

3.0 Materials and Equipment

3.1 At a minimum, the facility/building shall have the following safety equipment readily available:

- a. Fire extinguishers
- b. Automated External Defibrillator (AED) (facility appropriate)
- c. Displayed emergency contact information
- d. Displayed Emergency exit plan
- e. Signs highlighting emergency exits
- f. Emergency lighting
- g. First aid kits
- h. Emergency communication equipment

3.2 For the comfort of facility occupants and visitors; in case of a hazard, the following



shall be kept on hand:

- a. Fresh (bottled) water
- b. Blankets
- c. Flashlights
- d. AM/FM Radio
- e. Extra batteries
- f. Personal sanitation items

4.0 Regulatory Compliance

- 4.1 In case of facility evacuation, ensure that the emergency evacuation plan is in place and clearly displayed.
- 4.2 In case of emergency, the incident management team shall inform facility/building occupants and visitors of the proper response.
- 4.3 After evacuation the incident management team shall account for all occupants and visitors at designated staging areas.
- 4.4 In case of emergency, establish communications between the **Incident Management Team**, the **Facility Manager**, local emergency authorities, and **MEMA**.

5.0 Training

- 5.1 Personnel who perform critical functions before, during, and after inclement weather or a disaster shall be designated to receive Incident Management Team training. Training will follow all applicable industry standards for emergency management.
 - a. Identify any DCAMM individuals that perform critical functions
 - b. Identify occupant agency facility/building liaison for interface with DCAMM and facility manager as well as emergency reporting, notification requirements
 - c. Identify backup replacements for critical functions
 - d. Personnel are to be trained according to **NIMS** standards
 - e. Periodically perform refresher training on a consistent basis
 - f. Receive training in DCAMM's Emergency Response Guide
- 5.2 The emergency preparedness plan will be managed and communicated to the occupant agency liaison by the facility manager and the Incident Management Team

6.0 Communication

- 6.1 DCAMM is responsible for communicating the following information to the facility manager:
 - a. Any changes at the occupant agency
 - b. Any Memorandum of Understanding or Agreement (MOU or MOA) with the



occupant agency or other involved agency

- c. Any changes in training and requirements for the facility manager, Incident Management Team, and occupant agency liaison generated by **MEMA** or **FEMA**

6.2 The **Facility Manager** is responsible for communicating the following information to DCAMM and the Incident Management Team:

- a. Any changes in the condition of the facility/building that could affect emergency management
- b. Any changes in training requirements for the Incident Management Team and the occupant agency
- c. Any changes for Hazard Identification and Risk Assessment as generated from the annual review

6.3 DCAMM's Incident Management Team shall report to the relevant Secretariat leadership (as well as to DCAMM, the **Facility Manager**, and **MEMA**).

- a. Any changes to the emergency management plan as a result of plan reviews
- b. The occurrence of a disaster/emergency at the facility to DCAMM, the Facility Manager, and MEMA
- c. The status of an ongoing disaster/emergency until (or if) First Responders arrives at the scene
- d. Any additional requirements to DCAMM and the Facility Manager as a result of the disaster/emergency
- e. The status of the recovery operation to the Occupant Agency Liaison, the Facility Manager, and DCAMM

6.4 The Occupant Agency liaison is responsible for the following communication to the **Facility Manager** and Incident Management Team:

- a. Any potential hazards
- b. Any problematic issues with emergency exits
- c. Any missing, damaged, or expired safety equipment

7.0 Recordskeeping

7.1 DCAMM shall review the Emergency Preparedness Plan with the Incident Management Team and Occupant Agency Liaison on a regular basis

7.2 Methods shall be defined to evaluate the Emergency Response Guide

7.3 The review of the Plan shall be used to make necessary changes and plan improvements



Tools and Resources

All tools and resources are also in an appendix to the complete **FMMS**.

- Bringing the Plan to Life, Implementing the Hazard Mitigation Plan, August 2003, FEMA Publication FEMA 386-4;
- Commonwealth of Massachusetts Comprehensive Emergency Management Plan (CEMP) dated July 2013
- Developing the Mitigation Plan, Identifying Mitigation Actions and Implementing Strategies, April 2003, FEMA Publication FEMA 386-3;
- Getting Started, Building Support for Mitigation Planning, September 2002, FEMA, FEMA Publication FEMA 386-1;
- Handbook for Rapid Visual Screening of Buildings to Evaluate Terrorism Risks, March 2009, FEMA Publication FEMA 455;
- Incremental Protection for Existing Commercial Buildings from Terrorist Attack, April 2008, FEMA Publication FEMA 459;
- Integrating Historic Property and Cultural Resource Considerations Into Mitigation Planning, State and Local Mitigation Planning How-To Guide, May 2005, FEMA Publication FEMA 386-6;
- Integrating Human-Caused Hazards Into Mitigation Planning, September 2002, FEMA Publication FEMA 386-7;
- Multi-Jurisdictional Mitigation Planning, State and Local Mitigation Planning, August 2006, FEMA Publication FEMA 386-8;
- National Fire Protection Association 1600, Standard on Disaster/Emergency Management and Business Continuity Programs. NFPA 1600;
- National Incident Management System, U.S. Department of Homeland Security (www.fema.gov/nims)
- National Incident Management System, December 2008, U.S. Department of Homeland Security, FEMA Publication P-501;
- National Response Framework, January 2008, Homeland Security, FEMA Publication P-682;
- Reference Manual to Mitigation Potential Terrorist Attacks Against Buildings, December 2003, FEMA Publication FEMA 426;
- Risk Assessment, A How-to Guide to Mitigate Potential Terrorist Attacks Against Buildings, January 2005, FEMA Publication FEMA 452;
- Threat and Hazard Identification and Risk Assessment Guide, Comprehensive Preparedness Guide (CPG) 201, Second Edition, August 2013;
- Understanding Your Risks, Identifying Hazards and Estimating Losses, August 2001,



FMMS 09: Emergency Management Standard

FEMA, FEMA Publication FEMA 386-2;

- Using Benefit-Cost Review in Mitigation Planning, State and Local Mitigation Planning, May 2007, FEMA Publication FEMA 386-5;
- Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects, State and Local Mitigation Planning How-to Guide, August 2008, FEMA Publication FEMA 386-9;

Related Metrics

- A current Disaster Management Program shall be kept for the facility at a location that is easily accessible by the facility manager and authorized personnel.
- A current Emergency Preparedness Plan for the facility shall be maintained.
- Emergency Preparedness of a building will be measured outside of an incident on improved training, effectiveness, and plan improvements.
- Emergency Preparedness of a building will be measured overall as to how critical functions perform during a hazard as well as the business and technical recovery performance.



Title	Standard No./Revision No.	Date
Energy Management and Sustainability	FMMS 10/ REV. 1	March 1 st , 2016

Purpose and Scope

The Energy Management and Sustainability Standard establishes baseline requirements to ensure that all **Commonwealth facilities** are operating efficiently and minimizing energy use and costs in addition to reducing greenhouse gas emissions.

Energy Management and Sustainability is an important part of facility maintenance and management to reduce energy use from daily activities and operations and to reduce wear and tear on equipment. This standard applies to existing buildings (new or old) and all renovations at these facilities; however, it does not dictate requirements for new building construction activities, which are covered by other non FMMS standards.

The basis of this Standard is **Executive Order 484 - Leading By Example: Clean Energy and Efficient Buildings** (E.O. 484), which aims to reduce environmental impacts of state agencies.

E.O. 484 establishes specific high-level environmental goals for all Commonwealth agencies. The specific high-level targets that directly relate to the operations and maintenance of facilities are:

2020 Targets

- 40% reduction in greenhouse gas emissions from 2002 levels
- 35% reduction in energy consumption per square foot from 2004 levels
- 30% of annual electricity consumption from renewable sources (either through purchase of renewable energy or through installation of on-site resources)
- 15% reduction in potable water use from 2006 levels

2050 Targets

- 80% reduction in greenhouse gas emissions from 2002 levels

Specific requirements and responsibilities can be reasonably varied in the Service Level Matrix (SLM) agreed upon by DCAMM and the user agency.

Related Standards

The following DCAMM Standards set forth requirements related to Energy Management and Sustainability:

- FMMS 02 Grounds and Landscape Maintenance
- FMMS 03 Cleaning
- FMMS 04 Solid Waste Management



FMMS 10: Energy Management and Sustainability Standard

- FMMS 05 Routine Maintenance
- FMMS 06 Preventive and Scheduled Maintenance
- FMMS 07 Integrated Pest Management
- FMMS 08 Health and Safety
- FMMS 12 OFMM Project Management
- FMMS 13 Facility Information Management
- FMMS 14 Procurement of Equipment, Material and Building Services
- FMMS 15 Accessibility

Summary

The following topics and their related requirements are included in the Energy Management and Sustainability Standards and detailed under the “Requirements” section of this document.

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix SLM. This standard applies to leased buildings as well as commonwealth owned.

Commissioning is a quality-focused process for enhancing the delivery of a project. The process focuses upon verifying and documenting that the facility and all of its systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the Owner's Project Requirements.



Continuous Commissioning refers to the process that involves facility staff in regular periodic reviews of equipment performance and calibration.

Demand Response (DR) is a voluntary temporary reduction, or shift in a facility's electricity use, in response to a request from the utility company in order to reduce electrical use during periods when the electrical grid experiences peak demand (e.g. hot summer days). This shift in energy usage is accomplished by several means including switching to on-site emergency generators, and load curtailment (temporarily turning off non-essential equipment).

Energy Master Plan (EMP) refers to a document that establishes a long-term plan for a building or facility's energy systems that steadily moves them toward a sustainable, high performance future (i.e. less energy use, more use of renewable energy, etc.).

ENERGY STAR is a U.S. Environmental Protection Agency voluntary program that helps businesses and individuals save money and protect the environment through superior energy efficiency.

ENERGY STAR Portfolio Manager is a free online tool that **Facility Managers** can use to measure and track energy and water consumption as well as greenhouse gas emissions. It is used to benchmark the performance of one building or a whole portfolio of buildings.

E-Team Efficiency and Sustainable Buildings Group ("E-Team") is the business unit in DCAMM's Office of Facilities Management and Maintenance charged with reducing energy consumption, utility costs, and greenhouse gas emissions. The team also works to ensure that new construction and major renovation projects meet energy and water efficiency targets.

Enterprise Energy Management System (EEMS) refers to a metering system installed at several State facilities that allows Facility Managers to view energy performance on a real-time basis.

Environmentally Preferable Product (EPP) refers to a product or service that has a reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. EPPs include practices that minimize waste, conserve energy or water, reduce the amount of toxins either disposed or consumed, and products with recycled content.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Leadership in Energy and Environmental Design for Interior Design and Construction (LEED ID+C) is a rating system established through the U.S. Green Building Council (USGBC) for certifying "high-performance green occupant spaces that are healthy, productive places to work; are less costly to operate and maintain; and have a reduced environmental footprint. It gives occupants and designers, who do not always have control over whole building operations, the power to make sustainable choices."

Leadership in Energy and Environmental Design for Existing Buildings: Operations and Maintenance (LEED EB: O+M) is a rating system established through the U.S. Green Building



Council (USGBC) that “encourages owners and operators of existing buildings to implement sustainable practices and reduce the environmental impacts of their buildings, while addressing the major aspects of ongoing building operations. All buildings (as defined by standard building codes) are eligible for certification under LEED EB: O&M. It is targeted at single buildings, whether owner occupied, multi-occupant, or multiple-building campus projects. The prescriptive and performance strategies of LEED EB: O&M are intended to provide operational benefits throughout the life of the building. If these strategies are continued, a building can maintain and even improve its performance over time. Projects that certify under any version of LEED for Existing Buildings must recertify at least once every five years in order to keep their certification current.”

Leading by Example (LBE) is a State program established via Executive Order 484 that includes energy reduction and renewable energy use targets.

Life Cycle Cost Analysis (LCCA) estimates the true cost of a building or its components over its anticipated lifetime. LCCA includes not only the initial capital cost, but also reflects any available (utility) rebates in addition to operation and maintenance costs calculated in present value.

Mass. Department of Energy Resources (DOER) is the Commonwealth’s energy policy office which oversees efforts to ensure deployment of cost-effective energy efficiency measures including the development of clean energy resources, the ensurance of reliable energy supplies, the minimization of clean energy relative costs, in addition to supporting Massachusetts’ clean energy initiatives. The DOER Leading by Example Program works with DCAMM and many other agencies to develop strategies and programs to support clean energy and sustainability efforts across state government.

Mass. Department of Environmental Protection (MassDEP) is responsible for ensuring clean air and water, the safe management of toxics and hazards, the recycling of solid and hazardous wastes, the timely cleanup of hazardous waste sites and spills, and the preservation of wetlands and coastal resources throughout the Commonwealth. Through its participation in the Clean Energy Results Program, MassDEP advances environmental protection by promoting the development of renewable energy and energy efficiency projects in Massachusetts through its efforts to reduce barriers to clean and-energy efficient development across the state.

Mass LEED Plus is part of the standards included in EO 484 and applies to all new construction and major renovation projects over 20,000 square feet. This standard includes:

- Certification by the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) program
- Energy Performance 20% better than the Massachusetts Energy Code
- Independent 3rd party commissioning
- Reduction of outdoor water consumption by 50% and indoor water consumption by 20% relative to standard baseline projections
- Conformance with at least 1 of 4 identified smart growth criteria

MassSave® Incentive Program is an initiative sponsored by Massachusetts’ gas and electric utilities and energy efficiency service providers, including Columbia Gas of Massachusetts, The Berkshire Gas Company, Cape Light Compact, National Grid, Liberty Utilities, Northeast



Utilities/NSTAR, Unitil, and Western Massachusetts Electric Company. The Sponsors of Mass Save work closely with the Massachusetts Department of Energy Resources to provide a wide range of services, incentives, trainings, and information promoting energy efficiency that help residents and businesses manage energy use and related costs.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.

Owner's Project Requirements refers to a written document that details the functional requirements of a project and the expectations of how it will be used and operated. These include project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.

Retrocommissioning is the application of commissioning an existing facility, to improve the facility's performance by identifying opportunities for operational improvement increase occupant comfort and save energy.

Water Best Management Practices are implemented by facility staff to reduce water consumption by both building interior and exterior uses. These include but are not limited to: landscaping with native (and/or drought resistant) plants, capturing rainwater, using soil amendments, encouraging use of water filling stations, aerators on sinks, dual flush valves, etc.

Requirements⁹

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements throughout **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**
- 1.3 This Standard applies to activities that affect energy use and sustainability at all existing facilities under the care and control of DCAMM, and shall be followed by **facility managers, facility maintenance staff**, and contracted service providers.
- 1.4 Facility Managers and Staff
 - a. Carry out facility operation and maintenance activities to optimize energy efficiency,

⁹ All documents referenced under the "Requirements" section are included in the supplemental "Service Delivery" package.



including managing operations and load.

- b. Establish facility-specific processes and procedures to reduce energy use.
- c. Ensure that the facility supports all applicable statewide goals established for sustainability, energy, and water use.
- d. Ensure that the operation of the facility is in compliance with environmental rules and regulations.
- e. Work with the **E-Team** to carry out Energy Projects.
- f. Conduct periodic energy system assessments and report findings to E-Team.
- g. Comply with all requirements for tracking and reporting of energy and water use data.
- h. Work with DCAMM and/or contracted service provider to ensure all energy and water projects apply for and receive maximum utility incentives.
- i. Provide information and education to staff, service providers, and occupants to reduce energy and water use in the building.
- j. Participate in Demand Response programs.

1.5 General Contracted Service Providers (i.e. janitorial, landscape, etc.)

- a. Comply with any processes and procedures in place at the facility for reducing energy and water use related to the specific type of contracted service.
- b. Comply with all energy and sustainability related requirements included in the statewide service contract in place for the services being provided (i.e. creation of an Environmental Plan and Environmentally Preferable Purchasing).

1.6 DCAMM and the **Energy Efficiency and Sustainable Buildings Group (E-Team)**

- a. In collaboration with Leading by Example develop and implement a state government wide policy that encourages employees and service providers to reduce energy use.
- b. Ensure that facilities support established statewide sustainability goals, rules, and regulations.
- c. Oversee the implementation of energy projects and programs including, but not limited to, the **Accelerated Energy Program (AEP)**.
- d. Manage and administer energy and water projects under Chapter 25A, Section 11C, and Section 14.
- e. Coordinate agency participation in **MassSave®** incentive programs.
- f. Develop renewable energy projects.
- g. Implement and manage financing programs necessary to fund energy and water conservation projects.
- h. Provide advice and assistance to DCAMM staff (including **Facility Managers**) on incorporating sustainable design and energy efficiency in major renovation projects



and assist with **Life Cycle Costing Analysis** of proposed projects.

- i. Manage and participate in electricity grid initiatives such as, Alternative Portfolio Standards, Renewable Energy Credits, Demand Response, and Forward Capacity Market programs.
- j. Manage **LEED** registration and certification (LEED for Existing Buildings: Operations and Maintenance, and LEED for Interior Design and Construction).
- k. Provide technical assistance on energy efficiency, pollution prevention, technology developments, and program opportunities.
- l. Coordinate with DOER and **Leading by Example** on state facilities program development, grant applications and reporting.

2.0 Implementation

- 2.1 Utilize all available tools (i.e. equipment, operational processes and procedures, energy information, utility incentives, education, etc.) to reduce energy use at the facility.
 - a. Energy reduction shall not negatively interfere with, or prevent, the day-to-day activities of the building occupants.
- 2.2 Identify opportunities to implement innovative and cost-effective measures for energy use reduction at the facility.
- 2.3 Develop and implement a continuous commissioning program at appropriate **Commonwealth facilities**.
- 2.4 Daily Energy Management Activities:
 - a. Implement energy management practices for activities that are part of the day-to-day use of the facility and daily task related equipment (not including Mechanical, Electrical or Plumbing systems).
 - b. Ensure that all equipment and appliances for use at the facility comply with the Commonwealth's **ENERGY STAR** requirements and all relevant state procurement guidelines at time of purchase and during operation
 - c. Where real-time energy data is available, review and utilize such data on a regular basis to identify buildings that are not performing at an acceptable standard and make changes to schedules, equipment and/or building systems to bring buildings into acceptable energy use parameters.
- 2.5 Energy Contracts
 - a. Contract for services to implement projects that lead to a reduction in energy and water use at the facility.
 - b. Work with DCAMM **E-Team** to identify the appropriate contract type, develop procurement documents, review proposals, and coordinate implementation.
- 2.6 Demand Response



- a. Work with DCAMM to enroll in, and meet the requirements for participation of the facility in the ISO New England (ISO-NE) Demand Response Program.
 - b. Contracted service providers shall provide support services for facilities enrolled by the Commonwealth in the Forward Capacity Market.
- 2.7 Work with the **E-Team** and contracted service providers to complete a Life Cycle Costing Analysis of any major energy projects proposed for the facility.
- 2.8 Facility Manager and contracted service providers will participate in major renovation projects to ensure that the project meets all Mass **LEED Plus** goals.
- 2.9 Encourage environmentally preferable transportation options.
- a. Provide opportunities for all building users to access alternative transportation to access the building at facilities where alternative transportation is available.
 - b. Provide preferred and/or discounted parking to facility occupants commuting to the facility in ways that reduce fuel use and greenhouse gas emissions.

3.0 Materials and Equipment

- 3.1 Energy Performance Contracting Program
- a. Enables the state facility to upgrade energy and water related equipment with little or no up-front investments.
 - b. Enables the state to take advantage of innovative products and financing.
- 3.2 The procurement of all materials and equipment by a facility manager, facilities' staff, and/or contracted service providers shall comply with *E.O. 515: Environmentally Preferable Products*.
- 3.3 Products shall conform to all Federal, State, and local standards for quality and safety requirements.
- 3.4 The Facility Manager shall work with facility staff, DCAMM, and contracted service providers to ensure that all equipment specified and procured for the facility is high-efficiency and appropriate for the specific application.
- 3.5 Ensure all purchases of materials and equipment meet utility incentive requirements for energy and water use reduction and maximize utility incentives opportunities.
- 3.6 As per EO484 and EO515, replace all incandescent lighting with LED or Fluorescent lamps unless prevented by special circumstances resulting from legal and/or safety requirements for the specific facility and fixture location/type.
- 3.7 Maintain a list of all materials and equipment purchased for the facility and enter all information into CAMIS when appropriate.

4.0 Regulatory Compliance

- 4.1 Ensure compliance with the most current version (unless otherwise stated) of all applicable codes, laws and regulations.
- 4.2 Ensure all service providers are current on all applicable health and safety training



related to the services they provide and the products they use on a regular or infrequent basis. (i.e. OSHA, Massachusetts Right to Know Laws)

5.0 Training

- 5.1 Specific training requirements under each contract for procured services are based on the actual type of facility and service required. All training shall be consistent with the specific operational/programming requirements of the occupant agencies in the facility.
- 5.2 **Facility Managers**, staff, and contracted service providers shall provide and receive ongoing training not only on new equipment at the facility, but also on innovative new technologies that can reduce energy and water use.
- 5.3 Service providers must include training and/or education and outreach for facility managers, facility staff, and occupants as part of their contracted services.
- 5.4 A training program will be established to ensure that facility staff has appropriate skills to operate equipment and systems efficiently.

6.0 Communication

- 6.1 Work with occupants to reduce energy use through their daily activities.
- 6.2 Ensure regular communication with DCAMM **E-Team** and DOER on energy and water savings projects.
- 6.3 Inform occupants on the status of projects implemented at the facility to reduce energy and water use.
- 6.4 Provide information to occupants on building energy and water performance.

7.0 Tracking

- 7.1 All facilities will track and report on energy use to meet DOER and Leading by Example requirements.
 - a. Facility Managers shall ensure annual reporting to DOER
 - b. Facility managers or other appropriate staff shall provide updates to DOER on any changes to utility accounts
- 7.2 All facilities that have real-time energy metering in place shall conduct regular energy performance reviews at least weekly to ensure energy performance is being maintained and that equipment, systems, and schedules are performing as designed.
- 7.3 All projects shall have a Life Cycle Costing Analysis completed with the assistance of the E-Team and contracted service providers as applicable by law.
- 7.4 Consider the use of Energy Star Portfolio Manager to benchmark facility performance against other similar facilities.
- 7.5 All service providers must provide annual **EPP** purchasing data typically within 90 days of the close of each fiscal year
- 7.6 All service providers awarded statewide contracts will need to provide demonstrated



energy savings (cost and use), including but not limited to limited time special pricing, efficient products, energy efficiency rebates and others.

Tools and Resources

All tools and resources related to the Security Standard are included in an appendix to the complete FMMS.

- Commonwealth of Massachusetts Leading by Example (LBE) Program: <http://www.mass.gov/eea/leadingbyexample>
- DCAMM Energy and Sustainability: <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/energy-and-sustainability/>
- DCAMM Energy and Sustainability Services. <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/energy-and-sustainability/other-services/>
- DCAMM Life Cycle Cost Analysis Requirements: <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/energy-and-sustainability/other-services/life-cycle-cost-analysis.html>
- Demand Response and the Forward Capacity Market (FCM): <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/energy-and-sustainability/other-services/demand-response-and-forward-capacity-market-fcm.html>
- The Federal Energy Management Program (FEMP):
- International Organization for Standards. *ISO 50001 International Energy Management System Standard*
- Leadership in Energy and Environmental Design (LEED), Existing Buildings: Operations and Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Leadership in Energy and Environmental Design (LEED), Existing Buildings: Operations and Maintenance Rating System v2009.
- Massachusetts Executive Order 515, Establishing an Environmental Purchasing Policy
- Operational Services Division (OSD) FAC56: Request for Response (RFR) , Demand Response Services



Related Metrics

- Energy Use
- Energy costs for DCAMM facilities
- List of Incentives received and dollars awarded
- Energy Conservation Measures implemented and payback
- Life Cycle Cost Analysis of all Energy Conservation Measures, when applicable.
- Leading by Example program tracking metrics, including energy use per sq. ft., greenhouse gas emissions, water use, and percent renewable energy.
- Energy Star Portfolio Rating



Title	Standard No. /Revision No.	Date
Space Management	FMMS 11/ REV. 1	March 1 st , 2016

Purpose and Scope

The **Space Management** Standard establishes baseline requirements for allocating and managing space in **Commonwealth facilities** at the building level to ensure the appropriate assignment of space. The Space Management Standard focuses on the maintenance of accurate building occupancy information and consistent space management parameters to assist DCAMM and **facility managers** in meeting the needs of each **User Agency**.

Space management practices in **Commonwealth facilities** shall:

- Establish consistent methodology to measure space (floor areas such as usable and common space) and calculate the operation and management costs for each facility.
- Ensure the efficient use of existing space.
- Accurately report and track current space use to forecast future requirements. Ensure that if design occupancy is exceeded, commensurate modifications related to heating, ventilation, and air-conditioning are implemented.

Space management shall be consistent across all **Commonwealth facilities** and coordinated with the specific program needs and regulatory requirements of both the facility type and **User Agency**. The specific regulatory requirements of specialized facilities such as hospitals and correctional institutions are addressed in facility-specific supplements to the Facility Maintenance and Management Standards (FMMS). Implementation of all activities under this Standard shall ensure, and when appropriate, enhance accessibility for facility **occupants**.

The **Space Management Service Delivery and Performance Objectives** that support this Standard detail the activities required for successful implementation of the Space Management Standard as well as the specific performance objectives.

A **Service Level Matrix (SLM)** between DCAMM and the User Agency shall be established to detail specific space management tasks and their service level at each facility.

Specific requirements and responsibilities can be reasonably varied in the **SLM** agreed upon by DCAMM and the user agency.

Related Standards

The following FMMS also include references and/or requirements related to this Space Management Standard:

- FMMS 05 Routine Maintenance
- FMMS 06 Preventative Maintenance
- FMMS 13 Facilities Information Management



- FMMS 12 OFMM Project Management
- FMMS 15 Accessibility
- FMMS 17 Wayfinding

Summary

This Standard addresses the following items:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Training
- 5.0 Communication
- 6.0 Recordskeeping

Definitions

All terms defined below are also identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is provided as an appendix to the FMMS.

AutoCAD: A computer-aided design (CAD) program used for 2-D and 3-D design and drafting. AutoCAD allows users to design a building and structure and its components in 3-D, annotate the model with 2-D drafting elements, and access building information from the building's model database.

Building Amenity Areas: Areas within a building or building complex that house services which are helpful to the building **occupants** and whose presence is a convenience. Examples include food facilities, copying services, express mail collection, fitness centers or child care centers.

Building Code: A defined body of rules that govern and constrain the design, construction, alteration, and repair of buildings. Such codes are based on requirements for the safety, health, and quality of life of building **occupants** and neighbors, and vary from city to city.

Building Information Modeling (BIM): The development and use of a computer software model that serves as a digital representation of physical and functional characteristics of a facility to simulate its construction and operation. The resulting BIM is digital representation of the facility from which data may be extracted and analyzed to make decisions and improve the maintenance and operation of the facility.

Building Rentable Area: The actual square-unit of a building that may be leased or rented to **occupants**, and upon which lease or rental payments are computed. It usually excludes common areas, elevator shafts, stairways, and space devoted to cooling, heating, or other



equipment.

Building Service Area: Areas that serve building maintenance and operation. This type of space generally includes janitor's closets, receiving areas, loading platforms, trash rooms, and building storage areas.

Building Usable Area: Measured to predominant inside of exterior wall (Predominant face of wall is the inside finished surface that constitutes 50% or more of the vertical dimension between the finished floor and finished ceiling) and mid-point of occupant to occupant wall, and outside of common space wall – no deductions for interior structural elements.

Circulation spaces: The primary means of moving from one space to another within a building or in or out of the building itself. Circulation spaces include hallways, vestibules, corridors and lobbies.

Common Areas: These areas provide space for floor service, floor amenity, building service, and building amenity areas.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the **User Agency** and the negotiated **Service Level Matrix (SLM)**. This standard applies to leased buildings as well as commonwealth owned.

Facility Manager: The person responsible for the maintenance and operation of a facility, which includes oversight of all internal and external service providers.

Facility Staff: Internal service providers reporting to the **facility manager** for maintenance and the operation of a facility.

Finish Surface: The wall or ceiling surface, but excluding the thickness of special finishes applied by the occupant.

Floor Amenity Area: The space on a floor that provides convenience to more than one occupant.

Floor Rentable Area: The gross measured area minus the area of vertical penetrations.

Floor Rentable to Usable Ratio: The Floor Rentable Area divided by the Floor Usage Area. It is used to calculate the portion of use of the common area to the office area.

Floor Service Area: An area of a floor that provides the services necessary for occupancy on that floor, including elevator lobby, janitor closets, utility rooms, toilet rooms, and common corridors.

Floor Usable Area: The gross measured area less the floor service and floor amenity areas less the vertical penetrations.

Gross Areas of a Building: Standard Methods of Measurement (ANSI/BOMA Z65.3-2009)
- Provides a uniform basis which is used to compute, communicate and compare the measurement of buildings by gross building area and other floor area measurements.

Gross Building Area: The total constructed area of the building. It is the area used for appraisals, tax assessments, and parking tabulations. It is not to be used as the rentable area



of the building since it includes exterior walls and shafts.

Gross Measured Area: The area measured to the dominant portion of exterior walls, finished common area walls, and the centerline of walls that separate different occupants within the building. The measured area excludes major vertical penetrations.

OFMM Director of Operations and Maintenance Responsible for managing customer needs of user agency personnel.

Major Vertical Penetrations: Building elements such as stairs, elevator shafts, chases, chimneys and duct shafts, including their enclosing walls.

Net Floor Area: The type of floor area available to the occupant for a specific purpose that is used for rent calculations.

Occupants: Individuals that occupy space either because they are employed by the **User Agency** or by a Licensee of the User Agency.

Occupant Area: The same as Office Area; it is the area of a building occupied by an occupant that houses personnel, equipment, fixtures, furniture, and supplies.

Office Area: The lease space occupied by and for the exclusive use of the **occupant**.

Office Buildings: Standard Methods of Measurement (ANSI/BOMA Z65.1-2010) - This BOMA standard provides guidelines for measuring useable space in both existing and new sites by taking a building wide approach to floor area measurement. It identifies and assists in measuring both occupant space as well as the space that benefits all occupants.

Omni Class: A classification table that is used to name building spaces on floor plan documentation.

Portfolio: A financial term for a collection of investments.

Revit®: Software specifically built for **Building Information Modeling (BIM)**, empowering design and construction professionals to bring ideas from concept to construction with a coordinated and consistent model-based approach. Revit is a single application that includes features for architectural design, MEP and structural engineering, and construction.

Service Level Matrix (SLM): The agreement between the **User Agency** and the **Facility Manager/DCAMM** that combines information on the scheduling of all contracted services and their expected delivery period(s). It clearly states metrics, responsibilities and expectations and ensures that both parties have equal understanding of service requirements.

Space Information Management: Spatial information taken directly from drawings or **BIM** models.

Space Management: A comprehensive system for centralizing and storing real-time information about building(s), space under management and occupants.

Space Management Plan: Development and maintenance of a facility space inventory that assists in the analysis of capital outlay budget requests for new construction, renovation and other space-related factors.

Space Management Services Providers: The parties responsible for completing all space management-related activities for the facility. The space management service providers at the



facility are internal facility staff, external contracted providers, or both.

Space Utilization: The application and use of building/facility floor space.

User Agency: The state agency that has the legal right to occupy and use a space for its agency mission. A User Agency may have the exclusive use of an entire building, or in a multi-agency building it may have the exclusive use of a part of a building coupled with the right to use common areas jointly with others.

Requirements

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**.
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**
- 1.3 DCAMM shall:
 - a. Support the efficient space management of **Commonwealth facilities** including:
 - Determination of facility/building rentable areas
 - Development and implementation of a space management plan.
 - Review of overall expenses to determine how to reduce occupancy costs.
 - Production of accurate charge back reports
 - Management of space inventory
 - Publication of space and occupancy information
- 1.4 The **Facility Manager** shall:
 - a. Measure and update facility/building areas.
 - b. Translate facility/building measurements to **BIM**.
 - c. Collect operational and maintenance costs of the building/facility.
 - d. Conduct space audits and report to DCAMM annually or as warranted by changes in space needs. Communicate with HR departments to maintain current occupant data.
 - e. Collaborate with each user agency to maintain occupancy data.



f. Conduct regular reviews of the **space management plan** to adjust for changes.

1.5 All Service Providers shall:

- a. Provide space management services specific to both the **User Agency** space(s) and to the facility common spaces as identified in the space management services provider contract.
- b. Comply with all legal requirements applicable to **space management** and the specific User Agency as outlined in the **SLM**.

1.6 The **User Agency** shall:

- a. Implement strategic planning processes for space utilization that aligns space to support the user agency's strategic goals and maximizes the efficient use of space through consolidation.
- b. Coordinate **User Agency** strategic plan information with DCAMM **space utilization** standards
- c. Provide accurate updates of **User Agency** occupancy information to the **Facility Manager**.

2.0 Implementation

2.1 Measure and document the site's gross and net area including the following measurements:

- a. **Floor Usable Area** for each occupied floor level
- b. **Floor Service Area** for each occupied floor level
- c. **Floor Rentable Area** for each occupied floor level
- d. **Ratio of Rentable to Usable Floor Area**
- e. **Building Amenity Area**
- f. **Rentable Area** (office area plus allocated common areas)

2.2 Develop a **space management plan** using the following information:

- a. Different types of spaces
- b. Space standards
- c. **Building codes**

2.3 Determine ways to reduce occupancy costs by identifying and reducing vacancy and managing output density.

2.4 In collaboration with **User Agency**, plan for making the most of existing space by re-purposing vacant space and avoiding new leases and construction.

2.5 Produce accurate charge back reports.

2.6 Manage space inventory



- 2.7 Allocate space to the **User Agency**:
 - a. Access shared spaces and circulation
 - b. Assign chargeback rates by actual building operating cost
- 2.8 Manage occupancy
- 2.9 Publish space and occupancy information
- 2.10 Create an inventory showing all spaces within the portfolio and key attributes such as the type of space, size, and design characteristics. Maintain the inventory in **CAMIS** by documenting changes through integrations, refurbishments, acquisitions, or dispositions.
- 2.11 Allocate space to various **User Agencies**.
- 2.12 Provide the data necessary for cost recovery of operating expenses through space chargebacks.
- 2.13 Manage requests for additional space by identifying underutilized space or procuring new space via lease or property acquisition.
- 2.14 Annually maintain accurate drawings that reflect up-to-date depictions of occupancy for a given property.
- 2.15 Complete on-going data quality audits to ensure that space inventory is up to-date and all allocated space is being used as agreed by **User Agencies**.
- 2.16 Ensure floor plans are up-to-date for **Commonwealth facilities** based on availability of drawings through the following electronic methods: (refer to FMMS 13).
 - a. Use **BIM** to document floor plans for facilities without existing **AutoCAD** or BIM drawings.
 - b. Maintain distinct data sets for documenting the facility's floor plans with separate layers derived from **Auto CAD** or **BIM** files for facilities currently documented in AutoCAD or BIM.
- 2.17 Maintain current information on space occupancy and space utilization including:
 - a. **User Agency**
 - b. Number of personnel
 - c. Individuals assigned to work spaces
 - d. Functional space type using **Omni Class** Table 13
- 2.18 Identify areas within the facility that are not in compliance with DCAMM **space utilization** standards and document the resolution of any deviations.
- 2.19 Develop and maintain accurate calculations of management and operations costs to be borne by the **User Agency**, based on **rentable area** calculations.
- 2.20 Review costs periodically to verify that allocations are accurate and that all costs associated with the operation and management of the facility are fully accounted for in



the cost allocation specified for each occupant.

2.21 Prepare charge-back reports for each **User Agency**.

2.22 All **Space Utilization** services shall use procedures and practices in compliance with all applicable standards including:

- a. Assignment of space in compliance with DCAMM guidelines and standards
- b. Review space allocation and utilization in each facility.
 - Prepare a Space Allocation and Utilization Report for the facility, identifying all **user agencies** and the respective floor areas they occupy as a percentage of the total net rentable area.
 - Review spaces by type (**Omni Class 13**) in each facility (e.g. training rooms, meeting rooms) to identify areas where space utilization efficiency can be increased.

3.0 Materials and Equipment

3.1 **AutoCAD** software package

3.2 **Revit** software package

3.3 **BIM** software package

4.0 Training

4.1 Select **DCAMM staff** shall be trained to access and enter data into the DCAMM **AutoCAD and Revit** programs.

4.2 Select **DCAMM staff** shall be trained to access and input into the DCAMM **BIM** program.

5.0 Communication

5.1 DCAMM is responsible for communicating the following:

- a. All published space and occupancy information about the facility.
- b. Space Allocation and Utilization Report for the facility.

5.2 The **Facility Manager** is responsible for communicating the following:

- a. Accurate updates of **User Agency** occupancy information to DCAMM Office of Interior Planning, Design and Management.
- b. Updates to the **User Agency** of any new occupancy information.
- c. Operational and maintenance costs collected at the facility/building.
- d. Updates to DCAMM of any changes initiated by the **User Agency**.

6.0 Recordskeeping

6.1 Regularly updated **CAD** and **BIM** drawings and databases.



FMMS 11: Space Management Standard

- 6.2 Database of all gross, rentable, usable, and assignable areas by space and floor.
- 6.3 Different space types within the facility.
- 6.4 Preparation of accurate charge back reports.

Tools and Resources

All tools and resources related to the **Space Management Standard** are included in both an appendix to the complete FMMS and in the service level matrix for the Standard.

- ANSI/BOMA Z65.1-2010: Standard Methods of Measurement (Office Space)
- ANSI/BOMA Z65.3-2009: Standard Methods of Measurement (Voids)
- Division of Capital Asset Management and Maintenance (DCAMM) Leasing: Current Area Calculation Methodology.
- Division of Capital Asset Management and Maintenance (DCAMM): Space Office Planning Standards
- National Business Space Assignment Policy GSA Public Buildings Service Office of Real Property Asset Management. Feb 13

Related Metrics

- Maximization of assigned space metrics
- Occupancy costs reduction metrics
- New construction and leases for the Commonwealth of Massachusetts.



FMMS 12: OFMM Project Management Standard

Title	Standard No./Revision No.	Date
OFMM Project Management	FMMS 12 / REV. 1	March 1 st , 2016

Purpose and Scope

The purpose of the OFMM Project Management Standard is to provide consistent guidelines for the efficient planning and execution of qualified capital projects at **Commonwealth facilities**, including minor capital improvements, construction, renovations, and/or capital repairs and replacements.

The OFMM Project Management Standard specifies procedures for planning, contracting, and managing projects that meet the qualifications set forth by DCAMM and are completed under the administration of the **facilities manager**.

Alternative project delivery methods shall be approved by DCAMM and implemented in accordance with DCAMM's standard procedures for each delivery method.

The following are general requirements for multiple facility types; however, it is the responsibility of the facility manager to ensure that all facilities maintenance staff and contracted service providers follow all current rules, regulations, policies, and procedures relevant to the specific operational/programming requirements of occupant agencies in the facility. More detailed requirements and additional resources are included in the Service Delivery document for this Standard.

Specific requirements and responsibilities can be reasonably varied in the SLM agreed upon by DCAMM and the user agency.

Related Standards

The OFMM Project Management Standard includes some topics and requirements that are also found within other Standards included within the overall Facility Maintenance and Management Standards (FMMS). The following is a list of Standards referenced within the OFMM Project Management Standard:

- FMMS 05 Routine Maintenance
- FMMS 06 Preventative and Scheduled Maintenance
- FMMS 08 Facilities Information Management
- FMMS 15 Accessibility
- FMMS 16 Fire Safety



Summary

The following topics and their related requirements are included in the Project Management Standard and detailed under the “Requirements” section of this document.

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials & Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management responsibilities. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as Commonwealth owned.

Construction Management at Risk (CMR) Is defined as when a contractor is contractually obligated to provide leadership in the construction process through a series of services provided to the owner including design review, scheduling, cost control, value engineering, construction coordination, etc. After providing these pre-construction services, the contractor takes on the financial obligation to carry out the construction under a specified cost agreement.

Design-Bid-Build (DBB) contracting is the current project delivery method approved by DCAMM for all projects to be done in compliance with this Standard. Under the DBB delivery method, the project scope and documents are prepared by an architect/engineer, and the lowest qualified bidder is awarded the contract to complete the project.

Design-Build (D/B) is a project delivery system in which the design and construction services are contracted by a single entity known as the design-builder or design-build contractor. Design-build relies on a single point of responsibility contract. The design-build project delivery system is used to minimize risks for the project owner and to reduce the delivery schedule by overlapping the design phase and construction phase of a project.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and



operation of a facility.

Job Order Contracting (JOC) is a contracting method used by DCAMM in which a competitively procured contract covers multiple small projects initiated through Work Orders that utilize unit price books as the basis of cost. JOC works by pre-selecting contractors on qualifications and performance at best value pricing. Under JOC, DCAMM will qualify and select a number of contractors from whom a facility manager will be able to secure the contractor best qualified to complete a given project.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.

Project management is the discipline of planning, organizing, motivating, and controlling resources to achieve specific goals. A project is a temporary endeavor designed to produce a unique product, service, or result with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value. The temporary nature of projects stands in contrast with business operations, which are repetitive, permanent, or semi-permanent functional activities to produce products or services.

Requirements¹⁰

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted Service Providers
- 1.3 **Facility Managers**
 - a. Obtain and document in CAMIS a copy of the engineering evaluation or other approved study verifying the project need.
 - b. Prepare documentation of project scope and cost for review and approval by DCAMM.

¹⁰ All documents referenced under the “Requirements” section are included in the supplemental “Service Delivery” package.



- c. Prepare Project Plan for review and approval by DCAMM.
- d. File all project documentation in accordance with the requirements of Standard 13 “Facility Information Management” within 90 days of final completion of the project.

1.4 DCAMM

- a. Review the proposed project for applicability to and execution under this Standard.
- b. Provide timely reviews and approval or rejection of project documentation:
 - Documentation of project need
 - Project scope and cost information
 - Project Plan
- c. Provide a pre-qualified list of contractors from whom the facility manager may select an appropriate contractor for the approved project.
- d. Provide Service Delivery Guidelines for the selected project delivery method.

2.0 Implementation

- 2.1 An engineering evaluation or other study of existing conditions prepared by a qualified professional and documenting the project need, is required for all qualifying projects under this Standard.
- 2.2 Generally define the project scope and verify the applicability of this Standard to the proposed project.
 - a. Refer to applicable sections of Massachusetts General Laws Chapter 149.
 - b. Refer to applicable sections of Massachusetts General Laws Chapter 30, §39M.
 - c. Refer to DCAMM Guidelines for procurement of building maintenance and repair projects costing up to \$100,000.
- 2.3 Prepare a detailed scope of work for the project based on the engineering evaluation and include:
 - a. Items of required work categorized according to trade
 - b. Preliminary statement of probable cost
 - c. Preliminary project schedule
- 2.4 Prepare a Project Plan to address the following:
 - a. Scope of Work
 - b. Estimated Project Cost
 - c. Project Schedule
 - d. Project Delivery Method
 - e. Project Team
 - f. Project Documentation



g. Project Communication Plan

h. Project Safety Plan

2.5 Project procurement shall conform to DCAMM “Guidelines for procurement of building maintenance and repair projects costing up to \$100,000”.

2.6 Comply with DCAMM requirements applicable to the selected project delivery method. Alternative project delivery methods include:

a. **Job Order Contracting (JOC)** for a narrow-scope project such as paving repair, roofing system replacement, or in-kind equipment replacement.

b. **Design-Build (D/B)** contracting for schedule-sensitive projects or remedial construction to repair damage from disasters

c. **Design-Bid-Build (DBB)** contracting approved by DCAMM for all projects that qualify for completion under this Standard

2.7 Professional Project Services

a. Service Providers: Professional services required to perform an engineering evaluation and/or to prepare construction documents for a qualifying project under this Standard may be provided under a “House Doctor” contract.

b. Engineering Evaluations: Evaluations and studies documenting the need for the project shall comply with DCAMM “Guidelines for the Preparation of Studies for Building Projects”.

c. Project Documents: Construction documents prepared by project architectural and engineering firms shall comply with DCAMM “Designers Procedures Manual”.

2.8 Project Document Management

a. The following facility information shall be managed in CAMIS in compliance with Standard 13 “Facility Information Management”:

Existing floor plans (all disciplines), elevations, equipment schedules, etc. in digital format (i.e. CAD or BIM files)

Existing inspection reports, analysis reports and other evaluations documenting the project need.

Current facility condition assessment with capital plan in consultation with the MDPH/IAQ Program

3.0 Materials and Equipment

3.1 Comply with the Massachusetts “Environmentally Preferable Product” Procurement Program (EPP Program), established under EO 515, for materials, products and equipment required for projects completed under this Standard.

4.0 Regulatory Compliance

4.1 Comply with MGL 30 Section 39 and related Sections.



- 4.2 Comply with MGL Chapter 149 Section 44A and related Sections.
- 4.3 Projects shall conform to DCAMM Standard Specifications
- 4.4 The Project shall follow the Commonwealth of Massachusetts Building Codes 527 CMR and 780 CMR.

5.0 Training

- 5.1 Child care centers, hospitals, correctional facilities, and other specialized occupancies may have program requirements that affect the implementation of **project management** functions. DCAMM in conjunction with the occupant agency shall provide training to facility management personnel and outside vendors as needed to acquaint them with specific program requirements of the occupant agencies and the related requirements of operations and management functions.
- 5.2 Provide **Project Management** training to facility management personnel identified as project managers for any project completed under this standard.

6.0 Communication

- 6.1 Establish a communications plan to inform building occupants of project-related activities which affect the normal use and occupancy of the facility.
- 6.2 Provide monthly project status reports which, at a minimum, address:
 - a. Status - summary narrative
 - b. Schedule – proposed v. actual
 - c. Budget – estimated v. actual
 - d. Jobsite safety – inspections, training, claims, lost workdays
 - e. Critical issues

7.0 Recordskeeping

- 7.1 Monthly project reports shall be used to track actual project performance against planned performance.
- 7.2 Track contractor performance across all projects completed for DCAMM, to verify contractor compliance with contract requirements.

Tools and Resources

All tools and resources related to the Project Management Standard are included in an appendix to the complete FMMS.

- Division of Capital Asset Management and Maintenance (DCAMM): “*CAD Standards*”
- Division of Capital Asset Management and Maintenance (DCAMM): “*Designers Procedures Manual*”



FMMS 12: OFMM Project Management Standard

- Division of Capital Asset Management and Maintenance (DCAMM): *“Guidelines for Procurement of Building Maintenance and Repair Projects Costing up to \$100,000”*
- Division of Capital Asset Management and Maintenance (DCAMM): *“Guidelines for the Preparation of Studies for Building Projects”*
- Division of Capital Asset Management and Maintenance (DCAMM): *“Standard Specifications for Design-Bid-Build Projects”*
- Massachusetts General Laws Chapter 7C: *Capital Asset Management and Maintenance*
- Massachusetts General Laws Chapter 30: General Provisions Relative to State Departments, Commissions, Officers and Employees. *Section 39M: Contracts for Construction and Materials; Manner of Awarding*
- Massachusetts General Laws Chapter 149 Labor and Industries, Section 44A: *“Definitions; Competitive Bids; Award; Bonds; Extreme Emergency Situations; Records Contracts not Subjected to Competitive Bid Process”*

Related Metrics

- Project document review:
 - Performance vs. budget
 - Performance vs. schedule
 - Change Orders
- Project expense auditing
- Safety records



Title	Standard No./Revision No.	Date
Facility Information Management	FMMS 13 / REV.1	March 1 st , 2016

Purpose and Scope

This Standard supports the strategic vision for DCAMM OFMM by utilizing software mediums and management strategies to provide facilities information over the entire life-cycle of a physical asset.

DCAMM intends to use and manage facility information to create greater operating efficiencies. This standard will improve facilities management statewide in the following ways:

- Normalize standards and eliminate data discrepancies and redundancy
- Allow DCAMM to optimize space use reporting and management
- Maximize equipment service lives by optimizing maintenance management
- Efficiently plan and fund capital modernization and improvements
- Reduce energy consumption

This standard provides guidelines to the facility manager for information management related to design, procurement, construction, condition assessment, repair, renovation, adaptation, utilization, capital planning and budgeting, life safety, security, and sustainability of existing buildings/facilities owned by the Commonwealth of Massachusetts.

DCAMM facility information management strategies including **Building Information Modeling (BIM)**, **Geographic Information Systems (GIS)**, in addition to web-based management systems as tools for developing, maintaining, accessing and using facility-related information. The scope of this Standard includes the basic goals and objectives associated with the use of BIM and related facility technologies.

Specific requirements and responsibilities can be reasonably varied in the Service Level Matrix (SLM) agreed upon by DCAMM and the user agency.

Related Reference Standards

- FMMS 01 Security
- FMMS 05 Routine Maintenance
- FMMS 06 Preventative Maintenance
- FMMS 09 Emergency Management
- FMMS 10 Energy Management and Sustainability
- FMMS 11 Space Management
- FMMS 12 OFMM Project Management



- FMMS 15 Accessibility

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Asset management is the linking of data in a record model to a database of building assets to assist in efficiently maintaining and operating the facility.

Building information modeling (BIM) refers to the generation and management of digital representations of a facility. Building information models contain “object-intelligent information” including physical and functional characteristics of building systems, components and furnishings. When managed as complete sources of facility information, BIMs are shared knowledge resources that support decision-making about a facility from design and construction, through its operational life.

Capital Asset Management Information System (CAMIS) is the facility information management system implemented by DCAMM in response to an initiative authorized in 1999 by the Massachusetts legislature. CAMIS has been implemented to manage the State's capital assets and capital equipment. CAMIS is utilized to manage data and assist facilities in their daily maintenance activities.

Construction Operations Building Information Exchange (COBie), as referenced in this Standard, is a format through which data reported/exported from a Building Information Model may be read/imported into a CMMS/IWMS system such as **CAMIS**. COBie is recognized as a part of the National **BIM** Standard (NBIMS), and is a defined BIM Use Case and contracted deliverable in the DCAMM BIM Guide.

Commissioning is the process of verifying that a new building or facility's subsystems (for example: building envelope, plumbing, electrical and lighting, HVAC, life safety, wastewater controls, and security) achieve the project requirements as intended by the building owner and as designed by the building architects and engineers. Specific asset information developed and verified during this process may be collected using COBie spreadsheet data.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as Commonwealth owned.

Decommissioning is the process of closing down and demolishing a facility at the end of its useful life-cycle.

Facility life-cycle is the view of a facility over the course of its entire life taking into account the design, construction, commissioning, operation, and decommissioning phases.

Facility information management is an integration of process and technology to enable the



efficient life-cycle management of facilities. A key ingredient of facility information management is the use of building information modeling.

Facility systems analysis is measuring how a facility's performance compares to the design model predictions to ensure that the facility is operating to specified design and sustainable standards. It typically focuses on how a facility's mechanical system operates and how much energy a facility uses.

Geographic Information Systems (GIS) is the collection, management, and use of facility digital data accurately referenced to a precise location on the earth's surface. **BIM** data can be integrated with GIS to create a seamless re-use and re-purposing of facility data for additional Commonwealth of Massachusetts requirements. GIS tools enable users to access and manipulate GIS data.

Routine Maintenance refers to simple, small-scale activities and specific work-order requests associated with general upkeep and continued operation of a building, site, equipment, machine, plant, or system against normal wear and tear. Typically, it includes activities that are completed by the facility management staff and regularly contracted facility service providers, rather than specialized professionals. Routine maintenance is done within a specific period of time (e.g. daily, weekly, monthly, etc.).

Maintenance History is the documentation of all actions (work orders, routine, replacement and preventative maintenance) and observations relevant to the operation and performance of an asset. This history is maintained in the DCAMM **CAMIS** application.

OmniClass Construction Classification System (OCCS) is a means of organizing and retrieving information specifically designed for the construction industry. It is designed to provide a standardized basis for classifying information created and used by the North American architectural, engineering and construction (AEC) industry, throughout the full facility life cycle from conception to demolition or reuse.

Predictive (Preventive) Maintenance is proactive work performed by various trades personnel based on scheduled inspections, scheduled testing, and minor element replacements. Preventive Maintenance consists of a series of maintenance requirements that provide a basis for planning, scheduling, and executing scheduled maintenance, planned versus corrective for the purpose of improving equipment life and to avoid any unplanned maintenance activity/minimize equipment breakdowns.

Programming is the identification of the spatial, functional, and operational requirements for a facility (uses, areas, required adjacencies, etc.) to meet the projected needs and goals of the facility or partial facility. Program Validation assesses the accuracy, efficiency and effectiveness of a design in meeting those requirements.

Project life-cycle is a time based view of a facility project over the course of the planning, design, construction, and commissioning and handover processes. This view focuses on activities during a project's active design, construction, and delivery phases. It is a subset of the building life-cycle and excludes operating and maintenance activities that commence after a building is commissioned. The project lifecycle uses OmniClass Table 31 for phase definitions.

Project parameters are parameters that are defined and then added to multiple categories of



elements in a project. They are specific to the project and cannot be shared with other projects. You can use shared parameters to define project parameters and then associate these project parameters with specific categories of elements within a project.

Record model is an accurate digital representation of the physical conditions, environment, and assets of a facility **BIM** model.

Retrocommissioning Is the process of commissioning to an existing facility to improve the facility's performance by identifying opportunities for operational improvement that will increase occupant comfort and save energy.

Requirements

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**.
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**
- 1.3 These Standards apply to all existing facilities and new facilities that are planned and constructed for initial occupancy after the date of this document.
- 1.4 Facility Managers
 - a. Maintain current documentation of facility operational plans including:
 - Facility Security Plan, including security infrastructure
 - Facility Health and Safety Plan
 - Emergency Management Plan
 - b. Maintain current maintenance management documentation
 - Contracts for services (e.g. grounds and landscape maintenance, cleaning, solid waste management, integrated pest management, etc.)
 - Procedures and policies for maintenance functions
 - c. Maintain operational information throughout the occupancy of the facility
 - Routine Maintenance, including work orders (see FMMS 05)
 - Preventive and scheduled maintenance (see FMMS 06)
 - Space utilization (see FMMS 11)



- Systems performance (BAS-generated data) including energy consumption
- d. Ensure training is provided to facility management staff

1.5 DCAMM Office of Planning, Design and Construction

- a. Representational and functional facility data will be documented using BIM during the design, engineering, and construction of new facilities, and major renovations of existing facilities.
- b. As as-built **BIM** will be provided to the **Facility Manager** upon final completion and initial occupancy of the new or renovated facility

1.6 **Service Providers**

- a. Contracted maintenance service providers shall furnish all contract documents in the digital format specified by DCAMM.

2.0 Implementation

2.1 **Building Information Modeling (BIM)** will be used to develop and maintain an accurate digital representation of the physical and functional characteristics of a facility.

- a. BIM will be used to document existing and new facilities' representational, functional, and space information.
- b. With continuous updating, the record model will serve as a "living document" that contains an accurate, current record of the facility.
- c. Record models will include links to relevant facility information when BIM is determined as the authoritative source for the information.

2.2 Data Collection

- a. Facility data will be documented using **BIM** for new facilities and major renovations of existing facilities.
- b. For existing facilities, data currently maintained on paper or in other legacy formats will be converted to BIM files as authorized by DCAMM. New or updated information related to the facility will be documented in BIM and saved in the digital format approved by DCAMM.
- c. Data will be saved and distributed in the format approved by DCAMM.
- d. Facility information shall include documentation of commissioning and retro-commissioning activities.

2.3 Data Maintenance

- a. Collect and maintain facility information throughout the occupancy phase of the building life cycle.
- b. Document changes to facility design, engineering, and construction as a result of updates and renovations.
- c. Document changes to service contractors, equipment suppliers, system details, quantities and replacement equipment, to provide for accurate **preventive**



maintenance planning.

d. Locations and access to facility equipment as it is replaced shall be updated as appropriate, to aid in planned maintenance and emergency management.

2.4 Space management will be done using **BIM** as the means to analyze the existing space utilization, evaluate proposed changes, and effectively plan for future needs.

a. Maintain current and accurate information concerning changes to space utilization and occupancy.

b. Changes in occupant agency floor plans shall be promptly and accurately recorded.

2.5 Geographic Information Management (GIS)

a. It is DCAMM's goal to maintain geographically referenced facility information statewide in a digital format, using a Geographic Information Systems (GIS).

b. Use **GIS** tools to maintain current and accurate information and provide support for:

- Facility mapping
- Real estate site selection for agencies
- Maintenance and service route management
- Emergency and evacuation planning
- Data analysis

2.6 Maintenance Management

a. Document maintenance activities through the use of **CAMIS**.

b. Comply with CAMIS Standard Operating Procedures published by DCAMM.

c. Manage and provide access to facility record documents through CAMIS.

2.7 Building Automation Systems data documentation shall include the following:

a. Operation of system controllers such as PLC's, system network, and terminal units.

b. Interior environmental conditions for occupants such as ambient temperature, humidity, etc.

c. Central plant function.

d. Alarms and security equipment testing

2.8 Capital Planning information

a. Facility Condition Assessments (FCAs) on the type and condition of major systems and components shall be provided for each facility.

b. Data obtained in the FCA will be tabulated in the format specified by DCAMM for integration into **CAMIS**.

3.0 Materials and Equipment

3.1 Building Information Modeling software



3.2 **CAMIS** data entry application

3.3 Reports and other documents

4.0 Regulatory Compliance

4.1 **BIM** Standards

- a. Building Information Models shall be created and maintained in accordance with DCAMM's BIM Standards.
- b. Comply with applicable provisions of the National BIM Standard – United States (NBIMS), published by the National Institute of Building Sciences.

4.2 OmniClass Construction Classification System

- a. OmniClass shall be used across DCAMM applications and processes to normalize facility, operational, and service data.

5.0 Training

5.1 **CAMIS** training

- a. General: Training shall be scheduled and administered to facility management personnel in the use of CAMIS, as needed to assure the complete and accurate maintenance of facility information.
- b. Service Requests: Provide training for creating and managing maintenance requests and work orders.
- c. Buildings and Equipment: Provide training in equipment inventory and location management.
- d. **Preventive Maintenance:** Provide training in preventive maintenance management.
- e. **Project Management:** Provide training in creating and managing projects within the Facility Manager's scope of project management (see FMMS 12).
- f. Data Analysis and Reporting: Provide training in navigation within the CAMIS database, accessing and sorting data, and creating reports.

6.0 Communication

- 6.1 Ensure that facility information management procedures are communicated to all staff responsible for accessing, using, updating and/or managing facility-related information.
- 6.2 The **BIM** Execution Plan for each new DCAMM facility should specify a representative of the facility management team, for the purpose of including facilities management in the design, construction and commissioning/start-up phases of the project.

7.0 Recordskeeping

- 7.1 Provide documentation of compliance with the requirements of this standard on a periodic basis as required by DCAMM's CAMIS Standard Operating Procedures.



- 7.2 Provide energy account information to DCAMM and the Leading By Example (LBE) program to allow for utility energy consumption tracking. If energy account numbers change, provide DCAMM and LBE with an updated list of all utility accounts and providers.

Tools and Resources

- Cholakis, Peter (2011), White Paper - *BIM for FM/BIMF: Change on the Horizon*, Colorado Springs, CO: 4Clicks Solutions
- Commonwealth of Massachusetts Executive Office for Administration and Finance, “**Building Information modeling (BIM)** List of Design and Preconstruction Services”, September 16, 2013
- Division of Capital Asset Management and Maintenance (DCAMM): *CAD Standards*, February 2, 2013
- Eastman, Chuck, Teicholz, Paul, Sacks, Rafael, Listom, Kathleen (2008): *BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors*, Hoboken, NJ: John Wiley & Sons, ISBN-13:978-0-470-18528-5
- Hardin, Brad (2009), *BIM and Construction Management: Proven Tools, Methods, and Workflows*, Indianapolis, IN: Sybex, ISBN-13: 978-0-470-40235-1
- Jernigan, Finith (2007), *BIG BIM little bim: The Practical Approach to Building Information Modeling*, Washington, DC:4Site Press, ISBN-13: 978-0-9795699-0-6

Related Metrics

- Optimum performance in facility information management will result in improved space management, streamlined maintenance, efficient energy use, economical renovations, and enhanced life-cycle management for a net reduction in costs for the Commonwealth of Massachusetts.
- Complete as-built BIMs for facilities in the DCAMM portfolio
- Completed Facility Condition Assessments for DCAMM properties
- Long-term Capital Improvement Planning
- Facility Condition Indexes (FCI) for DCAMM assets



Title	Standard No./Revision No.	Date
Procurement of Equipment, Material, and Building Services	FMMS 14 / Rev.1	March 1 st , 2016

Purpose and Scope

The Procurement of Equipment, Material and Building Services Standard establishes minimum requirements for the procurement of commodities and services related to the operations and maintenance of all **Commonwealth facilities**. Regulations and policies that guide all procurement activities for facilities in the Commonwealth include, but are not limited to, the following:

801 CMR 21.00, Procurement of Commodities and Services, Including Human and Social Services empowers departments to procure commodities and services at the “best value” for both the department and the Commonwealth using the best value philosophy and standard guidelines, including an evaluation process and performance measures. All Executive Branch departments must follow **801 CMR 21.00** for the acquisition of commodities and services.

Executive Order 515, Establishing an Environmental Purchasing Policy (E.O. 515), requires companies providing services to Executive Branch Agencies to use environmentally preferable (green) practices as specified in Commonwealth statewide contracts.

Executive Order 523, Small Business Purchasing Program (E.O. 523), supports small businesses by providing them special consideration within the Commonwealth's procurement process for goods and services required by state agencies. E.O. 523 applies to all small businesses in Massachusetts that meet the Program's eligibility requirements.

Executive Order 524, Supplier Diversity Program (E.O. 524), promotes the award of state contracts in a manner that develops and strengthens Minority-owned and Women-owned Business Enterprises (M/WBEs).

Executive Order 533, Enhancing the Efficiency and Effectiveness of Executive Department Procurements and Establishing a Municipal Procurement Program (E.O. 533), supports improved coordination, centralization, and implementation of best practices at the secretariat-level of state agency procurements and the oversight and aggregation by the Operational Services Division of all procurements. E.O. 533 aims to achieve significant cost-savings, while receiving goods and services equal or better than those presently purchased.

Non-Executive Branch departments are not required to follow **801 CMR 21.00** for the procurement of commodities and services; however, they are strongly encouraged to use it on a voluntary basis.

The following commodities and services are not covered by 801 CMR 21.00.

- Horizontal Construction (MDOT)
- Vertical Construction (DCAMM)
- Real Property Sales and Leasing (DCAMM)



FMMS 14: Procurement of Equipment, Material, and Building Services Standard

- Interdepartmental Service Agreements and Chargebacks (Office of the Comptroller)
- Grants and Subsidies (Office of the Comptroller)

Specific requirements and responsibilities can be reasonably varied in the SLM agreed upon by DCAMM and the user agency.

Related Standards

The Procurement Standard includes some topics and requirements within the scope of other Standards included within the overall Facility Maintenance and Management Standards (FMMS). The following is a list of related Standards.

- FMMS 01 Security
- FMMS 02 Grounds and Landscape Maintenance
- FMMS 03 Cleaning
- FMMS 04 Solid Waste Management
- FMMS 05 Routine Maintenance
- FMMS 06 Preventative and Scheduled Maintenance
- FMMS 07 Integrated Pest Management
- FMMS 08 Health and Safety
- FMMS 09 Emergency Management
- FMMS 10 Energy Management and Sustainability
- FMMS 11 Space Management
- FMMS 12 OFMM Project Management
- FMMS 13 Facility Information Management
- FMMS 14 Procurement of Equipment, Material and Building Services
- FMMS 15 Accessibility
- FMMS 16 Fire Safety
- FMMS 17 Wayfinding



Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Commodities are products that can be bought and sold.

“Commodities and Services” is the phrase used by the Massachusetts “Procurement Information Center” when describing the procurement of anything (goods, products, equipment, services, etc.) by all Executive departments and any Non-Executive departments that have elected to follow 801 CMR 21.00.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated **Service Level Matrix (SLM)**. This standard applies to leased buildings and Commonwealth owned.

Durable Goods or “hard goods” are items that are used over an extended period time and are not consumed or destroyed in short-term use. Durable goods typically have a higher cost per unit and multiple-year periods between purchases (i.e. electronic equipment, furniture, appliances, machinery, lawn equipment, etc.).

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the **Facility Manager** for maintenance and operation of a facility.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.

Incidental Purchases are one-time, unanticipated, non-recurring purchases of goods or services that are not available from a Statewide Contract. Incidental purchases do not require a competitive procurement or contract. Incidental purchases are authorized under object codes governed by M.G.L. Chapter 7, Section 22.

Large Procurements are purchases of goods or services with a value greater than \$150,000, or as otherwise established by the Commonwealth of Massachusetts Office of the Comptroller.

Ongoing Consumables refers to low-cost-per-unit materials that are regularly used and replaced through daily operations. (i.e. printing and copying paper, notebooks, envelopes, business cards, sticky notes, paper clips, ink and toner cartridges, binders, batteries, etc.)

Procurement refers to the act of obtaining or buying goods and services. The process includes preparation and processing of a demand as well as the end receipt and approval of payment.

Request for Responses (RFR) (also known as: **“solicitation”** or **“procurement”**) is the method for communicating the contract performance specifications to potential bidders. The goal of an RFR is to obtain best value commodities and services and to define the expected outcomes. Requirements and procedures for the individual RFRs will vary based on the



particular need, the complexity, and the total value of the contract.

Service Level Matrix (SLM): A document that details each of the specific facility maintenance and management services that DCAMM OFMM will provide to a User Agency of a **Commonwealth facility** and any that may be retained by the User Agency or Occupant. This document is negotiated between OFMM and the User Agency or Occupant and forms part of the Facilities Management Agreement, Occupancy Agreement, or other similar agreement between DCAMM OFMM-and an Occupant.

Services include but are not limited to the furnishing of time, labor, effort, and specialized skills of a contractor including operational, professional, consultant, maintenance and repair, non-professional, and human and social services (i.e. janitorial services, landscaping services, architectural services, engineering services, environmental consulting services, etc.).

Small Procurements are defined as purchases of goods or services with a value between \$10,000 and \$150,000, or as otherwise established by the Commonwealth of Massachusetts Office of the Comptroller.

Statewide Contracts are established using the requirements of 801 CMR 21.00 by the Operational Services Division's (OSD) Procurement Management Teams on behalf of the Commonwealth. Departments that follow 801 CMR 21.00 are required to use Statewide Contracts, regardless of the dollar amount of the purchase.

Strategic Sourcing Team (SST) is responsible for the continuous evaluation and improvement of purchasing activities related to a specific service or commodity. The SST is responsible for identifying and verifying the need, sources and timing of purchases. A SST is composed of program area experts and procurement staff from the purchasing department, with a Team Leader to guide the team throughout the procurement process. Department SSTs must monitor contractor performance and customer satisfaction at the department level. Thus, the SST is maintained for the term of the contract.

Requirements¹¹

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of this Standard and its requirements throughout **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**

¹¹ All documents referenced under the "Requirements" section are included in the supplemental "Service Delivery" package.



- b. **Facility Staff**
- c. Contracted **Service Providers**

1.3 The Facilities Manager is responsible for the following duties:

- a. Identify a procurement need at the facility
- b. Determine the “**Procurement Type**”
- c. Contact the DCAMM procurement specialist for assistance with the procurement process.
- d. Comply with applicable Commonwealth statutes, regulations, policies, and procedures.
- e. Oversight and tracking of all contracted service providers carrying out work at the facility under the procurement contract
- f. Utilize COMMBUYS to track provider performance throughout the life of the contract.

1.4 DCAMM Procurement Specialist responsibilities include the following:

- a. Work with the **Facility Manager** to verify the **procurement** need and determine the “Procurement Type”.
- b. Conduct all procurements for commodities and services for the department consistent with all applicable Commonwealth statutes, regulations, policies, and procedures.
- c. Create a Departmental **SST**.
- d. Contact **OSD** for assistance with the procurement process and to create an OSD SST, when applicable.
- e. Utilize established OSD statewide contracts for the purchase of commodities and services at the facility, when available.
- f. Utilize COMMBUYS to identify existing statewide contracts and complete the procurement process for the specific commodity or service needed at the facility.
- g. Maintain a procurement file for all solicitations conducted by the department.
- h. Maintain updated RFR and contract information on COMMBUYS.

1.5 **Strategic Sourcing Teams (SST)**

- a. Teams are created at both the **OSD** level and individual department level depending on the contract type, but both teams follow the same structure, function, and process and include members with expertise in both procurement and the contract subject matter.
- b. Manage the procurement throughout the life of the contract.

1.6 The **Operational Services Division (OSD)**

- a. Establishes statewide contracts on behalf of Commonwealth public purchasers



- b. Provides technical assistance to departments in their procurement process
- c. Ensures that departments conduct the procurement process in compliance with all related statutes, regulations, and policies

1.7 The Office of the Comptroller (CTR)

- a. Serves as an oversight department responsible for the Commonwealth's fiscal operations
- b. Provides financial, legal, and technical assistance to all departments regarding the state finance law issues involved in the procurement process.
- c. Establishes specific guidelines on committing funds and payments for procurement through the Massachusetts Management Accounting and Reporting System (MMARS)

1.8 Contracted Vendors

- a. Meet all requirements and regulations identified in the Contract entered into at the time the contract was awarded.
- b. Meet specific requirements for contracted service providers at facilities under the **Commonwealth facilities**, as identified within each individual FMMS Standard and their associated Service Level Matrices
- c. vice Delivery Documents.
- d. Work with **OSD** and the SST to develop and implement an Environmental Plan, which shall be in place for the life of the Contract.

- 1.9 Specific requirements for commodities procured at facilities under **Commonwealth facilities** are identified within individual FMMS Standards and the associated Service Delivery Documents.

2.0 Strategies and Services

2.1 Three types of procurement under 801 CMR 21.00

- a. Incidental Purchase, under \$10,000
- b. Small Procurement, \$10,000 to \$150,000
- c. Large Procurement, \$150,000 and above

2.2 **Facility Managers** shall determine the procurement type required to meet the specific need by answering the following questions:

- a. What is the specific procurement need and why is it necessary?
- b. Is the specific need a commodity, a service, or both?
- c. What is the total cost of commodities and/or services to address the specific need?

2.3 A summary of current requirements for each procurement type is included in the Procurement Service Delivery document - "Quick Reference Chart: Procurement of Goods and Services under 801 CMR 21.00."



2.4 The minimum and maximum contract (dollar) amounts for each type of procurement are updated on a periodic basis. The **Facility Manager** shall contact the Operational Services Division's Procurement Information Center to verify current cost thresholds (minimum and maximum limits) and associated requirements for each type of procurement.

2.5 **Procurement** Process Overview

- a. Initiate Procurement
- b. Designate a **SST** and a Team Leader
- c. Create a procurement time line
- d. Develop Request for Response (RFR)
- e. Solicit Bids from Service Providers
- f. Evaluate bids
- g. Award the service contract
- h. Review contract requirements and ensure service provider can meet them at the start of the contract
- i. Monitor contract performance and level of customer satisfaction

3.0 Materials and Equipment

- 3.1 The **procurement** of all materials and equipment by a facility manager, facilities' staff and/or contracted service providers shall comply with *E.O. 515 Environmentally Preferable Products*.
- 3.2 Products shall conform to all Federal, State, and local standards for quality and safety requirements.
- 3.3 The **Facility Manager** and contracted service professionals shall maintain a list of all materials and equipment purchased for the facility.

4.0 Health and Safety

- 4.1 All work shall comply with the applicable requirements of 29 CFR §1910 and State and municipal safety and health requirements. Where there is a conflict between applicable regulations, the more stringent shall apply.
- 4.2 All **procurement** managers shall ensure management and safeguarding of security-sensitive information during the procurement of goods and services through the Commonwealth's Procurement Access and Solicitation System (COMMBUYS) and other public bidding and contracting processes.

5.0 Training and Communication

- 5.1 Specific training requirements under each contract for procured services are based on the actual type of facility and service required. All training shall be consistent with the specific operational/programming requirements of the occupant agencies in the facility.



- 5.2 Service providers must include training and/or education and outreach for facility managers, facilities staff, and occupants as part of their contracted services.
- 5.3 General **procurement** training includes, but is not limited to the following.
 - a. Procurement process
 - b. COMMBUYS System
- 5.4 *MASSbuys*: OSD's annual marketing and training trade show is held to educate public purchasers and contract end-users on the following:
 - a. Commodities and services available on statewide contracts
 - b. Innovative environmentally preferable (green) products
 - c. Marketing and networking opportunities to the business community.

6.0 Recordskeeping

- 6.1 All procurement contracts must be entered into COMMBUYS, which is a database inventory of all open and closed statewide contracts and their associated requirements and forms.
- 6.2 All service providers must provide annual EPP purchasing data typically within 90 days of the close of each fiscal year
- 6.3 All commodities (goods, products, equipment, etc.) purchased for use at the facility must be tracked and recorded with purchase date, cost, and in the appropriate tracking system for that commodity type, including, but not limited to the following.
 - a. Ongoing Consumables
 - b. Durable Goods
- 6.4 All vendors providers awarded **Statewide Contracts** will have their performance tracked and evaluated on an ongoing basis, for use in determining whether to extend or terminate the contract. User departments will be surveyed for their satisfaction with the contractor's performance under the contract. Contractor performance will be evaluated based on the following:
 - a. Level of sales / number of customers
 - b. Demonstrated savings by Eligible Entities, including but not limited to limited-time special pricing, efficient products, energy efficiency rebates, and others
 - c. The number and nature of complaints received from user departments
 - d. Timeliness of deliveries
 - e. Instances of sale of excluded items
 - f. Success in promoting EPPs to Eligible Entities
 - g. Quality of customer service
 - h. Compliance with reporting requirements



- i. Performance during emergency situations
- j. Other relevant factors

Tools and Resources

All tools and resources are also in an appendix to the complete **FMMS**.

- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Massachusetts Office of the Comptroller: *Expenditure Classification Handbook*
- Operational Services Division (OSD): *Procurement Information Center* <http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/conduct-a-procurement/procurement-information-center.html>
- Operational Services Division (OSD): *Statutory Authority, Regulations and Executive Orders* <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/osd/osd-statutory-authority-regulations-and-executive-orders.html>
- Operational Services Division (OSD): “*Quick Reference Chart: Procurement of Goods and Services under 801 CMR 21.00* Accessed via <http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/conduct-a-procurement/procurement-information-center.html>
- Operational Services Division: (OSD): *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Operational Services Division: (OSD): *Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools*. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- The most recent Policy Updates related to Commonwealth procurement policy are accessed here: <http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/conduct-a-procurement/osd-policies-regs/osd-policy.html>



Related Metrics

Track the following metrics to create a comprehensive view of activities and purchasing that is occurring at facilities under the Commonwealth facilities:

- Vendors and reviews
- Environmental record
- MBE/WBE/Small Business participation
- Purchases (equipment, products and materials)
- Conformance to project and delivery schedules
- Conformance to project budgets



Title	Standard No./Revision Name	Date
Accessibility	FMMS 15 / REV.1	March 1 st , 2016

Purpose and Scope

This Accessibility Standard establishes baseline requirements for operating and maintaining **Commonwealth facilities** in compliance with state and federal accessibility regulations and for carrying out accessibility improvements so that when viewed in their entirety, the programs, services, and activities that occur at these facilities, are accessible to, and usable by persons with disabilities

The Commonwealth of Massachusetts is committed to providing buildings and facilities that are usable by all persons.

In addition to the requirements of this Standard, all **Commonwealth facilities** must ensure compliance with all state and federal disability-related, non-discrimination laws and regulations including:

- **The Americans with Disabilities Act (ADA)**
- **Rules and Regulations of the Massachusetts Architectural Access Board (MAAB) found at 521 Code of Massachusetts Regulations (CMR)**
- **The 2010 ADA Standards for Accessible Design**

Although accessibility measures at **Commonwealth facilities** shall be consistent with state and federal laws for all facility common spaces, additional measures may be necessary and further tailored to the specific program needs and regulatory requirements of the User Agency. Detailed implementation strategies shall be included, as applicable in the related **Service Level Matrix (SLM)**.

The **Service Delivery and Performance Objectives** document that supports this Standard shall detail the activities necessary for successful implementation of the Accessibility Standard at the facility, as well as the performance goals for ensuring accessibility measures meet program needs and requirements. As applicable, the related **Service Level Matrix (SLM)** shall detail the specific service levels available to the **User Agency** and their associated costs.

The specific regulatory requirements of specialized facilities such as hospitals and correctional institutions are addressed in facility-specific supplements to the Facility Maintenance and Management Standards (FMMS).

Specific requirements and responsibilities can be reasonably varied in the **SLM** agreed upon by DCAMM and the user agency.



Related Standards

The following FMMS also include references and/or requirements related to this Accessibility Standard:

FMMS 01	Security
FMMS 02	Grounds and Landscape Maintenance
FMMS 03	Cleaning
FMMS 04	Solid Waste Management
FMMS 05	Routine Maintenance
FMMS 06	Preventive and Scheduled Maintenance
FMMS 07	Integrated Pest Management
FMMS 08	Health and Safety
FMMS 09	Emergency Management
FMMS 10	Energy Management and Sustainability
FMMS 11	Space Management
FMMS 12	OFMM Project Management
FMMS 13	Facility Information Management
FMMS 14	Procurement of Equipment, Material & Building Services
FMMS 15	Accessibility
FMMS 16	Fire Safety
FMMS 17	Wayfinding

Summary

This Standard addresses the following items:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Training
- 5.0 Communication
- 6.0 Recordskeeping



Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

2010 ADA Standards for Accessible Design: Guidelines issued by the U.S. Access Board establishing minimum requirements – both scoping and technical -- for new construction and alteration of state and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities. This Standard, which became effective March 15, 2011, supersedes the ADAAG, the American with Disabilities Architectural Guidelines, issued in 1991.

521 CMR “Architectural Access Board Rules and Regulations”: The regulations promulgated by the Architectural Access Board pursuant to M.G.L. c. 22, s. 13(a), which is the statute of the Commonwealth that requires public buildings and facilities to be accessible to, functional for, and safe for use by persons with disabilities. It is the intent of 521 CMR to provide persons with disabilities full, free, and safe use of all buildings and facilities so that all such persons may have the educational, living, and recreational opportunities necessary to be as self-sufficient as possible and to assume full responsibilities as citizens.

Accessible Means of Egress: A continuous and unobstructed way of egress travel from any point in a building or facility that provides an accessible route to an area of refuge or area of rescue assistance, a horizontal exit, or a public way.

Accessible Route: A continuous, unobstructed path connecting all *accessible* elements and spaces within or between *buildings* or *facilities*. Interior *accessible routes* may include corridors, floors, *ramps*, elevators, lifts, and *clear floor space* at fixtures. Exterior *accessible routes* may include parking, *access aisles*, *curb cuts*, and crosswalks at vehicular ways, *walks*, *ramps*, and lifts.

Accessibility: The ability to approach, enter, operate, participate in, and/or use safely a site, facility, work environment, or service, by a person with a disability.

Accessibility Audit: A comprehensive assessment of a facility to determine non-compliant accessibility elements, conducted by DCAMM’s Accessibility Consultants or others using a systematic checklist and reporting format approved by DCAMM.

ADA Strategic Compliance Assessment: An analysis of an agency’s level of compliance with the ADA, completed by DCAMM’s Accessibility Consultants, and serving as an updated ADA Self Evaluation. The report identifies high priority ADA issues that need immediate mitigation, accessibility projects that may require capital funding, changes needed to policies and procedures, and accessibility improvements that can be undertaken by facility staff.

ADA Implementation Plan: An agency’s response to the ADA Strategic Compliance Assessment, identifying the actions that will be taken to achieve compliance with the ADA. In conformance with the requirements of the ADA Transition Plan, it will include a completion date and a responsible party. The Implementation Plan will be updated on an annual basis.

Administrative Bulletin ANF 19, “Enhancing Coordination and Integration to Promote Accessibility”: Published by the Commonwealth’s Executive Office of Administration and



Finance, this bulletin became effective on April 1, 2011. It outlines and establishes the policy and programmatic framework through which the Commonwealth will proactively act to remove physical and programmatic barriers that limit equal participation in state programs, activities and services. ANF 19 also establishes the Universal Access Committee (UAC), which makes recommendations to the Office of Administration and Finance including defining, overseeing and coordinating implementation of the actions necessary to achieve the purpose and policy of Administrative Bulletin 19.

Americans with Disabilities Act (ADA): The federal statute enacted on July 26, 1990 and amended in 2008 that defines anti-discrimination protections ensuring the civil rights of people with disabilities, similar to the anti-discrimination protections under the Civil Rights Act of 1964 based on race and gender. The ADA broadly defines the rights of individuals with disabilities to equal opportunity in employment, access to state and local government services, private sector places of public accommodation, transportation, and other important areas of American life.

ADA Coordinator: The ADA requires that entities of state and local government designate ADA Coordinators to ensure compliance with all disability rights-related federal and Massachusetts laws, regulations, policies and procedures, including but not limited to the Americans with Disabilities Act of 1990 (ADA), ADAAA 2008, the Federal Rehabilitation Act (1973) as amended, Executive Order 526, the Governor’s Model Employer Program, and Administration and Finance Administrative Bulletin #19. This designated individual advises the Agency Head on promoting access and equal opportunity for people with disabilities in programs, activities and services of state government, including employment, and is responsible for overseeing compliance-related actions and assisting with disability-based discrimination complaints at the Agency and its facilities.

ADA Title I: The section of the ADA that prohibits private employers, State and local governments, employment agencies and labor unions from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, advancement, compensation, job training, and other terms, conditions, and privileges of employment and requires an employer to provide reasonable accommodation to qualified individuals with disabilities who are employees or applicants for employment, unless to do so would cause undue hardship. Reasonable accommodations may include modifications to a building or facility designed to address the specific needs of an employee needing accommodation.

ADA Title II: The section of the ADA applies to State and local government entities, and protects qualified individuals with disabilities from discrimination on the basis of disability in services, programs, and activities provided by State and local government entities. Title II extends the prohibition on discrimination established by section 504 of the Rehabilitation Act of 1973, as amended, to all activities of State and local governments regardless of whether these entities receive Federal financial assistance. Title II establishes 5 administration requirements: designating a qualified individual as an ADA Coordinator, posting notice of non-discrimination based on ADA, establishing an ADA grievance procedure, conducting an ADA self-evaluation survey, and creating an ADA transition plan.

Area of Refuge or Area of Rescue Assistance: An area which has direct access to an exit where people who are unable to use stairs or unable to travel more than 100 feet to a public



way may remain temporarily in safety to await further instructions or assistance during an emergency evacuation. Areas of refuge are required by the International Building Code in most newly constructed public buildings and additions, unless they are fully sprinklered.

Capital Asset Management Information System (CAMIS) is the facility information management system implemented by DCAMM in response to an initiative authorized in 1999 by the Massachusetts legislature. CAMIS has been implemented to manage the State's capital assets and capital equipment. CAMIS is utilized to manage data and assist facilities in their daily maintenance activities.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as commonwealth owned.

Controlling Agency: A state agency with the “legal control or jurisdiction” of the property as provided by M.G.L. Chapter 7C, Section 41, which carries with it the right to “occupy, or make expenditure for the maintenance of, any land, buildings or other state-owned or state-occupied facilities.” Control and jurisdiction does not mean that a state agency is the owner of the property since the Commonwealth owns all state property.

Disability: Defined by the ADA as “a physical or mental impairment that substantially limits a major life activity, a history or record of such impairment, or being regarded as having such an impairment”.

DCAMM ADA Coordinator: This designated individual advises DCAMM’s Commissioner on promoting access and equal opportunity for people with disabilities in programs, activities and services of state government, including employment, and is responsible for overseeing compliance-related actions and assisting with disability-based discrimination complaints at DCAMM and its facilities,

DCAMM Security Manager: This position reports to the Deputy Commissioner of Facilities Management and will work closely with the DCAMM Office of Facilities Management and Maintenance to implement standards and integrate security into the shared services model for Commonwealth facilities.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

OFMM Director of Operations and Maintenance: Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.

Licensee: Individual or entity that is not a state agency or state employee but occupies space of a User Agency as part of a service contract or other arrangement with the User Agency to further the User Agency’s mission, or that occupies space as part of a contract with DCAMM to further DCAMM’s services. For example, a private consulting firm hired by an agency might be



provided with offices inside the agency's space. The consulting firm would be a licensee.

Massachusetts Architectural Access Board (MAAB): The regulatory agency within the Massachusetts Executive Office of Public Safety that develops and enforces regulations designed to make public facilities accessible, functional, and safe for use by persons with disabilities. MAAB regulations are -- found in Section 521 of the Code of Massachusetts Regulations. The Board receives and adjudicates complaints of non-compliance, provides advisory opinions on its regulations, and may grant variances if compliance can be demonstrated: 1) to be technologically unfeasible or, 2) to result in excessive and unreasonable costs without any substantial benefit to persons with disabilities.

Massachusetts Office on Disability (MOD): The agency within the Executive Branch designated as its ADA Coordinator to oversee and administer the Commonwealth's compliance with the Americans with Disabilities Act (ADA). MOD's mission is to ensure the full and equal participation of all people with disabilities in all aspects of life by working to advance legal rights, maximum opportunities, supportive services, accommodations and accessibility in a manner that fosters dignity and self-determination.

Occupant(s): The individuals or entities that occupy space in a Commonwealth facility by virtue of their status of a Controlling Agency, **User Agency**, or because they are permitted to use the space as a Licensee of the User Agency.

Program Accessibility: A public entity may not deny the benefits of its programs, activities, and services to individuals with disabilities because its facilities are inaccessible. A public entity's services, programs, or activities, when viewed in their entirety, must be readily accessible to and usable by individuals with **disabilities** in a time-frame and setting equivalent to people without disabilities. This standard applies to all existing facilities owned or occupied by the Commonwealth. Public entities, however, are not necessarily required to make each of their existing facilities accessible if program accessibility can be achieved through administrative and operational, non-structural solutions, such as scheduling a program in a comparable, accessible space, as long as the alternative is of the same quality as the original. Government entities are not required to take actions that would result in a fundamental alteration to the nature of the service, program, or activity in question or that would result in undue financial or an administrative burden. This determination can only be made by the head of the public entity and must be accompanied by a written statement of the reasons for reaching that conclusion. The determination that undue burden would result must be based on all resources available for use in a program. If an action would result in such an alteration or such burdens, the entity must take any other action that it can to ensure that people with disabilities receive the benefits and services of the program or activity.

Security Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Service Delivery and Performance Objectives: The supplemental document for each Standard that details the activities necessary for successful implementation of the Standard at **Commonwealth facilities**, as well as the performance goals for ensuring these activities meet the anticipated level of service. This document shall also align with the activities listed within the **Service Level Matrix (SLM)**.



Service Level Matrix (SLM): A document that details each of the specific facility maintenance and management services that DCAMM OFMM will provide to a User Agency of a Commonwealth facility and any that may be retained by the User Agency or Occupant. This document is negotiated between OFMM and the User Agency or Occupant and forms part of the Facilities Management Agreement, Occupancy Agreement or other similar agreement between OFMM and an Occupant.

Service Providers: The parties responsible for completing all maintenance and management activities under this standard. Service providers at the facility are internal facility staff, external contracted providers, or both.

Universal Design (UD): A conceptual framework for the design of places, products, information, communication and policy to be usable by the widest range of people operating in the widest range of situations without special or separate design. Most simply, Universal Design is human-centered design of everything with everyone in mind.

User Agency: A state agency that has the legal right to use and occupy all or a portion of any building, facility, improvement, or property owned by the Commonwealth for its agency mission and purposes. A User Agency may have the exclusive use of an entire building, or in a multi-occupancy facility, it may have the exclusive use of part of the building and the right to use common areas with other users. A User Agency is also an “Occupant” as defined herein.

Requirements

1. Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance**, or an appointed designee, shall ensure implementation of this Accessibility Standard and its requirements throughout **Commonwealth facilities**
- 1.2 The **OFMM Director of Operations and Maintenance** shall work with the **User Agency ADA Coordinators** to identify and resolve their specific accessibility needs and concerns at the facility, including, but not limited to, security procedures, maintenance schedules, housekeeping, and signage
- 1.3 The **OFMM Director of Operations and Maintenance** shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**
 - d. **DCAMM ADA Coordinator**
 - e. **User Agency ADA Coordinators and/or on-site managers**
- 1.4 The **OFMM Director of Operations and Maintenance** and **Facility Manager** shall utilize resources for technical assistance and training, including, but not limited to the



following:

- a. **Massachusetts Office on Disability (MOD)**
- b. **Massachusetts Architectural Access Board (MAAB)**
- c. Internal and external subject matter experts

- 1.5 Each **User Agency** shall have a designated **ADA Coordinator** to handle employee Title I requests and accommodation requests by the public to programs, services and activities within its space

2.0 Implementation

The **OFMM Director of Operations and Maintenance** shall ensure the following accessibility measures are in place, as applicable, throughout **Commonwealth facilities**. The **OFMM Director of Operations and Maintenance** shall determine the individuals responsible for carrying out each measure listed below on a case-by-case basis depending on the specific facility.

- 2.1 Work with the **User Agency** to identify its specific accessibility needs for both the site and facility common spaces, and the space(s) it occupies within the facility.
- 2.2 Ensure the facility complies with all **accessibility** regulations as identified in the **ADA Strategic Compliance Assessment and Implementation Plan** and or the **Accessibility Audit** report.
- 2.3 Work with the User Agency to ensure accessibility to the programs, services and activities and employee work areas within the **User Agency** space.
- 2.4 Maintain in fully working condition those features of facilities and equipment that are required to be readily accessible to and usable by persons with disabilities.
- 2.5 Ensure accessibility measures are in place and operational to allow access and movement into and around the site and facility, including, but not limited to the following:
 - a. Provide and maintain interior and exterior accessible routes.
 - b. Test all operable accessible elements (i.e., door pressure and closing speed, automatic door openers, lifts).
 - c. Maintain essential communication systems and signage.
- 2.6. Ensure facility alterations, repairs or replacement of any element are in compliance with the requirements of **Title II of the ADA**, the **2010 ADA Standards for Accessible Design**, and the **Massachusetts Architectural Access Board (MAAB)** regulations (521 C.M.R.).
 - a. Identify the accessibility requirements in ADA and 521 CMR for any element that may be touched as part of a project.
 - b. Determine whether the cost of the work performed triggers additional MAAB accessibility compliance for building elements such as entrances and toilet rooms .A variance must be requested from the MAAB prior to any repair or alteration for any



required element that cannot be brought into compliance.

c. Determine if any work being performed on a primary function area requires accessibility improvements to the existing path of travel between the facility entrance and the primary function area.

d. Review the work performed by in-house service providers, contractors, and state vendors to ensure it is in compliance with accessibility regulations.

e. Ensure facility alterations and repairs occur with the least amount of disruption possible for people with disabilities.

f. Ensure arrangements for continuity of service in the event of isolated or temporary interruptions in services due to maintenance or repairs. Comply with **MAAB** requirements for temporary accessible routes during construction.

2.6 Update Capital Improvement Plans for inclusion of accessibility improvements identified in the **ADA Implementation Plan** and/or **Accessibility Audit**.

2.7 Plan the mitigation of high priority accessibility issues identified in the **ADA Implementation Plan** and/or **Accessibility Audit** by identifying funding and scheduling renovations or repairs in accordance with the schedule established in those documents.

2.8 Maintain written policies and procedures to ensure program accessibility when barriers have not been mitigated. Train all **facility staff** and **User Agencies** to be knowledgeable about how equal access is provided in the facility.

2.9 Ensure security and emergency management policies and procedures at the facility are inclusive of and responsive to the needs of persons with disabilities, including effective communication, by reviewing the facility's security and emergency management policies and procedures on a regular basis with the facility's **Security Manager**, the **DCAMM ADA Coordinator**, and **MOD**.

2.10 Maintain effective communication in the building including fixed signage, electronic information systems, audio visual equipment, assistive listening systems, visual emergency alarms, and two-way communication systems in areas of refuge

2.11 Maintain building information and signage in compliance with both **MAAB** and **ADA** requirements as well as FMMS 17 Wayfinding

a. Maintain an accessible facility web page of essential building information such as hours of operation, accessible parking, accessible entrances, and the contact information for the **ADA Coordinator**.

b. Provide accessibility information when physical elements of the facility are altered, temporarily out of service, or when temporary or permanent changes affect the usability of equipment, spaces or accessible routes

c. Update signage as necessary to reflect changes at the facility (e.g., room changes, egress routes, etc.).

2.12 Maintain up-to-date information in the Commonwealth's **Capital Asset Management**



Information System (CAMIS) database program including, but not limited to updates to the **ADA Implementation Plan**, including changes in priorities and timetables, and recording accessibility improvements made to the facility.

3.0 Materials and Equipment

This section identifies high level regulations, requirements, and categories related to materials and equipment for ensuring accessibility throughout **Commonwealth facilities** and shall not serve as an all-inclusive inventory.

- 3.1 Include **ADA** compliance language in all contracts and purchase orders (i.e., non-discrimination, design, installation, operation) and monitor compliance.
- 3.2 Ensure that maintenance purchasing policies & procedures do not discriminate against people with disabilities.

4.0 Training

The **OFMM Director of Operations and Maintenance** shall approve and oversee training content and requirements, and ensure that all service providers have proper training in compliance with the accessibility requirements under their specific contracts

An ongoing accessibility training program shall be in place for all service providers and User Agency representatives to ensure compliance with all accessibility-related requirements, procedures, processes, and products required by OFMM facilities maintenance procedures.

- 4.1 **Facility managers** must receive technical assistance and training resources on accessibility so that they can manage and operate facilities in compliance with state and federal accessibility laws.
- 4.2 In addition to the above training programs, **service providers** shall comply with any other training requirements their contracts require.

5.0 Communication

The **OFMM Director of Operations and Maintenance** shall ensure specific and appropriate communication across staff, service providers, and facility occupants for the successful and transparent implementation of all standards.

- 5.1 **Service providers** shall not communicate directly with facility **occupants**. All communication with facility occupants shall only occur through the **OFMM Director of Operations and Maintenance**, the **facility manager**, or a designated representative.
- 5.2 Ensure that communications with persons with disabilities are as effective as communications with others.
- 5.3 Provide signage at all inaccessible elements in the facility, directing users to an accessible element, including paths of travel, entrances, toilet rooms, and drinking fountains, and maintain signage required by the **ADA or MAAB**. Signs shall also be provided indicating how to contact the **ADA Coordinator**.
- 5.4 Ensure that persons with visual, auditory and cognitive disabilities, can access information regarding the availability and location of accessible services, activities, and



facilities as well as emergency notifications and egress.

- 5.5 Provide appropriate auxiliary aids and services where necessary to afford an individual with a disability an equal opportunity to participate in, and enjoy the benefits of, a service, program, or activity conducted by facility **occupants**.

6.0 Recordskeeping

The **OFMM Director of Operations and Maintenance** shall ensure the following recordskeeping activities occur throughout **Commonwealth facilities**. The **OFMM Director of Operations and Maintenance** shall determine the individuals responsible for tracking and collecting the below information on a case-by-case basis depending on the specific facility.

- 6.1 Steps taken to address non-compliance identified in the **ADA Implementation Plan** and/or Accessibility Audit report.
- 6.2 Access improvements that are to be addressed in the coming fiscal year

Tools and Resources

All tools and resources related to the Accessibility Standard are included in an appendix to the complete FMMS

- Commonwealth of Massachusetts 521 CMR *“Architectural Access Board Rules and Regulations”*
- Massachusetts Administrative Bulletin 19, *“Enhancing Coordination and Integration to Promote Accessibility at State Facilities or to State Programs, Services and Activities”*
- U.S. Department of Justice. American with Disabilities Act (ADA): *Title II Part A* (2010).
- U.S. Department of Justice. American with Disabilities Act (ADA): *ADA Standards for Accessible Design* (2010).

Related Metrics

- Maintain the **ADA Implementation Plan** and/or **Accessibility Audit** report with updates on accessibility improvements completed. It will be reviewed on a regular basis, and also anytime modifications to the facility are planned. It will document in writing any policies and procedures instituted to provide program access.
- The effectiveness of accessibility will be measured by how **occupants** with disabilities can navigate the facility, based on grievances and complaints made to the **Facility Staff, OFMM Director of Operations and Maintenance, and MOD**.
- Updated information in **CAMIS**.



FMMS 16: Fire Safety Standard

Title	Standard No./Revision No.	Date
Fire Safety	FMMS 16 / REV.1	March 1 st , 2016

Purpose and Scope

The purpose of this Fire Safety Standard is to protect lives and **Commonwealth facilities** in conjunction with state, municipal building, and fire protection agencies, and to collaborate with such agencies in the prevention of fire and the advancement of fire safety education programs. This Standard establishes the minimum fire safety requirements for Commonwealth facilities, in order to achieve the following goals:

- Operate and maintain fire protection and life safety systems that effectively detect, notify occupants, contain, and control or extinguish a fire event in the early stages
- Improve overall building safety to protect human life, reduce potential loss, and control the environmental impact from fire and products of combustion
- Protect the real and personal property of the Commonwealth of Massachusetts

The requirements for each building or facility are to be reviewed to establish a detailed standard for that building's specific fire safety needs. The review will result in a building-specific standard that includes a fire safety policy and a Fire Safety Plan. All Fire Safety Plans shall conform to all code requirements which may require local authority approval. Additionally, all Fire Safety Plans shall conform to state code requirements which require approval by the State Fire Marshal for the Commonwealth. All Massachusetts state buildings must conform to all fire safety regulations prescribed by 780 CMR (The State Building Code) and related standards.

Buildings with advanced functional requirements such as data centers, laboratories and hospitals may require mission-specific level standards.

Specific requirements and responsibilities can be reasonably varied and the Service Level Matrix (SLM) agreed upon by DCAMM and the user agency.

Related Reference Standards

The Fire Safety Standard includes requirements that impact and are referenced within other FMMS Standards. The following is a list of Standards referenced within the Fire Safety Standard:

- FMMS 01 Security
- FMMS 06 Preventative Maintenance
- FMMS 09 Emergency Management
- FMMS 15 Accessibility



- FMMS 17 Wayfinding

Summary

The following topics and their related requirements are included in the Fire Safety Standard and detailed under the “Requirements” section of this document.

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Regulatory Compliance
- 5.0 Training
- 6.0 Communication
- 7.0 Recordskeeping

Definitions

All terms defined below are identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is an appendix to the FMMS.

Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management responsibilities. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as commonwealth owned.

Facility Manager: Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers.

Facility Staff: Internal service providers reporting to the facility manager for maintenance and operation of a facility.

Fire Safety Code (*527 CMR: Board of Fire Prevention Regulations*) is a model code adopted by the state and enforced by fire prevention officers within municipal fire departments. It is a set of rules prescribing minimum requirements to prevent fire and explosion hazards arising from storage, handling, or use of dangerous materials, or from other specific hazardous conditions. It complements the building code. The fire code is aimed primarily at preventing fires, ensuring that necessary training and equipment will be on hand, and that the original design basis of the building, including the basic plan set out by the architect, is not compromised. The fire code also addresses inspection and maintenance requirements for various types of fire protection equipment in order to maintain optimal active fire protection and passive fire protection measures.



Fire Safety Coordinator is a person responsible for facility/building personnel training and fire drills. The Fire Safety Coordinator will usually be a member of the Incident Management Team (for emergency management).

Fire Safety Plan is a document that specifies a set of facility/building-specific safety measures and action items in the event of fire. The plan includes key contact information, the location of utility services, access issues, the locations of dangerous stored materials, the locations of people with special needs, the locations for sprinkler system connections, a layout/drawing/site plan of the facility/building, maintenance schedules for all life safety systems, and personnel training/fire drill procedures. A current approved Fire Safety Plan is required in all **Commonwealth facilities**, and is to be made available to the local fire authority.

Incident Management Team (IMT) is a team of individuals including, but not limited to the Facility Manager, Security Director, Life Safety Coordinator, key agency personnel identified by the stakeholder that manage the logistical, fiscal, planning, operational, safety and community issues related to an incident, emergency or other sentinel event.

Life Safety Code (NFPA 101) is the most widely used source for strategies to protect people based on building construction, protection, and occupancy features that minimize the effects of fire and related hazards. It applies to existing structures as well as new structures. (NFPA is a reference standard that may assist with determining a solution to an issue, but is not a CMR.)

Local Fire Authority is the chief Fire Official (or authority having jurisdiction) or their designated representative for the city/town in which the facility/building is physically located.

NFPA Code 13 is the **National Fire Protection Association** standard for the installation of automatic sprinkler systems. **NFPA 25** is the baseline for inspection, testing, and maintenance of water-based fire protection systems. Compliance helps maximize system integrity to avoid failure and ensure fast, effective response in a fire emergency.

NFPA 72 provides the latest safety provisions to meet society's changing fire detection, signaling, and emergency communications demands. In addition to the core focus on fire alarm systems, the Code includes requirements for mass notification systems used for weather emergencies; terrorist events; biological, chemical, and nuclear emergencies; and other threats.

OFMM Director of Operations and Maintenance: Responsible for managing user agency customer needs.

State Building Code (780 CMR: Massachusetts State Building Code) is a set of rules that specify the minimum acceptable level of safety for constructed objects such as buildings and non-building structures. The main purpose of building codes is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment, and to provide safety to fire fighters and emergency responders during emergency operations.



Requirements

The following are requirements for multiple facility types. It is the responsibility of the facility manager to ensure that all facilities maintenance staff and contracted service providers follow all current rules, regulations, policies, and procedures relevant to the specific operational and programming requirements of occupant agencies in the facility. The following topics and their related requirements are included in the Fire Safety Standard and detailed under the “Requirements” section of this document.

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance**, or an appointed designee, shall ensure implementation of this Standard and its requirements at all **Commonwealth facilities**.
- 1.2 The **OFMM Director of Operations and Maintenance**, and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**
 - c. Contracted **Service Providers**
- 1.3 DCAMM Support responsibilities include the following:
 - a. Work with the **facilities manager** and Incident management team to verify that the plan meets the requirements of **527 CMR 10 (Code of Massachusetts Regulation)**
 - b. Work with the facilities manager and Incident management team to review the Fire Safety plan to ensure it functions as intended
 - c. Verify through the Department of Fire Services that the plan is consistent with all applicable Commonwealth statutes, regulations, polices, and procedures
 - d. Assist the Incident Management team and facility manager during all phases of the fire safety plan
 - e. Ensure that any renovation, change of use and/or construction that may take place is appropriately designed, constructed, permitted and inspected in accordance with provisions of **780 CMR (The State Building Code)**
- 1.4 Facilities Manager is responsible for the following duties:
 - a. Work with the Incident Management team to verify that the plan meets the requirements of **527 CMR 10 (Code of Massachusetts Regulation)**
 - b. Assist the Incident Management team in executing the plan
 - c. Work collaboratively with Incident Management team to test and improve the plan
 - d. Assist the Incident Management team during an emergency



1.5 Incident Management Team responsibilities include the following:

- a. Establish a facility specific Emergency Management plan as per **527 CMR 10**
- b. Work with the facilities manager and DCAMM to verify that the plan meets the requirements of 527 CMR 10
- c. Communicate the plan to the local fire authority and occupant agency liaison
- d. Carry out the plan
- e. Work with critical personnel to test and improve the plan
- f. Administer the plan continuously and at all times during an emergency

1.6 It is the responsibility of the occupant agency occupants, suppliers and visitors to adhere to the fire safety plan both during testing and actual fire emergency.

1.7 Fire Department Responsibility: The local Fire Department will assume command and control of a fire emergency at any facility at which a fire emergency occurs.

2.0 Implementation

2.1 Fire Risk Assessment

- a. Assure that the facility has a current Fire Risk Assessment, performed annually by a qualified professional with expertise in regulatory requirements related to fire protection in buildings.
- b. The facility Fire Risk Assessment shall report the following:
 - Identify Fire Hazards
 - Identify Facility Users at Risk
 - Evaluate specific risks
 - Document findings

2.2 Fire Safety Policy

- a. Assure that the facility has a Fire Safety Policy in place, based on the findings from the most current Fire Risk Assessment.
- b. The facility Fire Safety Policy shall address the following, as appropriate as established by **780 CMR (The State Building Code)**:
- c. Structural fire protection: Building construction classification, fire resistance rating requirements, fire doors, etc.
- d. Means of Egress, including required signs, illumination and maintenance of exitways
- e. Firefighting equipment: extinguishers, hose connections
- f. Maximum occupant load
- g. Occupant responsibilities



2.3 The approved Fire Safety Policy shall address specific hazards in the facility, which may include but are not limited to the following:

- a. Kitchen areas
- b. Electrical systems and equipment
- c. Batteries and battery systems
- d. Flammable and/or hazardous liquids, aerosols, and other combustible products
- e. Equipment that generates heat, flame, or sparks
- f. Equipment that generates heat and utilizes combustible materials
- g. Heating appliances – fireplaces, wood burning stoves, furnaces, boilers, portable heaters

2.4 Fire Safety Code

- a. Certification for servicing, placement, and inspecting fire extinguishing equipment
- b. General storage and handling of flammable and/or hazardous liquids, solids, and gases
- c. Limits on locations and quantities of flammables
- d. Emergency exits
- e. Maintenance of clear exitways
- f. Firefighter use/access to exit ways (These are established by **780 CMR.**)
- g. Removal of hazardous materials
- h. National Electric Code requirements
- i. Fuel Gas Code requirements

2.5 Approved Fire Safety Plan

- a. Key contact information
- b. Utility Services (including shut-offs for water, gas, and electric)
- c. Access issues
- d. Dangerous stored materials
- e. Location of people with special needs
- f. Connections to sprinkler system, (where applicable)
- g. Layout, drawing, and site plan of building/facility
- h. Maintenance and testing schedule for Life Safety systems

3.0 Materials and Equipment

3.1 The Facility/building shall have the necessary fire safety equipment as required on hand and maintained per NFPA Standards, applicable regulatory standards, and



manufacturers recommendations.

- a. A current Approved **Fire Safety Plan**
- b. Fire extinguishers
- c. Displayed emergency contact information
- d. Displayed emergency exit plan
- e. Illuminated emergency exit signs
- f. Emergency lighting
- g. First aid kits
- h. Emergency communication equipment
- i. Fire suppression system (where applicable) each are established by 780 CMR.

4.0 Regulatory Compliance

- 4.1 In case of facility evacuation ensure that the emergency evacuation plan is in place and clearly displayed
- 4.2 In case of fire, the incident management team shall inform facility/building occupants and visitors of the proper response.
- 4.3 After evacuation the incident management team shall account for all occupants and visitors at the designated staging areas
- 4.4 Establish emergency communications between the incident management team, the **facility manager**, and the local fire authority

5.0 Training

- 5.1 Provide training to facility management personnel in the following areas:
 - a. Preventing fires
 - b. Emergency Communications
 - c. Fire Extinguishers
 - Appropriate extinguisher types for combustible materials
 - Locations of fire extinguishers
 - d. Fire Evacuation
 - Evacuation coordinator
 - Evacuation routing
 - Evacuation assembly areas
 - e. Bi-annual fire evacuation drills

6.0 Communication



6.1 DCAMM is responsible for communicating the following:

- a. Any changes with the occupant agency to the **facility manager**
- b. DCAMM shall make available to the facility manager any MOU or MOA with the occupant agency or other involved agency
- c. Any changes in training and requirements for the Facility Manager, Incident management team, and occupant agency liaison as generated by **527 CMR 10** Pertinent advisories transmitted from the Department of Fire Services

6.2 **Facility Manager** is responsible for communicating the following:

- a. Any changes with the condition of the facility/building to DCAMM and **Incident Management team** that could affect fire safety
- b. Any changes with training requirements for the Incident management team and the occupant agency
- c. Any changes to DCAMM for Fire Risk Assessment, based on the annual review

6.3 **Incident Management team** is responsible for communication of:

- a. Any changes to the **Fire Safety plan** as a result of plan reviews
- b. The occurrence of a fire incident at the facility to DCAMM, the facility manager, and the local fire authority
- c. The status of an ongoing fire incident until the local fire authority arrives at the scene
- d. Any additional requirements to DCAMM and the facility manager as a result of the fire incident
- e. The status of the recovery operation to the occupant agency liaison, the facility manager, and DCAMM

6.4 Occupant Agency liaison is responsible for the following communication to the facility manager and Incident Management team:

- a. Any potential hazards
- b. Any problematic issues with emergency exits
- c. Any missing, damaged, or expired safety equipment

7.0 Recordskeeping

7.1 DCAMM shall review the Fire Safety Policy with the incident management team and occupant agency liaison on a regular basis.

7.2 Methods shall be defined to evaluate the fire safety policy.

7.3 The review of the policy shall be used to make necessary changes and plan improvements for the fire safety plan.



Tools and Resources

All tools and resources are also in an appendix to the complete **FMMS**.

- Massachusetts Department of Fire Services: Provides advisories, training, and public information services related to fire safety in buildings and facilities.
- Massachusetts Department of Public Safety (DPS): provides assistance with building code matters, issues permits for and performs inspections on existing and new construction. DPS inspectors must be consulted prior to performing any renovation, change of use and/or construction to ensure that the work is appropriately designed, constructed, permitted and inspected in accordance with provisions of 780 CMR (The State Building Code).
- **Massachusetts General Laws 527 CMR:** *Board of Fire Prevention Regulations*
- **Massachusetts General Laws 530 CMR:** *Fire Safety Commission Regulations*
- **Massachusetts General Laws 780 CMR:** *The State Building Code*
- National Institute of Building Sciences: *Whole Building Design Guide*
- National Fire Protection Association: **NFPA 72:** *National Fire Alarm Code*. Quincy, Massachusetts
- National Fire Protection Association: **NFPA 70:** *National Electric Code*. Quincy, Massachusetts
- National Fire Protection Association: **NFPA 101:** *Life Safety Code*. Quincy, Massachusetts
- Smith, P., et al. 2001. *Facilities Engineering and Management Handbook*.
- U.S. General Services Administration: *Standards for the Public Buildings Service*



Related Metrics

- Fire Safety of a building or facility will be measured outside of an incident on improved training, effectiveness, and plan improvements.
- Fire safety of a building or facility will be measured overall as to how people and property are protected during an actual fire.
- Fire Safety Training should be assessed to track and document evacuation times and compliance with Fire Safety Plan requirements (e.g. use of approved exitways, use of established meeting areas, etc.)
- Fire emergency response times should be tracked to assess the implementation of the Fire Safety Plan.



Title	Standard No./Revision No.	Date
Wayfinding	FMMS 17 / REV.1	March 1 st , 2016

Purpose and Scope

This Wayfinding Standard establishes baseline requirements necessary to ensure that all **occupants** and visitors are able to access programs and services and navigate within **Commonwealth facilities** as efficiently, safely, and independently as possible.

This Standard shall be used to:

- Identify, clarify, and define straightforward and intuitive routes to all destinations on the interior and exterior of **facilities**.
- Communicate navigational and instructional information effectively to all users.
- Establish consistent, recognizable, and distinctive identities for visual and non-verbal **wayfinding** strategies.
- Establish patterns that are consistent and easy to recognize for all language, visual, tactile, audible, installation and dimensional requirements.
- Provide systems and components that are flexible and adaptable to change.
- Provide a user-friendly and positive user experience.

Wayfinding strategies throughout **Commonwealth facilities** shall be consistent and coordinated with the specific program needs and regulatory requirements of the **User Agency**. Detailed implementation strategies shall be included in the related **Service Level Matrix (SLM)**.

The **SLM** shall further define the scope of the wayfinding strategies at the facility; however, wherever the health and safety of the **occupants** is at risk DCAMM and/or the **facility manager** shall override the occupant's scope.

The specific regulatory requirements of specialized facilities such as hospitals and correctional institutions are addressed in facility-specific supplements to the Facility Maintenance and Management Standards (FMMS).

Please note that wayfinding requirements apply to leased as well as Commonwealth-owned facilities.



Related Standards

The following FMMS also include references and/or requirements related to this Wayfinding Standard:

FMMS 01	Security
FMMS 02	Grounds and Landscape Maintenance
FMMS 03	Cleaning
FMMS 04	Solid Waste Management
FMMS 05	Routine Maintenance
FMMS 06	Preventive and Scheduled Maintenance
FMMS 07	Integrated Pest Management
FMMS 08	Health and Safety
FMMS 09	Emergency Management
FMMS 10	Energy Management and Sustainability
FMMS 11	Space Management
FMMS 12	OFMM Project Management
FMMS 13	Facility Information Management
FMMS 14	Procurement of Equipment, Material and Building Services
FMMS 15	Accessibility
FMMS 16	Fire Safety

Summary

This Standard addresses the following items:

- 1.0 Roles and Responsibilities
- 2.0 Implementation
- 3.0 Materials and Equipment
- 4.0 Training
- 5.0 Communication
- 6.0 Recordskeeping



Definitions

All terms defined below are also identified in bold throughout this Standard. If a term appears more than once in the same paragraph, only the first instance will be bolded. All defined terms are also included in the FMMS Glossary, which is provided as an appendix to the FMMS.

Accessibility: The ability to approach, enter, operate, participate in, and/or use safely a site, facility, work environment, or service by a person with a disability.

Accessible Website: A website that people with disabilities can perceive, understand, navigate, and interact with. Websites must comply at a minimum with the Massachusetts Enterprise Web Accessibility Standards. Most recently Web Accessibility Initiative WCAG 2.0 is the standard used to provide accessibility. See <http://www.w3.org/WAI/intro/accessibility.php>

Alternative Formats: Under Title II of the **Americans with Disabilities Act** and Section 504 of the Rehabilitation Act of 1973, federally conducted and assisted programs along with programs of state and local government are required to make their programs accessible to people with disabilities as well as provide effective communication. Effective communication means to communicate with people with disabilities as effectively as communicating with others. A legal requirement to ensure effective written communication. Alternative formats are auxiliary aids used to effectively communicate printed information to people who are unable to use standard print. Alternative formats may include Braille, large print, audio, and computer disk-

Americans with Disabilities Act (ADA): **Americans with Disabilities Act (ADA):** The federal statute enacted on July 26, 1990 and amended in 2008, that defines anti-discrimination protections ensuring the civil rights of people with disabilities, similar to the anti-discrimination protections under the Civil Rights Act of 1964 based on race and gender. The ADA broadly defines the rights of individuals with disabilities to equal opportunity in employment, access to state and local government services, private sector places of public accommodation, transportation, and other important areas of American life **Assistive Technology:** Devices used by people with disabilities, including physical, sensory, or cognitive limitations, in order to perform functions that might otherwise be difficult or impossible. Assistive technology can include mobility devices such as walkers and wheelchairs, as well as hardware, software, and peripherals that assist people to increase, maintain, or improve functional capacities.

Audio Description: Audio Description can be used to communicate visual wayfinding cues, such as views: directional identification, and information signs; elevator panels and You-Are-Here maps. Audio Description can let users know where they are, what's nearby and how to proceed in order to reach various destinations.

Braille: A system of touch reading and writing for blind persons, in which raised dots represent the letters of the alphabet. Type II contracted Braille is the only type of Braille that is compliant with ADA 2010 Standards for dimensional requirements

DCAMM ADA Coordinator: This designated individual advises DCAMM's Commissioner on promoting access and equal opportunity for people with disabilities in programs, activities and services of state government, including employment, and is responsible for overseeing compliance-related actions and assisting with disability-based discrimination complaints at DCAMM and its facilities.



Commonwealth facilities: The buildings for which DCAMM has assumed maintenance and management responsibilities. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as commonwealth owned.

Facility Manager: The person responsible for the maintenance and operation of a facility, which includes oversight of all internal and external service providers.

OFMM Director of Operations and Maintenance: Responsible for managing user agency customer facilities needs.

Limited English Proficiency (LEP): A Limited English Proficient (“LEP”) person is someone who is not able to speak, read, write or understand the English language at a level that allows him/her to interact effectively with Agency staff. Consistent with Federal Executive Order 13166 and ANF Administrative Bulletin #16, state and local government agencies and recipients of federal funds must take reasonable steps to ensure meaningful access to their programs and activities by LEP persons.

Occupants: Individuals that occupy space either because they are employed by the User Agency or by a Licensee of the User Agency.

Pictogram: A symbol that represents an object or concept, e.g. a picture of an envelope used to represent an e-mail message. Pictograms are common in everyday life, e.g., signs in public places or roads, whereas the term “icon” is specific to interfaces on computers or other electronic devices.

Tactile Signage: Incorporates raised text, Braille, or symbols to enable touch reading by people who are blind, and touch enhancement of visual perception for people who are vision impaired. Tactile elements cannot be sharp to the touch and needs to be located within reach ranges.

Signage: Signage is the visual, tactile, and verbal communication component of wayfinding. Where a building layout is not obvious and intuitive, signage is required to communicate what the architecture cannot. Too much or too little signage causes confusion. For effective wayfinding, signage must provide the correct information at the correct time.

Service Level Matrix (SLM): A document that details each of the specific facility maintenance and management services that DCAMM OFMM will provide to a **User Agency** of a **Commonwealth facility** and any that may be retained by the User Agency or **Occupant**. This document is negotiated between OFMM and the User Agency or Occupant and forms part of the Facilities Management Agreement, Occupancy Agreement, or other similar agreement between DCAMM OFMM-and an Occupant.

User Agency: A state agency that has the legal right to use and occupy all or a portion of any building, facility, improvement, or property owned by the Commonwealth for its agency mission and purposes. A User Agency may have the exclusive use of an entire building, or in a multi-occupancy facility, it may have the exclusive use of part of the building and the right to use common areas with other users. A User Agency is also an “Occupant” as defined herein.

Wayfinding: A dynamic strategy that allows people to find where to go and how to get there and back. Wayfinding is not a synonym for signage. Along with a variety of exterior and interior



environmental elements and features such as paths, routes, landmarks, canopies, thresholds, sightlines, finishes, color, acoustics, lighting, maps, electronic devices, space naming and numbering and websites, signage is used as a tool for clarifying and communicating information further.

Accurate and timely information must be provided when and where a user needs it. Placement of environmental cues and selection are critical to maximizing the communication. Often this cannot be achieved using only one method; redundancy and overlap of information is helpful but only if used consistently throughout a facility.

Requirements

1.0 Roles and Responsibilities

- 1.1 The **OFMM Director of Operations and Maintenance** or an appointed designee, shall ensure implementation of the Wayfinding Standard and its requirements throughout **Commonwealth facilities**.
- 1.2 The **OFMM Director of Operations and Maintenance** and client agency representative (where applicable) shall oversee the completion of all measures under this Standard and shall determine the individuals responsible for ensuring accessibility at the facility. These individuals include, but are not limited to the following:
 - a. **Facility Manager**
 - b. **Facility Staff**

2.0 DCAMM ADA Coordinator

- a. Contracted **Service Providers**
- 2.2 DCAMM shall:
 - a. Develop interior and exterior **wayfinding** standards based on pertinent codes, and good design practices for each type of facility that are common across the Commonwealth's portfolio.
 - b. Provide the **facility manager** with the technical assistance necessary to ensure that appropriate **wayfinding** strategies are in place at the facility and are consistent with the established standards.
- 2.3 The **Facility Manager** shall:
 - a. Work with DCAMM to implement and maintain interior and exterior **wayfinding** strategies throughout the facility that are consistent with DCAMM standards, and allow people to find the location of their intended destination (e.g., specific office, location to receive services, accessible entrances and restrooms, etc.), and to determine how to get there and back.
 - b. Work with the **User Agency** to identify their specific **wayfinding** and signage needs, and coordinate these needs with the wayfinding strategies in place at the



facility.

- c. Establish a **Service Level Matrix (SLM)** with the User Agency.
- d. Work with DCAMM to procure and manage service contracts with **service providers** to identify appropriate wayfinding strategies, design and install **wayfinding** measures in compliance with state and federal accessibility requirements.
- e. Conduct periodic inspections of **wayfinding** measures in place at the facility to ensure information is up-to-date and sufficiently informative, and identify maintenance and cleaning needs.

3.0 Implementation

- 3.1 Ensure exterior and interior **wayfinding** measures and signage are in place and consistent with DCAMM standards and all applicable regulations and statutory requirements.
- 3.2 Provide alternative multilingual information at the facility in accordance with **Limited English Proficiency (LEP)**, as applicable depending on the demographics of the **occupants** and visitors.
- 3.3 Exterior wayfinding measures and signage at the facility, shall include, but are not limited to the following:
 - a. Exterior **signage** shall be legible from a distance that provides enough advanced warning so that a pedestrian or a driver can make a timely directional decision and shall indicate routes to **occupant** and visitor parking, service docks, drop-off areas, and facility entrance(s).
 - b. Exterior building identification **signage** shall have full address.
 - c. **Accessibility signage** shall comply with all applicable regulations and statutory requirements (see FMMS 15 Accessibility for additional detail) and shall identify accessible parking and accessible routes to the building and site accessible entrances and restrooms, if not all are accessible.
 - d. **Signage** on multi-building sites shall indicate walkways between parking and the buildings, between different buildings, and at walkway intersections.
 - e. Routes shall have clear, contrasting walkway edges and sufficient site lighting to aid in **wayfinding** and safety along routes, ramps, and steps.
- 3.4 Interior **wayfinding** strategies and **signage** in entrances, reception areas, and lobbies at the facility, shall include, but are not limited to the following:
 - a. The entrance shall be easy to describe and distinctive and the name of the building shall be legible.
 - b. **Signage** shall comply with the **Americans with Disabilities Act (ADA) and MAAB 521 CCMR**.
 - c. Reception/information desks shall have accessible counters for front approach.



- d. Reception areas with glass security screens shall have measures in place to prevent glare and effective communication,
 - e. Facilities that have a staffed information desk in the lobby shall ensure that the staff are capable of providing directions and are present during business hours.
 - f. Building directories shall list all agencies, public meeting rooms, public restrooms, and other public amenities.
 - g. Optimize sightlines to ensure **signage** and destination elements are discernable upon entering and navigating through the building.
- 3.5 Interior wayfinding strategies and signage for paths through the facility, shall include, but are not limited to the following:
- a. Directional **signage** for **User Agencies**, restrooms, and elevators at key path intersections.
 - b. Clear information if elevators serve only some portions of the facility.
 - c. Lighting with sufficient quantity and quality to easily read signs and minimize glare.
- 3.6 Install multiple types of signage at the facility, including, but not limited to the following:
- a. Directories and “You-Are-Here” maps shall be at key decision “hotspots” such as main entrance lobbies and elevator lobbies to provide clarity and ease of wayfinding. Directories and “You-Are-Here” maps shall show a simplified building plan (key plan), identify department names, staff names (if appropriate), room numbers, floor level and location of essential building facilities (e.g., restrooms, elevators) and be oriented correctly for each location
 - b. Directional signs shall be at major decision points such as areas where there are two or more routes or paths. For clarity and ease of **wayfinding**, directional signs shall show a list of department names and/or room numbers, floor level, and essential building facilities, and accessible facilities if not all are accessible. Identification signs (a.k.a. designation signs) shall meet 2010 ADA Standards and MAAB requirements **for tactile signage**, wherever there is a conflict the requirement that provides greater accessibility will be used. This type of signage labels every permanent room and space in the facility that will not change over time and includes restrooms, stairs, room numbers, and destination spaces such as classrooms, courtrooms, assembly areas, and public transaction areas. Identification signs shall include room number, **pictogram** if appropriate (e.g., restroom), **Braille** and **tactile** lettering, with interchangeable slots for paper inserts with staff names or office names if applicable.
 - c. Informational signs shall meet 2010 ADA Standards and MAAB requirements for visual signage, and wherever there is a conflict, the **requirement** that provides greater accessibility will be used. Install the signs where occupants need information for instructional or safety reasons (e.g., “No smoking signs”, “take a ticket and wait”, paying instructions for parking). These signs shall be clear and concise with **plain language** and short sentences at eighth grade reading level.
 - d. A sign shall be posted at the primary accessible entrance with the contact



information of **DCAMM ADA Coordinator**.

- e. Regulatory and Safety signs shall identify all fire and facility safety elements. The **facility manager** shall coordinate signage specifications and locations with Mechanical and Fire Protection Engineers, the Building Inspector, and the Fire Marshall. Install Regulatory and Safety signs that are distinct and easily distinguishable from any other signage system in elevators, interior and exterior stairwells, emergency egress routes and exits - especially where accessible routes differ from the general public, and areas where warnings are required. For clarity and ease of delivering the message as quickly as possible use **pictograms, plain language**, visual tactile and audible warnings, such as luminescent treads and hand rail markers on stairs.
- f. Overhead signage may be used in areas where it is not feasible to add a wall sign, due to location, building material or sightlines however, placement must not result in it becoming a protruding object as defined in the ADA or 521 CMR.

3.7 Maintain an **accessible website** for the facility that allows **occupants** and visitors to familiarize themselves with the facility prior to arrival. The website shall contain current and accurate information, including, but not limited to the following:

- a. Facility name and address (and photo of facility).
- b. Maps, site plan, and floor plans, if appropriate.
- c. Downloadable audio navigation/wayfinding information (e.g., digital/GPS maps).
- d. Regular hours of operation for facility.
- e. Special scheduling information or calendar for **User Agency** specific events.
- f. List of **User Agencies**, programs, services, and public amenities (e.g., cafeteria, exercise facility, daycare).
- g. Accessibility for persons with disabilities (e.g., parking, routes to buildings, building entrances, and closest public transit stop with accessibility status).
- h. Notifications of temporary conditions (e.g., changes in routes, elevator repairs, facility closures due to weather).

4.0 Materials and Equipment

4.1 Implement policies and procedures for ordering and procuring **signage** and **wayfinding** elements, including, but not limited to the following:

- a. Order ‘blanks’ for temporary signage.
- b. Standardize materials, language, space, and level names and terms.
- c. Remove old signage or replace with correct information when installing new signage.

4.2 Install and maintain **wayfinding** technologies when available and appropriate for the facility type. Wayfinding technologies include, but are not limited to the following:



- a. Website
- b. Building information kiosks at entrances that are accessible and include audible or **alternative format** information.
- c. Audio navigational devices, using Indoor Positioning System (IPS).
- d. Electronic sign boards and schedule announcements.
- e. Interactive digital media.

5.0 Training

- 5.1 Implement an ongoing training program for all facility maintenance staff, authorized **signage** coordinators and contracted service providers to ensure compliance with all **wayfinding** related requirements, policies, procedures, processes, and products.
- 5.2 DCAMM shall approve and oversee training content and requirements.
- 5.3 Ensure staff at the information desk in the facility lobby receive training on providing directions to **occupants** and visitors not familiar with the location of all spaces in the facility and/or accessible routes and spaces.
- 5.4 Ensure facility staff receives training on the policies and procedures for hanging signage in the facility.

6.0 Communication

- 6.1 Inform **User Agency liaisons** of all **wayfinding** strategies, and signage policies and procedures in the facility.
- 6.2 Ensure User Agencies alert the **facility manager** of all changes and updates to facility signage specific to the space(s) they occupy within the facility.
- 6.3 Provide policies and procedures for **User Agencies** on posting temporary signage and the use of notice boards.
- 6.4 Provide notice boards in visible places to consolidate temporary notices.

7.0 Recordskeeping

- 7.1 Conduct an annual building assessment of all wayfinding elements to ensure effectiveness coordinating information across:
 - a. Website
 - b. Site Circulation
 - c. Buildings
- 7.2 Review building-wide signage for continued accuracy of information and review informal signs to understand gaps in wayfinding needs.
- 7.3 Engage user/experts to review continuing effectiveness and opportunity for improvements for all building occupants.
- 7.4 Implement a reporting process that is relatively easy for contracted service providers to



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comply with while simultaneously addressing the wayfinding needs of the facility, **occupants**, and visitors.

- 7.5 Contracted service providers are responsible for identifying and meeting all recordskeeping requirements in place at the time they enter into a contract with the Commonwealth.
- 7.6 Track all orders of new signage as a measure of wayfinding effectiveness.
- 7.7 Track training for all staff and contractors involved in providing wayfinding design services because it will allow for the understanding of any gaps in the training program, or lapses in staff attendance.

Tools and Resources

All tools and resources related to the Wayfinding Standard are included in both an appendix to the complete FMMS and in the service delivery agreement for the Standard.

- Commonwealth of Massachusetts: *Administrative Bulletin 19: "Enhancing Coordination and Integration to Promote Accessibility at State Facilities or to State Programs, Services, and Activities."*
- Commonwealth of Massachusetts General Laws 521 CMR: *Architectural Access Board Rules and Regulations.*
- U.S. Department of Justice. American With Disabilities Act (ADA): *Title II Part A*
- U.S. Department of Justice. Americans with Disabilities Act (ADA): 2010 Standards for Accessible Design

Related Metrics

- All wayfinding elements shall be tested by a diverse group of user experts having different physical, sensory, cognitive abilities and of different cultures this will include but is not limited to website, routes, and sensory features such as tactile or auditory elements.
- Conduct an annual building assessment of all wayfinding elements to ensure effectiveness coordinating information across the following:
 - Site Circulation
 - Buildings
 - Website



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Appendix A: Tools and Resources

The following tables provide a list of the tools and resources referenced and/or used in the preparation of the FMMS Standards.

FMMS 1: Security

- Cotts, Roper, & Payant. “*The Facility Management Handbook.*” 3rd Edition
- Department of Homeland Security. *Interagency Security Committee’s Standard: Facility Security Level Determinations*, March 2008 1st Edition
- Interagency Security Committee Standard *Physical Security Criteria for Federal Facilities*, April 2010 1st Edition
- Interagency Security Committee Report: *Design-Basis Threat*, March 2013 7th Edition

FMMS 2: Grounds and Landscape Maintenance

- APPA. Operational Guidelines for Educational Facilities: Custodial. Third Edition.
- *Chapter 123 of the Acts of 2006* directs the State Purchasing Agent to grant a preference to products of agriculture grown or produced using locally grown products. These products include any agricultural, aquacultural, floricultural or horticultural commodities, the growing and harvesting of forest products, the raising of livestock, including horses, raising of domesticated animals, bees, fur-bearing animals and any forestry or lumbering operations.
- Commonwealth of Massachusetts Executive Order 515 “*Establishing an Environmental Purchasing Policy*”
- Green Seal’s Environmental Standard for Commercial Cleaning Services (GS-42): greenseal.org/GreenBusiness/Standards.aspx
- GSA Solicitation GS-09P-10-KS-0118, Custodial and Related Services, issued July 9, 2010
- International Sanitary Supply Association (ISSA) *Cleaning Industry Management Standard (CIMS) Standard*
- International Sanitary Supply Association (ISSA) *Cleaning Industry Management Standard for Green Buildings (CIMS-GB)*: issa.com/
- International Society of Arboriculture: <http://www.isa-arbor.com/home.aspx>
- Leadership in Energy and Environmental Design (LEED), *Existing Buildings: Operations and Maintenance Rating System v2009*.
- Leadership in Energy and Environmental Design (LEED), *Existing Buildings: Operations and Maintenance Rating System v4 Draft (Beta) Standards*. 0213.



Appendix A: Tools and Resources

FMMS 2: Grounds and Landscape Maintenance (continued)

- Massachusetts Certified Arborist Program (MCA): <http://www.massarbor.org>
- Massachusetts Nursery and Landscape Association <http://www.mnla.com/>
- *Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools*. Operational Services Division: Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Massachusetts Water Conservation Standards, Massachusetts Water Resources Commission:
<http://www.mass.gov/eea/docs/dcr/watersupply/intbasin/waterconservationstandards.pdf>
- Operational Services Division (OSD) FAC59: *Green Cleaning Products, Programs, Equipment and Supplies Pricing for all Awarded Statewide Contract Vendors*
- Operational Services Division (OSD) FAC67: *Janitorial Services, Environmentally Preferable Statewide Contract*
- Operational Services Division (OSD) FAC71: *Lawns and Grounds, Equipment, Parts and Services Statewide Contract*
- Operational Services Division (OSD) FAC77: *Landscaping Services, Tree Trimming, Catch Basin Cleaning, Snow Removal and Related Services*
- Operational Services Division (OSD) FAC79: *Landscaping and Green Roof Products, Playground Equipment, Site Amenities and Related Products*
- Operational Services Division (OSD) *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts, Operational Services Division: Massachusetts Environmentally Preferable Products (EPP) Procurement Program

FMMS 3 Cleaning

- International Sanitary Supply Association. CIMS: Cleaning Industry Management Standard
- Commonwealth of Massachusetts Executive Order 511: Employee Safety *“Establishing a Massachusetts Health and Safety Advisory Committee*
- Operational Services Division (OSD) FAC 59: Statewide contract for Green Cleaning Products
- Operational Services Division (OSD) FAC81: Janitorial Services, Environmentally Preferable



FMMS 4 Solid Waste Management

- Leadership in Energy & Environmental Design (LEED), *Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards*. 2013.
- Leadership in Energy & Environmental Design (LEED), *Existing Buildings: Operations & Maintenance Rating System v2009*.
- Massachusetts Executive Order No. 484: *Leading by Example – Clean Energy and Efficient Buildings*, dated April 18, 2007.
- Massachusetts Executive Order No. 515: *Establishing an Environmental Purchasing Policy*, dated October 27, 2009.
- Massachusetts Solid Waste Master Plan
- Massachusetts Toxics Use Reduction Reform Act of 2006
- Massachusetts Zero Mercury Strategy
- MA Department of Environmental Protection (DEP): *Waste Wise Program Municipal Compliance Fact Sheet: Waste Bans* (<http://www.mass.gov/eea/agencies/massdep/recycle/regulations/waste-bans.html>)
- Operational Services Division (OSD) FAC33: *How to Use the Solid Waste and Recycling Services Statewide Contract*
- Operational Services Division (OSD) FAC82: *Hazardous/Universal, Medical, and Electronic Waste Disposal and Emergency Response*.
- Recycling Works MA. [RecyclingWorks](#)



FMMS 5 Routine Maintenance

- ASHRAE Guidelines 4-2008 Preparation of Operating and Maintenance Documentation for Building Systems
- *CAMIS Standard Operating Procedures*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/camis/standard-operating-proc/>
- Commonwealth of Massachusetts, Standards for Building Maintenance: *Status Chart and Guidance for Indicator Levels*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/docs/dcam/ofm/maint-st-letter-2010-2011.pdf>
- Division of Capital Asset Management and Maintenance, Office of Facilities Management and Maintenance. *Facilities O&M Manual for Beginners: "What you need to think about when maintaining your facilities!"* Accessed via: <http://www.mass.gov/anf/docs/dcam/mafma/manuals/dcam-fm-manual-11-7-6.pdf>
- Hunt, Glenn. *Comprehensive Facility Operation & Maintenance Manual*. Peripheral Systems, Inc. Last updated: 10-04-2013. Accessed via Whole Building Design Guide (WBDG) http://www.wbdg.org/om/om_manual.php
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4. (released November 2013)
- Massachusetts Statewide Contracts for Healthier Schools: *How to Use Massachusetts Contracts for Pollution Prevention in Schools*. Operational Services Division: Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Operational Services Division (OSD): *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts, Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Sebesta Blomberg and Associates, Inc., *Facility Operation & Maintenance Plan, UMASS Amherst - New Life Science Building*. Project No. 700796.00. August 2, 2013.



FMMS 6 Preventive and Scheduled Maintenance

- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) *Standard 62.1: Ventilation for Acceptable Indoor Air Quality*.
- ASHRAE Guidelines 4-2008 *Preparation of Operating and Maintenance Documentation for Building Systems*
- CAMIS Standard Operating Procedures. Developed by DCAMM and accessed via <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/camis/standard-operating-proc/>
- Commonwealth of Massachusetts, *Standards for Building Maintenance: Status Chart and Guidance for Indicator Levels*. Developed by DCAMM and accessed via <http://www.mass.gov/anf/docs/dcam/ofm/maint-st-letter-2010-2011.pdf>
- Commonwealth of Massachusetts: *Human Resources Division Class Specification Maintenance Worker Series*. Accessed via <http://www.mass.edu/shared/documents/classificationspecs/specspers/Maintenance%20Worker.doc>
- Division of Capital Asset Management and Maintenance, Office of Facilities Maintenance. *Facilities O&M Manual for Beginners: "What you need to think about when maintaining your facilities!"* Accessed via: <http://www.mass.gov/anf/docs/dcam/mafma/manuals/dcam-fm-manual-11-7-6.pdf>
- Division of Capital Asset Management & Maintenance *Preventive Maintenance Guidelines for Roofs*. Accessed via <http://www.mass.gov/anf/docs/dcam/mafma/tutorials/mafma-tutorial-roof-maint.pdf>
- Hunt, Glenn. *Comprehensive Facility Operation & Maintenance Manual*. Peripheral Systems, Inc. Last updated: 10-04-2013. Accessed via Whole Building Design Guide (WBDG) http://www.wbdg.org/om/om_manual.php
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Operational Services Division (OSD). *Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools*. Massachusetts Environmentally Preferable Products (EPP) Procurement Program



Appendix A: Tools and Resources

FMMS 6 Preventive and Scheduled Maintenance (continued)

- Operational Services Division (OSD) *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Sebesta Blomberg and Associates, Inc. *Facility Operation & Maintenance Plan*, UMASS Amherst - New Life Science Building. Project No. 700796.00. August 2, 2013.
- State of Minnesota Office of the Legislative Auditor. *Preventive Maintenance for Local Government Buildings*. <http://www.mass.gov/anf/docs/dcam/mafma/manuals/o-andm-pm-for-local-govt-buildings.pdf>
- U.S. EPA "*Building Air Quality: A Guide for Building Owners and Facility Managers*". Accessed via http://www.epa.gov/iaq/largebldgs/baq_page.htm

FMMS 7 Integrated Pest Management

- Environmental Protection Agency (EPA). *Integrated Pest Management in Buildings*. This reference guide defines IPM, describes proper IPM implementation in buildings, and outlines the roles and responsibilities necessary for success. http://www.epa.gov/pesp/publications/ipm/ipm_in_buildings.pdf
- The Federal Insecticide, Fungicide and Rodenticide Act
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Massachusetts General Law (ND). 333 CMR "*MGL 132B Massachusetts Pesticide Control Act*". Commonwealth of Massachusetts
- Massachusetts Executive Order No. 403, Integrated Pest Management for Massachusetts State Agencies
- MASS.Gov. (2003) "The Act Protecting Children and Families from Harmful Pesticides of 2000"
- Massachusetts Department of Fish and Wildlife (MassWildlife) Regulations
- Massachusetts Department of Agricultural Resources (DAR).



Appendix A: Tools and Resources

FMMS 7 Integrated Pest Management (continued)

- Massachusetts Executive Order 515 “*Establishing an Environmental Purchasing Policy*”
- Operational Services Division (OSD) FAC74: *Integrated Pest Management (IPM) Statewide Contract*
- Operational Services Division (OSD) *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Operational Services Division (OSD). *Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools*. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Radcliffe, E.B., Hutchison, W. D., & R. E. Cancelado [eds.], *Radcliffe's IPM World Textbook*, URL: <http://ipmworld.umn.edu>, University of Minnesota, St. Paul, MN.
- San Francisco's Department of the Environment (SF Environment) explains the listing criteria and process and has an updated 2007 reduced-risk pesticide list for screened pesticide active ingredients. <http://www.sfenvironment.org/ipmchecklist>

FMMS 8 Health and Safety

- American Society Testing Materials International, *Standard Practice for Visual Inspection of Asbestos Abatement Projects*, West Conshohocken, PA, ASTM E1368
- American Society Testing Materials International, *Standard Practice for Maintenance, Renovation, and Repair of Installed Asbestos Cement Products*, West Conshohocken, PA, ASTM E2394
- Massachusetts Department of Public Health. *Indoor Air Quality Program*. <http://mass.gov/dph/iaq>
- National Institute of Occupational Safety and Health, US EPA, June 1998, *Building Air Quality Action Plan*, DHHS Publication No. 98-123
- US Environmental Protection Agency, *An Introduction to Indoor Air Quality (IAQ) – Improving Indoor Air Quality*, US EPA, Washington, DC, <http://www.epa.gov/iaq/is-imprv.html>



Appendix A: Tools and Resources

FMMS 8 Health and Safety (continued)

- US Environmental Protection Agency, 2002, *IAQ (Indoor Air Quality) Building Education and Assessment Model (I-BEAM)*, US EPA, Washington, DC, Only available on-line
- US Environmental Protection Agency, October 1997, *An Office Building Occupant's Guide to Indoor Air Quality*, US EPA, Washington, DC, EPA-402-K-97-003
- US Government Printing Office, December 1991, *Building Air Quality, A Guide for Building Owners and Facility Managers*, SSOP, Washington DC, ISBN 0-16-035919-8
- US Occupational Safety & Health Administration, February 1979, *Code of Federal Regulations for Construction*, OSHA, Washington DC, 29 CFR Part 1926 Subpart D

FMMS 9 Emergency Management

- Bringing the Plan to Life, Implementing the Hazard Mitigation Plan, August 2003, FEMA Publication FEMA 386-4;
- Commonwealth of Massachusetts Comprehensive Emergency Management Plan (CEMP) dated July 2013
- Developing the Mitigation Plan, Identifying Mitigation Actions and Implementing Strategies, April 2003, FEMA Publication FEMA 386-3;
- Getting Started, Building Support for Mitigation Planning, September 2002, FEMA, FEMA Publication FEMA 386-1;
- Handbook for Rapid Visual Screening of Buildings to Evaluate Terrorism Risks, March 2009, FEMA Publication FEMA 455;
- Incremental Protection for Existing Commercial Buildings from Terrorist Attack, April 2008, FEMA Publication FEMA 459;
- Integrating Historic Property and Cultural Resource Considerations Into Mitigation Planning, State and Local Mitigation Planning How-To Guide, May 2005, FEMA Publication FEMA 386-6;
- Integrating Human-Caused Hazards Into Mitigation Planning, September 2002, FEMA Publication FEMA 386-7
- Multi-Jurisdictional Mitigation Planning, State and Local Mitigation Planning, August 2006, FEMA Publication FEMA 386-8;
- National Fire Protection Association 1600, Standard on Disaster/Emergency Management and Business Continuity Programs. NFPA 1600



Appendix A: Tools and Resources

FMMS 9 Emergency Management (continued)

- National Incident Management System, U.S. Department of Homeland Security (www.fema.gov/nims)
- National Incident Management System, December 2008, U.S. Department of Homeland Security, FEMA Publication P-501;
- National Response Framework, January 2008, Homeland Security, FEMA Publication P-682;
- Reference Manual to Mitigation Potential Terrorist Attacks Against Buildings, December 2003, FEMA Publication FEMA 426;
- Risk Assessment, A How-to Guide to Mitigate Potential Terrorist Attacks Against Buildings, January 2005, FEMA Publication FEMA 452;
- Threat and Hazard Identification and Risk Assessment Guide, Comprehensive Preparedness Guide (CPG) 201, Second Edition, August 2013;
- Understanding Your Risks, Identifying Hazards and Estimating Losses, August 2001, FEMA, FEMA Publication FEMA 386-2;
- Using Benefit-Cost Review in Mitigation Planning, State and Local Mitigation Planning, May 2007, FEMA Publication FEMA 386-5;
- Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects, State and Local Mitigation Planning How-to Guide, August 2008, FEMA Publication FEMA 386-9;

FMMS 10 Energy Management and Sustainability

- Commonwealth of Massachusetts Leading by Example (LBE) Program: <http://www.mass.gov/eea/leadingbyexample>
- DCAMM Energy and Sustainability: <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/energy-and-sustainability/>
- DCAMM Energy and Sustainability Services. <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/energy-and-sustainability/other-services/>
- DCAMM Life Cycle Cost Analysis Requirements: <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and-maintenance/energy-and-sustainability/other-services/life-cycle-cost-analysis.html>
- Demand Response and the Forward Capacity Market (FCM): <http://www.mass.gov/anf/property-mgmt-and-construction/facilities-mgmt-and->



Appendix A: Tools and Resources

[maintenance/energy-and-sustainability/other-services/demand-response-and-forward-capacity-market-fcm.html](https://www.mass.gov/info-details/maintenance-energy-and-sustainability/other-services/demand-response-and-forward-capacity-market-fcm.html)

- The Federal Energy Management Program (FEMP):
- International Organization for Standards. ISO 50001 International Energy Management System Standard
- Leadership in Energy and Environmental Design (LEED), Existing Buildings: Operations and Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Leadership in Energy and Environmental Design (LEED), Existing Buildings: Operations and Maintenance Rating System v2009
- Massachusetts Executive Order 515, Establishing an Environmental Purchasing Policy
- Operational Services Division (OSD) FAC56: Request for Response (RFR) , Demand Response Services

FMMS 11 Space Management

- ANSI/BOMA Z65.1-2010: Standard Methods of Measurement (Office Space)
- ANSI/BOMA Z65.3-2009: Standard Methods of Measurement (Voids)
- Division of Capital Asset Management and Maintenance (DCAMM) Leasing: Current Area Calculation Methodology.
- Division of Capital Asset Management and Maintenance (DCAMM): Space Office Planning Standards
- National Business Space Assignment Policy GSA Public Buildings Service Office of Real Property Asset Management. Feb 13



FMMS 12 OFMM Project Management

- Division of Capital Asset Management and Maintenance (DCAMM): “*CAD Standards*”
- Division of Capital Asset Management and Maintenance (DCAMM): “*Designers Procedures Manual*”
- Division of Capital Asset Management and Maintenance (DCAMM): “Guidelines for Procurement of Building Maintenance and Repair Projects Costing up to \$100,000”
- Division of Capital Asset Management and Maintenance (DCAMM): “Guidelines for the Preparation of Studies for Building Projects”
- Division of Capital Asset Management and Maintenance (DCAMM): “*CAD Standards*”
- Division of Capital Asset Management and Maintenance (DCAMM): “*Designers Procedures Manual*”
- Division of Capital Asset Management and Maintenance (DCAMM): “Guidelines for Procurement of Building Maintenance and Repair Projects Costing up to \$100,000”
- Division of Capital Asset Management and Maintenance (DCAMM): “Guidelines for the Preparation of Studies for Building Projects”
- Division of Capital Asset Management and Maintenance (DCAMM): “*Standard Specifications for Design-Bid-Build Projects*”
- Massachusetts General Laws Chapter 7C: Capital Asset Management and Maintenance
- Massachusetts General Laws Chapter 30: General Provisions Relative to State Departments, Commissions, Officers and Employees. *Section 39M: Contracts for Construction and Materials; Manner of Awarding*
- Massachusetts General Laws Chapter 149 Labor and Industries, Section 44A: “Definitions; Competitive Bids; Award; Bonds; Extreme Emergency Situations; Records Contracts not Subjected to Competitive Bid Process”



FMMS 13 Facility Information Management

- Cholakis, Peter (2011), White Paper - *BIM for FM/BIMF: Change on the Horizon*, Colorado Springs, CO: 4Clicks Solutions
- Commonwealth of Massachusetts Executive Office for Administration and Finance, "Building Information modeling (BIM) List of Design and Preconstruction Services", September 16, 2013
- Division of Capital Asset Management and Maintenance (DCAMM): *CAD Standards*, February 2, 2013
- Eastman, Chuck, Teicholz, Paul, Sacks, Rafael, Listom, Kathleen (2008): *BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors*, Hoboken, NJ: John Wiley & Sons, ISBN-13: 978-0-470-18528-5
- Hardin, Brad (2009), *BIM and Construction Management: Proven Tools, Methods, and Workflows*, Indianapolis, IN: Sybex, ISBN-13: 978-0-470-40235-1
- Hunt, Glenn. *Comprehensive Facility Operation & Maintenance Manual*. Peripheral Systems Inc. Whole Building Design Guide
- Jernigan, Finith (2007), *BIG BIM little bim: The Practical Approach to Building Information Modeling*, Washington, DC: 4Site Press, ISBN-13: 978-0-9795699-0-6



Appendix A: Tools and Resources

FMMS 14 Procurement of Equipment, Material, and Building Services

- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v4 Draft (Beta) Standards. 2013.
- Leadership in Energy & Environmental Design (LEED), Existing Buildings: Operations & Maintenance Rating System v2009.
- Massachusetts Office of the Comptroller: *Expenditure Classification Handbook*
- Operational Services Division (OSD): *Procurement Information Center*
<http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/conduct-a-procurement/procurement-information-center.html>
- Operational Services Division (OSD): *Statutory Authority, Regulations and Executive Orders*
<http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/osd/osd-statutory-authority-regulations-and-executive-orders.html>
- Operational Services Division (OSD): "Quick Reference Chart: Procurement of Goods and Services under 801 CMR 21.00 Accessed via <http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/conduct-a-procurement/procurement-information-center.html>
- Operational Services Division: (OSD): *Recycled and Environmentally Preferable Products Guide to Massachusetts Statewide Contracts*. Updated September 2012. Massachusetts Statewide Contracts. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- Operational Services Division: (OSD): Massachusetts Statewide Contracts for Healthier Schools: How to Use Massachusetts Contracts for Pollution Prevention in Schools. Massachusetts Environmentally Preferable Products (EPP) Procurement Program
- The most recent Policy Updates related to Commonwealth procurement policy are accessed here: <http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/conduct-a-procurement/osd-policies-regs/osd-policy.html>



Appendix A: Tools and Resources

FMMS 15 Accessibility

- Commonwealth of Massachusetts 521 CMR “Architectural Access Board Rules and Regulations”
- U.S. Department of Justice. American with Disabilities Act (ADA): *Title II Part A* (2010).
- U.S. Department of Justice. American with Disabilities Act (ADA): *ADA Standards for Accessible Design* (2010).
- Massachusetts Administrative Bulletin 19, “Enhancing Coordination and Integration to Promote Accessibility at State Facilities or to State Programs, Services and Activities”



FMMS 16 Fire Safety

- Massachusetts Department of Fire Services: Provides advisories, training, and public information services related to fire safety in buildings and facilities.
- Massachusetts Department of Public Safety (DPS): provides assistance with building code matters, issues permits for and performs inspections on existing and new construction. DPS inspectors must be consulted prior to performing any renovation, change of use and/or construction to ensure that the work is appropriately designed, constructed, permitted and inspected in accordance with provisions of 780 CMR (The State Building Code).
- Massachusetts General Laws 527 CMR: *Board of Fire Prevention Regulations*
- Massachusetts General Laws 530 CMR: *Fire Safety Commission Regulations*
- Massachusetts General Laws 780 CMR: *The State Building Code*
- National Institute of Building Sciences: *Whole Building Design Guide*
- National Fire Protection Association: *NFPA 72: National Fire Alarm Code*. Quincy, Massachusetts
- National Fire Protection Association: *NFPA 70: National Electric Code*. Quincy, Massachusetts
- National Fire Protection Association: *NFPA 101: Life Safety Code*. Quincy, Massachusetts
- Smith, P., et al. 2001. *Facilities Engineering and Management Handbook*.
- U.S. General Services Administration: *Standards for the Public Buildings Service*



Appendix A: Tools and Resources

FMMS 17 Wayfinding

- Commonwealth of Massachusetts: *Administrative Bulletin 19: “Enhancing Coordination and Integration to Promote Accessibility at State Facilities or to State Programs, Services, and Activities.”*
- Commonwealth of Massachusetts General Laws 521 CMR: *Architectural Access Board Rules and Regulations.*
- U.S. Department of Justice. American With Disabilities Act (ADA): *Title II Part A*
- U.S. Department of Justice. Americans with Disabilities Act (ADA): *2010 Standards for Accessible Design*



Appendix B: Definitions

Term	Definition	FMMS
2010 ADA Standards for Accessible Design	Guidelines issued by the U.S. Access Board establishing minimum requirements for new construction and alteration of state and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities. This Standard, which became effective March 15, 2011, supersedes the ADAAG, the American with Disabilities Architectural Guidelines, issued in 1991.	FMMS 15
521 CMR “Architectural Access Board Rules and Regulations”:	The regulations promulgated by the Architectural Access Board pursuant to M.G.L. c. 22, s. 13(a), which is the statute of the Commonwealth that requires public buildings and facilities to be accessible to, functional for, and safe for use by persons with disabilities. It is the intent of 521 CMR to provide persons with disabilities full, free and safe use of all buildings and facilities so that all such persons may have the educational, living and recreational opportunities necessary to be as self-sufficient as possible and to assume full responsibilities as citizens.	the FMMS 15



Appendix B: Definitions

Term	Definition	FMMS
<p><i>780 CMR: Massachusetts State Building Code</i></p>	<p>State Building Code (780 CMR <i>Massachusetts State Building Code</i>) is a set of rules that specify the minimum acceptable level of safety for constructed objects such as buildings and non-building structures. The main purpose of building codes are to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. A building code's principal goal is structural integrity; it is also coordinated with the Life Safety Code, which is adopted as regulation.</p>	<p>FMMS 16</p>
<p>Accessibility</p>	<p>The ability to approach, enter, operate, participate in, and/or use safely a site, facility, work environment, or service, by a person with a disability</p>	<p>FMMS 15 FMMS 17</p>
<p>Accessibility Audit</p>	<p>A comprehensive assessment of the non-compliant accessibility elements in a facility, conducted by DCAMM's Accessibility Consultants or others using a systematic checklist and reporting format approved by DCAMM.</p>	<p>FMMS 15</p>
<p>Accessible Means of Egress</p>	<p>A continuous and unobstructed way of egress travel from any point in a building or facility that provides an accessible route to an area of refuge or area of rescue assistance, a horizontal exit, or a public way</p>	<p>FMMS 15</p>



Appendix B: Definitions

Term	Definition	FMMS
Accessible Route	A continuous, unobstructed path connecting all accessible elements and spaces within or between buildings or facilities. Interior accessible routes may include corridors, floors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking, access aisles, curb cuts, and crosswalks at vehicular ways, walks, ramps, and lifts.	FMMS 15
ADA Coordinator	Responsible for coordination of Commonwealth programs and responsibilities to assure compliance with the Americans with Disabilities Act (ADA) Sections 503 and 504 of the Rehabilitation Act of 1973 and other federal and state laws and regulations pertaining to persons with disabilities.	FMMS 15
ADA Implementation Plan	An agency's response to the ADA Strategic Compliance Assessment, identifying the actions that will be taken to achieve compliance with the ADA. In conformance with the requirements of the ADA Transition Plan, it will include a completion date and a responsible party. The Implementation Plan will be updated on an annual basis.	FMMS1 5



Appendix B: Definitions

Term	Definition	FMMS
ADA Strategic Compliance Assessment	An analysis of an agency's level of compliance with the ADA, completed by DCAMM's Accessibility Consultants, and serving as an updated ADA Self Evaluation. The report identifies high priority ADA issues that need immediate mitigation, accessibility projects that may require capital funding, changes needed to policies and procedures, and accessibility improvements that can be undertaken by facility staff.	FMMS 15
ADA Title I	The section of the ADA that prohibits employers from discriminating against qualified individuals with disabilities and addresses the obligation of employers to provide accommodations to employees with disabilities, some of which may require modifications to a building or facility.	FMMS 15



Appendix B: Definitions

Term	Definition	FMMS
ADA Title II	<p>The section of the ADA that applies to state and local government entities, protecting qualified individuals with disabilities from being denied equal opportunity to participate in, or benefit from, a program, service or activity because a building or facility is not accessible and usable. Title II requires that state entities conduct a Self-Evaluation to review operating policies and procedures for non-discrimination and adopt and implement a Transition Plan for removal of architectural and structural communication barriers that limit participation in programs, services and activities. Buildings and facilities constructed prior to the effective date of Title II regulation do not have to be brought up to standard of accessibility for new construction but barriers must be removed by structural or non-structural means to the extent necessary to ensure that programs are accessible and usable when viewed in their entirety.</p>	FMMS 15



Appendix B: Definitions

Term	Definition	FMMS
<p>Administrative Bulletin ANF 19, “Enhancing Coordination and Integration to Promote Accessibility”</p>	<p>Published by the Commonwealth’s Executive Office of Administration and Finance, this bulletin became effective on April 1, 2011. It outlines and establishes the policy and programmatic framework through which the Commonwealth will proactively act to remove physical and programmatic barriers that limit equal participation in state programs, activities and services. ANF 19 also establishes the Universal Access Committee (UAC), which makes recommendations to the Office of Administration and Finance including defining, overseeing and coordinating implementation of the actions necessary to achieve the purpose and policy of Administrative Bulletin 19.</p>	<p>FMMS 15</p>
<p>Alternative Formats</p>	<p>A legal requirement to ensure effective written communication. It requires providing information or audio recordings to people unable to use standard print. These include but are not limited to Braille, large print text, digital files, audio recordings, or accessible emails to effectively inform those who are blind or have low vision, and people with other disabilities unable to use typical print material.</p>	<p>FMMS 17</p>



Appendix B: Definitions

Term	Definition	FMMS
Americans with Disabilities Act (ADA)	<p>A federal statute that became a law on July 26, 1990 and was later amended with changes effective January 1, 2009. The ADA is a wide-ranging civil rights law that prohibits under certain circumstances discrimination based on disability. It gives Americans with disabilities protections against discrimination that are similar to those given to other groups by the Civil Rights Act of 1964. The ADA requires that "entities" of state and local government designate ADA Coordinators to oversee efforts to comply with the law and to handle disability based discrimination complaints. The ADA broadly protects the rights of individuals with disabilities in employment, access to state and local government services, places of public accommodation, transportation, and other important areas of American life. Title II of the ADA is the section that applies to state and local government entities, protects qualified individuals with disabilities from discrimination in programs, services, and activities of state government.</p>	FMMS 15 FMMS 17
APPA	<p>An international association providing leadership in educational facilities through research, publications, professional development, and credentialing, known as the Association of Physical Plant Administrators.</p>	FMMS 03



Appendix B: Definitions

Term	Definition	FMMS
Area of Refuge or Area of Rescue Assistance	An area which has direct access to an exit where people, who are unable to use stairs or unable to travel more than 100 feet to a public way, may remain temporarily in safety to await further instructions or assistance during emergency evacuation. Areas of refuge are required by the International Building Code in most newly constructed public buildings and additions, unless they are fully sprinklered.	FMMS 15
Asbestos	A naturally occurring silicate mineral used commercially for its desired physical properties. Asbestos (Chrysotile) became increasingly popular among manufacturers and builders in the late 19th century because of its sound absorption, tensile strength, resistance to damage (fire, heat, electrical and chemical), and affordability. It was used in such applications as electrical insulation for hotplate wiring and in building insulation. When asbestos is used for its resistance to fire or heat the fibers are often mixed with cement (resulting in fiber cement) or woven into fabric or mats. In the mid 1980's asbestos became a health concern for respiratory diseases. Although it has not been banned in the US it is regulated by the US EPA under OSHA 29 CFR 1926.	FMMS 08
Asset Management	The linking of data in a record model to a database of building assets to assist in efficiently maintaining and operating the facility.	FMMS 13



Appendix B: Definitions

Term	Definition	FMMS
Assistive Technology	<p>Devices used by people with disabilities, including physical, sensory, or cognitive limitations, in order to perform functions that might otherwise be difficult or impossible. Assistive technology can include mobility devices such as walkers and wheelchairs, as well as hardware, software, and peripherals that assist people to increase, maintain, or improve functional capacities.</p>	FMMS 17
Audio Description	<p>Used to communicate visual wayfinding cues, such as views: directional identification, and information signs; elevator panels and You-Are-Here maps. Audio Description can let users know where they are, what’s nearby and how to proceed in order to reach various destinations.</p> <p>Ideally, users will be able to customize the audio description for:</p> <ul style="list-style-type: none"> • Desired amount of detail (e.g. “Always tell me what floor I’m on.”) • Particular destinations (e.g. “Lead me to an accessible women’s restroom.”) • Preferred types of information (e.g. “Always describe the text on elevator buttons.”) 	FMMS 17



Appendix B: Definitions

Term	Definition	FMMS
AutoCAD	A computer-aided design (CAD) program used for 2-D and 3-D design and drafting. AutoCAD allows users to design a building and structure and its components in 3-D, annotate the model with 2-D drafting elements and access building information from the building's model database.	FMMS 11
Braille	A system of touch reading and writing for blind persons, in which raised dots represent the letters of the alphabet. Braille also contains equivalents for punctuation marks and provides symbols to show letter groupings. There are many types of Braille; however, Type II contracted Braille is the only one that is compliant with ADA 2010 Standards for dimensional requirements	FMMS 17
Building Amenity Areas	Areas within a building or building complex that house services which are helpful to the building occupants and whose presence is a convenience. Examples include food facilities, copying services, express mail collection, fitness centers or child care centers.	FMMS 11
Building Code	A defined body of rules that govern and constrain the design, construction, alteration, and repair of buildings. Such codes are based on requirements for the safety, health, and quality of life of building occupants and neighbors, and vary from city to city.	FMMS 11



Appendix B: Definitions

Term	Definition	FMMS
Building Information Modeling (BIM)	The generation and management of digital representations of a facility. Building information models contain “object-intelligent information” including physical and functional characteristics of building systems, components and furnishings. When managed as complete sources of facility information, BIMs are shared knowledge resources that support decision-making about a facility from design and construction, through its operational life.	FMMS 11 FMMS 13
Building Rentable Area	The actual square-unit of a building that may be leased or rented to tenants, and upon which lease or rental payments are computed. It usually excludes common areas, elevator shafts, stairways, and space devoted to cooling, heating, or other equipment.	FMMS 11
Building Service Area	Areas that serve building maintenance and operation. This type of space generally includes janitor’s closets, receiving areas, loading platforms, trash rooms, and building storage areas.	FMMS 11
Building Usable Area	Measured to predominant inside of exterior wall (Predominant face of wall is the inside finished surface that constitutes 50% or more of the vertical dimension between the finished floor and finished ceiling) and mid-point of occupant to occupant wall, and outside of common space wall – no deductions for interior structural elements.	FMMS 11



Appendix B: Definitions

Term	Definition	FMMS
Business Continuity	The continuing of operations and services under adverse conditions due to threatened or actual natural disasters and human-caused or technology-related events.	FMMS 09
Capital Asset Management Information System (CAMIS)	A database inventory of state facility infrastructure – both major (i.e. elevators, HVAC and its major related components) and minor (fire extinguishers by location), as well as tasks (i.e. cleaning windows, cleaning carpets, etc.). CAMIS includes an enterprise asset management (EAM) and maintenance software program used at all facilities owned and operated by the Commonwealth to help automate all aspects of maintenance operations, including equipment history, scheduling, preventive maintenance, work orders, labor and expense tracking, procurement and reporting.	FMMS 06 FMMS 13 FMMS 15
Circulation spaces	The primary means of moving from one space to another within a building or in or out of the building itself. Circulation spaces include hallways, vestibules, corridors and lobbies.	FMMS 11
Combustible materials	Building materials such as wood and paper products, fuels (oil, gas, kerosene, and coal), and flammable products that may be stored in buildings (e.g. solvents, paper, etc.)	FMMS 08



Appendix B: Definitions

Term	Definition	FMMS
Commissioning	The process of verifying that a new building or facility's subsystems (for example: building envelope, plumbing, electrical and lighting, HVAC, life safety, wastewater controls, and security) achieve the project requirements as intended by the building owner and as designed by the building architects and engineers. Specific asset information developed and verified during this process may be collected using COBie spreadsheet data.	FMMS 13
Commodities	Products that can be bought and sold.	FMMS 14
"Commodities and Services"	The phrase used by the Massachusetts "Procurement Information Center" when describing the procurement of anything (goods, products, equipment, services, etc.) by all Executive departments and any Non-Executive departments that have elected to follow 801 CMR 21.00.	FMMS 14
Common Areas	These areas provide space for floor service, floor amenity, building service, and building amenity areas.	FMMS 11



Appendix B: Definitions

Term	Definition	FMMS
Commonwealth Facilities	The buildings for which DCAMM has assumed maintenance and management. The extent of these services to be provided by DCAMM for a User Agency may differ from agency to agency, depending on the User Agency Agreement between DCAMM and the User Agency and the negotiated Service Level Matrix (SLM). This standard applies to leased buildings as well as Commonwealth owned.	ALL FMMS
Computerized Maintenance Management System (CMMS)	A utility that maintains a computer database of information about an organization's maintenance operations to assist facility maintenance staff in maximizing their effectiveness. A CMMS achieves this goal by tracking work orders, monitoring system reliability and repair/maintenance costs, and providing preventive maintenance tools.	FMMS 06
Confined Space	An area whose configuration hinders activities of any employees who must enter into, perform work in, and exit from it. Confined spaces have limited or restricted means of access, are large enough to permit access for the performance of necessary work, and are not designed for continuous occupancy.	FMMS 08



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Term	Definition	FMMS
Construction Management at Risk (CMR)	The procurement process where the contractor is contractually obligated to provide leadership in the construction process through a series of services provided to the owner, including design review, scheduling, cost control, value engineering, construction coordination, etc. After providing these pre-construction services, the contractor takes on the financial obligation to carry out the construction under a specified cost agreement.	FMMS 12
Construction Operations Building Information Exchange (COBie)	A format through which data reported/exported from a Building Information Model may be read/imported into a CMMS/IWMS system such as CAMIS or New CAMIS. COBie is recognized as a part of the National BIM Standard (NBIMS), and is a defined BIM Use Case and contracted deliverable in the DCAMM BIM Guide.	FMMS 13
Continuous Commissioning	The process that involves facility staff in regular periodic reviews of equipment performance and calibration.	FMMS 10
Controlling Agency	A state agency with the “legal control or jurisdiction” of the property as provided by M.G.L. Chapter 7C, Section 41, which carries with it the right to “occupy, or make expenditure for the maintenance of, any land, buildings or other state-owned or state-occupied facilities.” Control and jurisdiction does not mean that a state agency is the owner of the property since the Commonwealth owns all state property.	FMMS 01 FMMS 03 FMMS 15



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Term	Definition	FMMS
Custodial Maintenance	The cleaning and upkeep of the facility and includes the routine (daily) tasks and capital investments for cleaning equipment and supplies.	FMMS 05 FMMS 06
DCAMM ADA Coordinator	<p>The person responsible for working with Massachusetts Office on Disability (MOD) and ensuring compliance with all ADA requirements, not only related to DCAMM's daily operations, but also at all Commonwealth facilities. Established in accordance with Executive Order 526 (E.O. 526), each Executive Branch Entity shall appoint an ADA/504 Coordinator who shall report directly to the Executive Branch. The Entity Head works with the Massachusetts Office on Disability (MOD) concerning issues involving persons with disabilities, and where state employee matters are involved with the Office of Diversity and Equal Opportunity.</p> <p>The ADA Coordinator is responsible for coordinating activities necessary to ensure compliance with all disability rights related federal and Massachusetts laws, regulations, policies and procedures, including but not limited to the Americans with Disabilities Act of 1990 (ADA), ADAAA 2008, the Federal Rehabilitation Act (1973) as amended, Executive Order 526, the Governor's Model Employer Program, and Administration and Finance Administrative Bulletin #19.</p>	FMMS 15 FMMS 17



Appendix B: Definitions

Term	Definition	FMMS
DCAMM Security Manager	This position reports to the Deputy Commissioner of Facilities Management and will work closely with the DCAMM Office of Facilities Management and Maintenance to implement standards and integrate security into the shared services model for Commonwealth facilities.	FMMS 01 FMMS 15
DCAMM Security Technology Standards	Series of technology specifications for equipment installed at Commonwealth facilities. These specifications identify acceptable security equipment and technology to be used to provide the Level of Protection (LOP) specified from the Facility Security Assessment (FSA). The Security Technology Standards include information on access control software, cards and readers, video cameras, storage systems, management software, screening equipment and turnstiles, site protection systems (bollards, fencing, gates), and other related systems.	FMMS 01
Decommissioning	The process of closing down and demolishing a facility at the end of its' useful life-cycle.	FMMS 13
Demand Response (DR)	A voluntary temporary reduction, or shift in a facility's electricity use, in response to a request from the utility company in order to reduce electrical use during periods when the electrical grid experiences peak demand (e.g. hot summer days). This shift in energy usage is accomplished by several means including switching to on-site emergency generators, and load curtailment (temporarily turning off non-essential equipment).	FMMS 10



Appendix B: Definitions

Term	Definition	FMMS
Department of Homeland Security (DHS)	Responsible for protecting the United States and its territories (including protectorates) from and responding to terrorist attacks, man-made accidents, and natural disasters.	FMMS 01
Design-Bid-Build (DBB)	The current project delivery method approved by DCAMM for all projects to be done in compliance with this Standard. Under the DBB delivery method, the project scope and documents are prepared by an architect/engineer, and the lowest qualified bidder is awarded the contract to complete the project.	FMMS 12
Design-Build (D/B)	A project delivery system in which the design and construction services are contracted by a single entity known as the design-builder or design-build contractor. Design-build relies on a single point of responsibility contract. The design-build project delivery system is used to minimize risks for the project owner and to reduce the delivery schedule by overlapping the design phase and construction phase of a project.	FMMS 12



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Term	Definition	FMMS
DHS Office of Infrastructure Protection (IP)	This agency is responsible for leading the national effort to protect critical infrastructure from all hazards by managing risk and enhancing resilience through collaboration with the critical infrastructure community. The office conducts and facilitates vulnerability and consequence assessments to help critical infrastructure owners and operators and State, local, tribal, and territorial partners understand and address risks. IP provides information on emerging threats and hazards so that appropriate actions can be taken. The office also offers tools and training to partners to help them manage the risks to their assets, systems, and networks.	FMMS 01
DHS Science and Technology Directorate (ST)	The primary research and development arm of the Department of Homeland Security which manages science and technology research, from development through transition, for the Department's operational components and first responders to protect the homeland.	FMMS 01
Disability	Defined by the ADA as a physical or mental impairment that substantially limits a major life activity. The determination of whether any particular condition is considered a disability is made on a case-by-case basis.	FMMS 15



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Term	Definition	FMMS
Disaster/Emergency Management	An ongoing process to mitigate, prepare for, respond to, maintain continuity during and recover from an incident that threatens life, property, operations, or the environment. Emergency Management, in order to lessen the impact, must be comprehensive, progressive, risk-driven, integrated, collaborative, coordinated, flexible, and professional.	FMMS 09
Durable Goods	(or “hard goods”) Items that are used over an extended period time and are not consumed or destroyed in short-term use. Durable goods typically have a higher cost per unit and multiple-year periods between purchases. (i.e. electronic equipment, furniture, appliances, machinery, lawn equipment, etc.)	FMMS 14
Emergency Maintenance	Situations requiring immediate attention because of a failure in or around the facility that would cause significant damage to the building, building systems, and/or equipment. Such emergencies can create an unmanageable situation and/or unsafe conditions and needs to be rectified immediately.	FMMS 06
Emergency Management Institute (EMI)	A component of FEMA directly supports the implementation of the National Incident Management System (NIMS), the National Response Framework (NRF), the National Disaster Recovery Framework (NDRF), and the National Preparedness Goal (NPG) by conveying necessary knowledge and skills to improve the nation’s capability.	FMMS 09



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Term	Definition	FMMS
ENERGY STAR	A U.S. Environmental Protection Agency voluntary program that helps businesses and individuals save money and protect the environment through superior energy efficiency.	FMMS 10
ENERGY STAR Portfolio Manager	A free online tool that Facility Managers can use to measure and track energy and water consumption, as well as greenhouse gas emissions. It is used to benchmark the performance of one building or a whole portfolio of buildings, all in a secure online environment.	FMMS 10
Enterprise Energy Management System (EEMS)	A metering system installed at several State facilities that allows Facility Managers to view energy performance on a real-time basis.	FMMS 10
Environmentally Preferable Product (EPP)	Refers to a product or service that has a reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. EPPs include practices that minimize waste, conserve energy or water, reduce the amount of toxins either disposed or consumed, and products with recycled content.	FMMS 02 FMMS 03 FMMS 10
E-Team Efficiency and Sustainable Buildings Group ("E-Team")	The business unit in DCAMM's Office of Facilities Management and Maintenance charged with reducing energy consumption, utility costs, and greenhouse gas emissions. The team also works to ensure that new construction and major renovation projects meet energy and water efficiency targets.	FMMS 10



Appendix B: Definitions

Term	Definition	FMMS
Executive Order 403	E.O. 403 Integrated Pest Management	FMMS 07
Executive Order 515 (E.O. 515) "Establishing an Environmental Purchasing Policy"	Requires all janitorial service companies providing services to Executive Branch Agencies to use Environmentally Preferable (green) cleaning as specified in Commonwealth statewide contracts.	FMMS 02 FMMS 03
Facility Information Management	An integration of process and technology to enable the efficient life-cycle management of facilities. A key ingredient of facility information management is the use of building information modeling.	FMMS 13
Facility Life-Cycle	Facility life-cycle is a view of a facility over the course of its' entire life, viewing it not just an operational building, but also taking into account the design, construction, commissioning, operation and decommissioning phases.	FMMS 13
Facility Manager	Responsible for the maintenance and operation of a facility, which includes oversight of all in-house and external/contract service providers	ALL FMMS



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Term	Definition	FMMS
Facility Operations and Maintenance Plan (FOMP)	Provides the facility owners, operators, and occupants with detailed information on the building systems and operations as well as a foundation for training and system analysis. The FOMP also provides a means to reduce operating costs through a comprehensive maintenance assessment and implementation plan that looks at all maintenance at a facility and identifies best practices to save time and money, while increasing efficiency and the productive life of equipment.	FMMS 06
Facility Staff	Internal service providers reporting to the facility manager for maintenance and operation of a facility.	All FMMS
Facility Systems Analysis	Measuring how a facility's performance compares to the design model predictions to ensure that the facility is operating to specified design and sustainable standards. It typically focuses on how a facility's mechanical system operates and how much energy a facility uses.	FMMS 13



Appendix B: Definitions

Term	Definition	FMMS
Federal Emergency Management Agency (FEMA)	Part of the U. S Department of Homeland Security, coordinates the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all Federal disasters, whether natural or man-made, including acts of terror. FEMA provides expertise and resources to support local and regional governments in emergency planning, preparation, response and recovery.	FMMS 09
Fire Safety Code (527 CMR: Board of Fire Prevention Regulations)	A model code adopted by the state or local jurisdiction and enforced by fire prevention officers within municipal fire departments. It is a set of rules prescribing minimum requirements to prevent fire and explosion hazards arising from storage, handling, or use of dangerous materials, or from other specific hazardous conditions. It complements the building code. The fire code is aimed primarily at preventing fires, ensuring that necessary training and equipment will be on hand, and that the original design basis of the building, including the basic plan set out by the architect, is not compromised. The fire code also addresses inspection and maintenance requirements for various types of fire protection equipment in order to maintain optimal active fire protection and passive fire protection measures.	FMMS 16
Fire Safety Coordinator	A person responsible for facility/building personnel training and fire drills. The Fire Safety Coordinator will usually be a member of the Incident Management Team (for emergency management).	FMMS 16



Appendix B: Definitions

Term	Definition	FMMS
Fire Safety Plan	A document that specifies a set of facility/building-specific safety measures and action items in the event of fire. The plan includes key contact information, the location of utility services, access issues, the locations of dangerous stored materials, the locations of people with special needs, the locations for sprinkler system connections, a layout/drawing/site plan of the facility/building, maintenance schedules for all life safety systems, and personnel training/fire drill procedures. A current approved Fire Safety Plan is required by Commonwealth law, and is to be made available to the local fire authority.	FMMS 16
Floor Amenity Area	The space on a floor that provides convenience to more than one occupant.	FMMS 11
Floor Rentable Area	The gross measured area minus the area of vertical penetrations.	FMMS 11
Floor Rentable to Usable Ratio	The Floor Rentable Area divided by the Floor Usage Area. It is used to calculate the portion of use of the common area to the office area.	FMMS 11
Floor Service Area	An area of a floor that provides the services necessary for occupancy on that floor, including elevator lobby, janitor closets, utility rooms, toilet rooms, and common corridors.	FMMS 11
Floor Usable Area	The gross measured area less the floor service and floor amenity areas less the vertical penetrations.	FMMS 11



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Term	Definition	FMMS
Geographic Information System (GIS)	The collection, management and use of facility digital data accurately referenced to a precise location on the earth's surface. BIM data can be integrated with GIS to create a seamless re-use and re-purposing of facility data. GIS tools enable users to access and manipulate GIS data.	FMMS 13
Green Cleaning	The use of cleaning products and practices that have lower environmental impacts than conventional products and practices.	FMMS 03
Green Grounds and Landscape Maintenance	A planned and organized approach to grounds and landscape maintenance that uses products and processes to reduce negative impacts on human health and the environment.	FMMS 02
Green Seal	A non-profit organization that develops life cycle-based sustainability standards for products, services, and companies in addition to offering third-party certifications.	FMMS 03
Gross Areas of a Building: Standard Methods of Measurement (<i>ANSI/BOMA Z65.3-2009</i>)	Provides a uniform basis which is used to compute, communicate and compare the measurement of buildings by gross building area and other floor area measurements.	FMMS 11
Gross Building Area	The total constructed area of the building. It is the area used for appraisals, tax assessments, and parking tabulations. It is not to be used as the rentable area of the building since it includes exterior walls and shafts.	FMMS 11



Appendix B: Definitions

Term	Definition	FMMS
Gross Measured Area	The area measured to the dominant portion of exterior walls, finished common area walls, and the centerline of walls that separate different tenants within the building. The measured area excludes major vertical penetrations.	FMMS 11
IAQ-Building Education and Assessment Model (I-BEAM)	A US EPA guidance tool designed for use by building professionals and others interested in maximizing indoor air quality in facilities/buildings. Implement I-BEAM with assistance from the MDPH/IAQ-Program.	FMMS 08
OFMM Director of Operations and Maintenance	Responsible for overseeing the operations, budgets, and occupant needs of Commonwealth facilities.	All FMMS
Impervious Surfaces	Refer to paved, developed, or naturally occurring surfaces that do not allow precipitation (rainwater, storm water, hose water, etc.) to pass through to subsequent soil layers. Examples of impervious surfaces include roofs, paved roads, parking areas, sidewalks, and some hard soils that have been compacted either by design or by use.	FMMS 02



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Term	Definition	FMMS
Incident Management Team (IMT)	<p>A group of representatives from public safety departments (i.e. fire, law enforcement, EMS, et al.) trained to serve in Command and General Staff positions during the initial hours following an emergency. The IMT includes, but is not limited to the Facility Manager, Security Director, Life Safety Coordinator, key agency personnel identified by the stakeholder that manage the logistical, fiscal, planning, operational, safety and community issues related to an incident, emergency or other sentinel event. An IMT can respond to a wide range of emergencies, including fires, floods, earthquakes, hurricanes, tornadoes, tsunami, riots, spilling of hazardous materials, and other natural or human-caused incidents.</p>	<p>FMMS 09 FMMS 16</p>
Incidental Purchases	<p>One-time, unanticipated, non-recurring purchases of goods or services that are not Available from a Statewide Contract. Incidental purchases do not require a competitive procurement or contract. Incidental purchases are authorized under object codes governed by M.G.L. Chapter 7, Section 22.</p>	FMMS 14



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Term	Definition	FMMS
Indoor Air Quality (IAQ)	The air quality within and around buildings and structures, especially as it relates to the health and comfort of building occupants. IAQ can be affected by indoor environmental contaminants, adequacy of fresh air, temperature, and relative humidity. Source control, filtration and use of ventilation to dilute contaminants are the primary methods for improving indoor air quality in most buildings.	FMMS 08



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Term	Definition	FMMS
Integrated Pest Management (IPM)	A process for achieving long term, environmentally sound pest control using a wide variety of management practices. An IPM program shall include a combination of pest monitoring, good sanitation practices, education, appropriate solid waste management, building maintenance, cultural pest control measures, mechanical pest control measures, and biological pest controls. Chemical pesticides will be used only when the use of these measures is warranted and when used as part of an integrated pest management plan (IPM Plan).	FMMS 07
Interagency Security Committee (ISC)	Created under U.S. Executive Order 12977 to address continuing government-wide security for Federal facilities. The ISC's mandate is to enhance the quality and effectiveness of physical security in, and the protection of buildings and nonmilitary Federal facilities in the United States. The ISC standards apply to all nonmilitary Federal facilities in the United States - whether government-owned, leased or managed; to be constructed or modernized; or to be purchased.	FMMS 01



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Term	Definition	FMMS
International Sanitary Supply Association's (ISSA) Cleaning Industry Management Standard - Green Building (CIMS-GB)	Procedures and principles cleaning organizations shall follow to deliver efficient, quality service management and environmentally preferable cleaning programs. CIMS and CIMS-GB certification demonstrates an organization is prepared to deliver quality, customer-focused services and ensures an organization is capable of delivering a comprehensive green cleaning program based on LEED: EB O&M green-cleaning criteria.	FMMS 03
Invasive (Non-Native) Plant Species	Plants that grow in an environment outside their natural habitat range by being introduced (planted) to the area either deliberately or accidentally. Invasive plants can thrive in areas beyond their natural range of dispersal. These plants are characteristically adaptable, aggressive, and have a high reproductive capacity. Their vigor combined with a lack of natural predators in introduced habitats often lead to outbreak populations.	FMMS 02
Job Order Contracting (JOC)	A contracting method under limited use by DCAMM, in which a competitively procured contract covers multiple small projects initiated through Work Orders that utilize unit price books as the basis of cost. JOC works by pre-selecting contractors on qualifications and performance at best value pricing. Under JOC, DCAMM will qualify and select a number of contractors from whom a facility manager will be able to secure the contractor best qualified to complete a given project.	FMMS 12



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Term	Definition	FMMS
Landfills	Waste disposal sites for solid waste from human activities.	FMMS 04
Landscape Maintenance	The upkeep of the landscape, flower beds, trees and shrubs, water gardens and hardscape areas such as parks, parking lots and walkways around the building. This not only includes the maintenance of the landscape and hardscape areas but also seasonal tasks such as snow removal, leaf clean-up and removal and winter preparation of the landscape and water gardens.	FMMS 05 FMMS 06
Large Procurements	Purchases of goods or services with a value greater than \$150,000, or as otherwise established by the Commonwealth of Massachusetts Office of the Comptroller.	FMMS 14



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Term	Definition	FMMS
Leadership in Energy and Environmental Design for Existing Buildings: Operations and Maintenance (LEED EB: O+M)	A rating system established through the U.S. Green Building Council (USGBC) that “encourages owners and operators of existing buildings to implement sustainable practices and reduce the environmental impacts of their buildings, while addressing the major aspects of ongoing building operations. All buildings (as defined by standard building codes) are eligible for certification under LEED EB: O&M. It is targeted at single buildings, whether owner occupied, multitenant, or multiple-building campus projects. The prescriptive and performance strategies of LEED EB: O&M are intended to provide operational benefits throughout the life of the building. If these strategies are continued, a building can maintain and even improve its performance over time. Projects that certify under any version of LEED for Existing Buildings must recertify at least once every five years in order to keep their certification current.”	FMMS 02 FMMS 03 FMMS 05 FMMS 10
Leadership in Energy and Environmental Design for Interior Design and Construction (LEED ID+C)	A rating system established through the U.S. Green Building Council (USGBC) for certifying “high-performance green tenant spaces that are healthy, productive places to work; are less costly to operate and maintain; and have a reduced environmental footprint. It gives tenants and designers, who do not always have control over whole building operations, the power to make sustainable choices.”	FMMS 10
Leading by Example (LBE)	A State program established via Executive Order 484 that includes energy reduction and renewable energy use targets.	FMMS 10



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Term	Definition	FMMS
Level of Protection (LOP):	A set of protective measures that may be customized to address site-specific threat conditions.	FMMS 01
Licensee	Individual or entity that is not a state agency or state employee but that occupies space of a User Agency as part of a service contract or other arrangement with the User Agency to further the User Agency's mission, or that occupies space as part of a contract with DCAMM to further DCAMM's services. For example, a private consulting firm hired by an agency might be provided with offices inside the agency's space. The consulting firm would be a licensee.	FMMS 01 FMMS 03 FMMS 15
Life Cycle Cost Analysis (LCCA)	Estimates the true cost of a building, or its components over its anticipated lifetime. LCCA includes not only the initial capital cost, but also reflects any available (utility) rebates and operation and maintenance costs calculated in present value.	FMMS 10
Life Safety Code (<i>NFPA 101</i>)	The most widely used source for strategies to protect people based on building construction, protection, and occupancy features that minimize the effects of fire and related hazards. It applies to existing structures as well as new structures.	FMMS 16
Limited English Proficiency (LEP)	Federal regulations about English Language Proficiency that apply to courthouses requiring that signage be provided in three languages, determined by demographics of location.	FMMS 17



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Term	Definition	FMMS
Local Fire Authority	The chief Fire Official (or authority having jurisdiction) or their designated representative for the city/town in which the facility/building is physically located.	FMMS 16
Maintenance History	The documentation of all actions (work orders, routine, replacement and preventative maintenance) and observations relevant to the operation and performance of an asset. This history is maintained in the DCAMM CAMIS application.	FMMS 13
Major Vertical Penetrations	Building elements such as stairs, elevator shafts, chases, chimneys and duct shafts, including their enclosing walls.	FMMS 11
Mass LEED Plus	<p>Part of the standards included in EO 484. Applies to all new construction and major renovation projects over 20,000 square feet. This standard includes:</p> <ul style="list-style-type: none"> • Certification by the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) program • Energy Performance 20% better than the Massachusetts Energy Code • Independent 3rd party commissioning • Reduction of outdoor water consumption by 50% and indoor water consumption by 20% relative to standard baseline projections <p>Conformance with at least 1 of 4 identified smart growth criteria</p>	FMMS 10



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Term	Definition	FMMS
<p>Massachusetts Department of Environmental Protection (MassDEP)</p>	<p>Responsible for ensuring clean air and water, the safe management of toxics and hazards, the recycling of solid and hazardous wastes, the timely cleanup of hazardous waste sites and spills, and the preservation of wetlands and coastal resources. Through its participation in the Clean Energy Results Program, MassDEP advances environmental protection by promoting the development of renewable energy and energy efficiency projects in Massachusetts through its efforts to reduce regulatory and other barriers to clean and energy efficient development across the state.</p>	<p>FMMS 10</p>
<p>Massachusetts Architectural Access Board (MAAB)</p>	<p>The regulatory agency within the Massachusetts Executive Office of Public Safety that develops and enforces regulations designed to make public facilities accessible, functional, and safe for use by persons with disabilities. MAAB regulations are found in Section 521 of the Code of Massachusetts Regulations. The Board receives and adjudicates complaints of non-compliance, provides advisory opinions on its regulations, and grants variances where compliance would be technologically unfeasible or compliance would result in excessive and unreasonable costs without any substantial benefit to persons with disabilities.</p>	<p>FMMS 15</p>



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Term	Definition	FMMS
Massachusetts Department of Energy Resources (DOER)	The Commonwealth's energy policy office and oversees efforts to ensure deployment of all cost-effective energy efficiency measures, maximize the development of clean energy resources, ensure reliable energy supplies, minimize the relative cost of clean energy, and support Massachusetts' clean energy companies and employment. The DOER Leading by Example Program works with DCAMM and many other agencies to develop strategies and programs to support clean energy and sustainability efforts across state government.	FMMS 10
Massachusetts Emergency Management Agency (MEMA)	The state agency charged with ensuring the state is prepared to withstand, respond to, and recover from all types of emergencies and disasters, including natural hazards, accidents, deliberate attacks, and technological and infrastructure failures.	FMMS 01 FMMS 09
Massachusetts Facilities Managers Association (MAFMA)	A network of state facilities managers that meets periodically to discuss specific topics of interest with the aim toward increased information sharing and problem solving.	FMMS 05
Massachusetts Office on Disability (MOD)	The designated agency to oversee and administer the Commonwealth's compliance with the Americans with Disabilities Act (ADAMOD's mission is to ensure the full and equal participation of all people with disabilities in all aspects of life by working to advance legal rights, maximum opportunities, supportive services, accommodations and accessibility in a manner that fosters dignity and self-determination.	FMMS 15



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Term	Definition	FMMS
<p>MassSave® Incentive Programs</p>	<p>An initiative sponsored by Massachusetts' gas and electric utilities and energy efficiency service providers. The sponsors of MassSave® work closely with the Massachusetts Department of Energy Resources to provide a wide range of services, incentives, trainings, and information promoting energy efficiency that help residents and businesses manage energy use and related costs. MassSave® offers training, incentives, and educational resources to contractors, building managers and facilities teams so they can recommend, install and maintain the latest generation of energy-efficient equipment- and help customers achieve their energy goals.</p>	<p>FMMS 10</p>
<p>Mitigation</p>	<p>The structural and non-structural actions taken to lessen the impact of a hazard to the building through the review of possible risks.</p>	<p>FMMS 09</p>
<p>National Incident Management System (NIMS)</p>	<p>Administered by the US Department of Homeland Security and referenced in FEMA Publication P-501. This publication provides a consistent nationwide template to enable Federal, State, tribal, and local governments, nongovernmental organizations (NGOs), and the private sector to work together to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity.</p>	<p>FMMS 09</p>



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Term	Definition	FMMS
Native Plant Species	Plant types that grow naturally in a particular region, ecosystem, or habitat without direct or indirect human actions (Federal Native Plant Conservation Committee, 1994). The plants growing before Europeans settled in North America are considered native to the eastern United States. Native plants include all kinds of plants from mosses and ferns to wildflowers, shrubs, and trees.	FMMS 02
Net Floor Area	The type of floor area available to the tenant for a specific purpose that is used for rent calculations.	FMMS 11
NFPA Code 13	The National Fire Protection Association Standard for the Installation of Automatic Sprinkler Systems.	FMMS 16
Occupant Area	The same as Office Area; it is the area of a building occupied by a tenant that houses personnel, equipment, fixtures, furniture, and supplies.	FMMS 11
Occupant(s)	The individuals or entities that occupy space in a Commonwealth facility by virtue of their status as a Controlling Agency, User Agency, or because they are permitted to use the space as a Licensee of the User Agency	ALL FMMS



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Term	Definition	FMMS
Occupational Safety and Health Administration (OSHA)	A federal agency responsible for ensuring safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance.	FMMS 03
Office Area	The lease space occupied by and for the exclusive use of the tenant.	FMMS 11
Office Buildings: Standard Methods of Measurement (<i>ANSI/BOMA Z65.1-2010</i>)	This BOMA standard provides guidelines for measuring useable space in both existing and new sites by taking a building wide approach to floor area measurement. It identifies and assists in measuring both occupant space as well as the space that benefits all occupants.	FMMS 11
Omni Class	A classification table that is used to name building spaces on floor plan documentation.	FMMS 11
OmniClass Construction Classification System (OCCS)	A means of organizing and retrieving information specifically designed for the construction industry. It is designed to provide a standardized basis for classifying information created and used by the North American architectural, engineering and construction (AEC) industry, throughout the full facility life cycle from conception to demolition or reuse.	FMMS 13



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Term	Definition	FMMS
Ongoing Consumables	Low-cost-per-unit materials that are regularly used and replaced through daily operations. (i.e. printing and copying operations. (i.e. printing and copying paper, notebooks, envelopes, business cards, sticky notes, paper clips, ink and toner cartridges, binders, batteries, etc.)	FMMS 14
Operational Efficiency	Represents the life-cycle, cost-effective mix of preventive, predictive, and reliability-centered maintenance technologies, coupled with equipment calibration, tracking, and computerized maintenance management capabilities all targeting reliability, safety, occupant comfort, and system efficiency.	FMMS 05 FMMS 06
Operational Security	A component of the facility/building security program/plan focused on people. This component includes the provision of staff to support the security protocol, the education, and training of employees, and the procedures for managing contractors, vendors, and visitors.	FMMS 01
Owner's Project Requirements	A written document that details the functional requirements of a project and the expectations of how it will be used and operated. These include project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.	FMMS 10



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Term	Definition	FMMS
Physical Security	The type of security that addresses actions one can take to protect buildings, property, and assets against intruders. When designing a physical security program, the three levels one needs to protect are the outer perimeter, the inner perimeter, and the interior. Examples of physical security measures include barriers, fences, gates, walls, outside perimeter lighting, signage, locks, and access control points.	FMMS 01
Pictogram	A symbol which is a picture that represents an object or concept, e.g. a picture of an envelope used to represent an e-mail message. Pictograms are common in everyday life, e.g., signs in public places or roads, whereas the term "icon" is specific to interfaces on computers or other electronic devices.	FMMS 17
Polychlorinated Biphenyls (PCB's)	Were widely used as dielectric and coolant fluids in transformers, capacitors, and electric motors. They were also used in construction materials like caulking as a plasticizer to improve a products resistance to degradation. They are known to cause cancer in animals and thought to do so in humans. They were banned in the US in 1979.	FMMS 08
Portfolio	A financial term for a collection of investments.	FMMS 11



Appendix B: Definitions

Term	Definition	FMMS
Preparedness	Ongoing activities, tasks, and systems to develop, implement, and maintain the program capabilities. This is completed by a cycle of planning, organizing, training, equipping, exercising, evaluating, and improving.	FMMS 09
Prevention	Preventing the human hazard, primarily from potential natural disasters, accidents, or human acts of violence.	FMMS 09
Preventive Maintenance	<p>Proactive work performed by various trades personnel based on scheduled inspections, scheduled testing, and minor element replacements. Preventive Maintenance consists of a series of maintenance requirements that provide a basis for planning, scheduling, and executing scheduled maintenance, planned versus corrective for improving equipment life and to avoid any unplanned maintenance activity/minimize equipment breakdowns. Predictive Maintenance also involves the use of electronic monitoring equipment to warn of problems/conditions before they affect equipment performance.</p> <p>Glenn Hunt, Peripheral Systems, Inc., <i>Comprehensive Facility Operation & Maintenance Manual</i>. Last updated: 10-04-2013. Accessed on 10/20/2013 via http://www.wbdg.org/om/om_manual.php</p>	FMMS 06 FMMS 13



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Term	Definition	FMMS
Preventive Maintenance Plan (PMP)	Will typically identify Preventive Maintenance task descriptions and schedules, troubleshooting, replacement parts, service providers, operating quantity and unique storage requirements for spare parts. The Plan also lays out a regularly scheduled inspection of building interior and exterior equipment and systems for signs of wear and tear that will require routine and/or corrective maintenance. This inspection process is performed by building facilities staff as well as contracted service providers.	FMMS 06
Procurement	The act of obtaining or buying goods and services. The process includes preparation and processing of a demand as well as the end receipt and approval of payment.	FMMS 14



Appendix B: Definitions

Term	Definition	FMMS
Program Access	<p>A standard in Title II of the ADA requires that a person with a disability shall have an equal opportunity to participate in, or benefit from, programs, services, and activities, when viewed in their entirety in a time-frame and setting equivalent to people without disabilities. Program access is intended to remove physical barriers to services, programs, and activities, but it generally does not require that each facility, or each part of a facility, be fully accessible if program accessibility can be achieved through administrative and operational means. In providing program access, entities are not required to take any action that would result in a fundamental alteration to the nature of the service, program, or activity in question or that would result in undue financial and administrative burdens. This determination can only be made by the head of the public entity or a designee and must be accompanied by a written statement of the reasons for reaching that conclusion. The determination that undue burden would result must be based on all resources available for use in a program. If an action would result in such an alteration or such burdens, the entity must take any other action that it can to ensure that people with disabilities receive the benefits and services of the program or activity.</p>	FMMS 15



Appendix B: Definitions

Term	Definition	FMMS
Programming	Identification of the spatial, functional, and operational requirements for a facility (uses, areas, required adjacencies, etc.) to meet the projected needs and goals of the facility or partial facility. Program Validation assesses the accuracy, efficiency and effectiveness of a design in meeting those requirements.	FMMS 13
Project Life-Cycle	Is a time based view of a facility project over the course of the planning, design, construction, and commissioning and handover processes. This view focuses on activities during a project's active design, construction, and delivery phases. It is a subset of the building life-cycle and excludes operating and maintenance activities that commence after a building is commissioned. The project lifecycle uses OmniClass Table 31 for phase definitions.	FMMS 13
Project Management	The discipline of planning, organizing, motivating, and controlling resources to achieve specific goals. A project is a temporary endeavor designed to produce a unique product, service or result with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value. The temporary nature of projects stands in contrast with business operations, which are repetitive, permanent, or semi-permanent functional activities to produce products or services.	FMMS 12



Appendix B: Definitions

Term	Definition	FMMS
Project Parameters	Parameters that are defined and then added to multiple categories of elements in a project. They are specific to the project and cannot be shared with other projects. You can use shared parameters to define project parameters and then associate these project parameters with specific categories of elements within a project.	FMMS 13
Radon	An invisible, radioactive gas that results from the decay of radium, which may be found in rock formations beneath buildings or in certain building materials themselves.	FMMS 08
Reactive (Corrective) Maintenance	Unplanned repair or adjustment of equipment or components.	FMMS 05
Record model	An accurate digital representation of the physical conditions, environment, and assets of a facility BIM model.	FMMS 13
Recovery	The process of bringing the affected building and its operations back to business continuity and some degree of normalcy.	FMMS 09
Recycling	The collection, reprocessing, marketing and use of materials that were diverted or recovered from the solid waste stream.	FMMS 04
Recycling Collection Area	Area located in regularly occupied space in a building for the collection of occupants' recyclables. A building may have numerous collection areas from which recyclable materials are typically removed to a central collection and storage area.	FMMS 04



Appendix B: Definitions

Term	Definition	FMMS
Reuse	The return of materials to active use in the same or a related capacity as their original use, thus extending the lifetime of materials that would otherwise be discarded.	FMMS 04
Request for Responses (RFR)	(also known as: "solicitation" or "procurement") The method for communicating the contract performance specifications to potential bidders. The goal of an RFR is to obtain best value commodities and services and to define the expected outcomes. Requirements and procedures for the individual RFRs will vary based on the particular need, the complexity, and the total value of the contract.	FMMS 14
Response	The effort to mitigate the impact of an incident on the public and the environment.	FMMS 09
Retro-commissioning	The application of the commissioning to an existing facility, to improve the facility's performance by identifying opportunities for operational improvement that will increase occupant comfort and save energy.	FMMS 10 FMMS 13
Revit®	Software specifically built for Building Information Modeling (BIM), empowering design and construction professionals to bring ideas from concept to construction with a coordinated and consistent model-based approach. Revit is a single application that includes features for architectural design, MEP and structural engineering, and construction.	FMMS 11



Appendix B: Definitions

Term	Definition	FMMS
Routine Maintenance	Simple, small-scale activities and specific work-order requests associated with general upkeep and continued operation of a building, site, equipment, machine, plant, or system against normal wear and tear. Typically, it includes activities that are completed by the facility management staff and regularly contracted facility service providers, rather than specialized professionals. Routine maintenance is done within a specific period of time e.g. daily weekly monthly etc.	FMMS 05 FMMS 13
Security Supervisor	The individual responsible for implementing and managing the security program at a facility in cooperation with the facility manager.	FMMS 01 FMMS 15
Security Staff	In-house security presence that can perform a range of security roles. May be cross-trained for duties such as control center monitoring, incident investigation, quick deployment to address incidents, and emergency preparedness support	FMMS 01
Service Delivery and Performance Objectives	The supplemental document for each Standard that details the activities necessary for successful implementation of the Standard at Commonwealth facilities, as well as the performance goals for ensuring these activities meet the anticipated level of service. This document shall also align with the activities listed within the Service Level Matrix.	FMMS 01 FMMS 03



Appendix B: Definitions

Term	Definition	FMMS
Service Level Matrix (SLM)	The agreement between a User Agency and the Facility Manager/DCAMM that details information on the scheduling of all contracted services and their expected delivery period(s). It clearly states metrics, responsibilities, and expectations and ensures that both parties have understanding of service requirements	ALL FMMS
Service Providers	The parties responsible for completing all maintenance and management activities governed by this standard. Service providers at the facility are internal facility staff, external contracted providers, or both.	FMMS 01 FMMS 03 FMMS 15
Services	Include but are not limited to furnishing of time, labor, effort, specialized skills by a contractor including operational, professional, maintenance, consultant, maintenance and repair, non-professional, and human and social services (i.e. janitorial services, landscaping services, architectural services, engineering services, environmental consulting services, etc.).	FMMS 14



Appendix B: Definitions

Term	Definition	FMMS
Signage	The visual, tactile, and verbal communication component of wayfinding. For easy wayfinding, architecture must be obvious and intuitive. If it isn't, signage is required to communicate what the architecture cannot. Too much or too little signage causes confusion. For effective wayfinding, it is critical that when signage is used it must provide the correct information at the correct time. Braille cannot be sharp to the touch.	FMMS 17
Source reduction:	The reduction of the amount of unnecessary material brought into a building. One example is purchasing products with less packaging.	FMMS 4
Small Procurements	Purchases of goods or services with a value between \$10,000 and \$150,000, or as otherwise established by the Commonwealth of Massachusetts Office of the Comptroller.	FMMS 14
Space Information Management	Spatial information taken directly from drawings or BIM models.	FMMS 11
Space Management	A comprehensive system for centralizing and storing real-time information about building(s), space under management and occupants.	FMMS 11
Space Management Plan	Development and maintenance of a facility space inventory that assists in the analysis of capital outlay budget requests for new construction, renovation and other space-related factors.	FMMS 11



Appendix B: Definitions

Term	Definition	FMMS
Space Management Services Providers	The parties responsible for completing all space management-related activities for the facility. The space management service providers at the facility are internal facility staff, external contracted providers, or both.	FMMS 11
Space Utilization	The application and use of building/facility floor space.	FMMS 11
Statewide Contracts	Established using the requirements of 801 CMR 21.00 by the Operational Services Division's (OSD) Procurement Management Teams on behalf of the Commonwealth. Departments that follow 801 CMR 21.00 are required to use Statewide Contracts, regardless of the dollar amount of the purchase.	FMMS 14
Strategic Sourcing Team (SST)	Responsible for the continuous evaluation and improvement of purchasing activities related to a specific service or commodity. The SST is responsible for identifying and verifying the need, sources and timing of purchases. A SST is composed of program area experts and procurement staff from the purchasing department, with a Team Leader to guide the team throughout the procurement process. Department SSTs must monitor contractor performance and customer satisfaction at the department level. Thus, the SST is maintained for the term of the contract.	FMMS 14
Subcontracted Maintenance	Maintenance that is typically performed by outside contractors or by facility staff outside of their usual job description.	FMMS 05 FMMS 06



Appendix B: Definitions

Term	Definition	FMMS
Sustainable Sites Initiative (SITES™)	A program to promote sustainable land development and management practices that can apply to sites with and without buildings. The SITES program will provide tools for those who influence land development and management practices and can address increasingly urgent global concerns such as climate change, loss of biodiversity, and resource depletion.	FMMS 02
Tactile Signage	Incorporates raised text or symbols to enable touch reading by people who are blind, and touch enhancement of visual perception for people who are vision impaired.	FMMS 17
Technological Security	A component of the facility security program that involves the management of technical data and systems, alarm systems for intrusion detection, video monitoring systems, building automation systems that control HVAC and lighting, fire alarm systems, communication systems such as radios and emergency call boxes, and access control of spaces.	FMMS 01
Tipping Fees	Fees charged by a landfill for disposal of waste, typically quoted per ton.	FMMS 04
Total Worker Health	Integrates occupational safety and health protection with health promotion to prevent worker injury and illness and improve health and wellbeing.	FMMS 08



Appendix B: Definitions

Term	Definition	FMMS
Universal Design (UD)	A conceptual framework for the design of places, products, information, communication and policy to be usable by the widest range of people operating in the widest range of situations without special or separate design. Most simply, Universal Design is human-centered design of everything with everyone in mind.	FMMS 15
User Agency	The state agency that has the legal right to occupy and use a space for its mission. A User Agency may have the exclusive use of an entire building, or space in a multi-agency building with the right to use common areas jointly with others	ALL FMMS
Volatile Organic Compounds (VOCs)	Organic chemicals that have a high vapor pressure at ordinary, room-temperature conditions. Common VOCs such as formaldehyde and other hydrocarbons create indoor air quality hazards and/or are potential groundwater contaminants.	FMMS 08
Waste	All materials that flow from the building to final disposal. Examples include paper, grass trimmings, food scraps and plastics. Waste refers to all materials that are capable of being diverted from the building's waste stream through waste reduction.	FMMS 04



Appendix B: Definitions

Term	Definition	FMMS
Waste Disposal	Elimination of waste by means of burial in a landfill, combustion in an incinerator, dumping at sea, or any other way that is not recycling or reuse.	FMMS 04
Waste Diversion	A management activity that disposes of waste other than through incineration or the use of landfills. Examples include reuse and recycling.	FMMS 04
Waste Reduction	Includes both source reduction and waste diversion through reuse or recycling.	FMMS 04
Waste Stream	The overall flow of waste from the building to a landfill, incinerator, or other disposal site.	FMMS 04
Water Best Management Practices	Implemented by facility staff to reduce water consumption by both building interior and exterior uses. These include but are not limited to: landscaping with native (and/or drought resistant) plants, capturing rainwater, using soil amendments, encouraging use of water filling stations, aerators on sinks, dual flush valves, etc.	FMMS 10



Appendix B: Definitions

Term	Definition	FMMS
Wayfinding	<p>A dynamic strategy that allows people to find where to go and how to get there and back. Wayfinding is not a synonym for signage. Along with a variety of exterior and interior environmental elements and features such as canopies, thresholds, sightlines, lighting, maps, and electronic devices, signage is used as a tool for clarifying and communicating information further. Effective wayfinding strategies are inclusive and draw on senses and cognitive abilities to support decision making and navigational processes. Accurate and timely information must be provided when and where a user needs it. Placement of environmental cues and selection are critical to maximizing the communication. Often this cannot be achieved using only one method; redundancy and overlap of information can be helpful if used consistently.</p>	FMMS 17
Work Order	<p>A written (or electronic) request for a task or project to be completed. The order can be sent from a tenant to a facility manager, from a customer to a contractor, or internally from one company department to another. Work orders can range in scope from small (i.e. fixing a leak), to large (i.e. replacing old plumbing).</p>	FMMS 05 FMMS 06

