Standard Practice for
Property Management System Outcomes[1]

1. Scope

1.1 This practice describes expected outcomes associated with a property management system. It is a measure of achievement rather than process, and is descriptive rather than prescriptive.

1.2 Outcomes are defined as information, events, objects, or states of being produced as a result or consequence of a plan, process, accident, effort, or other similar action or occurrence.

1.3 An output measure is the tabulation, calculation, or recording of activity or effort and can be expressed in a quantitative or qualitative manner.

1.4 An outcome measure is an assessment of the results of a program activity compared to its intended purpose.

1.5 Consistent with Practice E2452, these outcomes are grouped into process management outcomes and operational outcomes.

1.5.1 Although they may be directly related, strategies and tactics should not be confused with outcomes. Strategies are long-term plans of action designed to achieve a particular goal. Tactics are maneuvers or actions calculated to achieve some end. For example, increasing exercise is a strategy to attain the goal or outcome of fitness. Running is a supporting tactic to achieve the goal or outcome of fitness. Other tactics or groups of tactics may achieve the same outcome. On the other hand, as the definition of *outcome* indicates, tactics are not required for attaining outcomes. For example, fitness may be an unplanned result of a job requiring physical exertion.

1.6 This practice describes the outcomes at a high level, with limited discussion of each outcome or components of each outcome. The intent is to provide a framework for current and potential additional standards. A cross reference relating current standards to the outcomes is provided in Section 5.

1.7 The outcomes further described in Section 5, are listed in the following:

1.7.1 *Process Management Outcomes:*

1.7.1.1 Outcome 1—Mission Support

1.7.1.2 Outcome 2—Accounting and Accountability

1.7.1.3 Outcome 3—Information Management

1.7.1.4 Outcome 4—Planning

1.7.1.5 Outcome 5—Relationships

1.7.2 *Operational Outcomes:*

1.7.2.1 Outcome 6—Property Functionality

1.7.2.2 Outcome 7—Resource Optimization

1.7.2.3 Outcome 8—Property Visibility

1.7.2.4 Outcome 9—Safety and Security

1.7.2.5 Outcome 10—Installation, Movement, and Storage

1.8 In Section 5, a rating scale is provided to quantify in a uniform manner achievement of outcomes and outcome components.

1.9 This practice, in combination with Practice E2279, clarifies and enables effective and efficient control and tracking of property and may provide an enhanced basis for making decisions surrounding both property and property management systems.

1.10 This practice is intended to be applicable and appropriate for all property-holding entities.

1.11 This practice covers tangible property as defined in Terminology E2135. Consistent with the nomenclature used, individual portions of the practice may be applicable to more limited subsets of tangible property, for example to equipment and not to material.

1.12 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E2131 Practice for Addressing and Reporting Loss, Damage, or Destruction of Tangible Property

E2132 Practice for Inventory Verification: Electronic and

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3. Terminology

3.1 *Definitions*—For definitions relating to property and asset management, refer to Terminology E2135.

3.1.1 *asset, n*—*(1)* anything owned having monetary value; *(2)* tangible or intangible items owned by an entity that have probable economic benefits that can be obtained or controlled by the entity. **(E2135)**

3.1.2 *best value, n*—expected outcome of an acquisition that provides the greatest overall benefit in response to the requirement.

3.1.3 *information management, n*—collection and management of information from one or more sources and the distribution of that information to one or more audiences.

3.1.3.1 *Discussion*—This sometimes involves those who have a stake in or a right to that information. Management means the organization of and control over the structure, processing, and delivery of information.

3.1.4 *operations, n*—exercise of the tasks that constitute equipment management. **(E2452)**

3.1.5 *opportunity, n*—concept that denotes a potential positive impact.

3.1.6 *opportunity assessment, n*—assessing external conditions that are helpful to achieving objectives.

3.1.7 *opportunity management, n*—managing external conditions that are helpful to achieving objectives.

3.1.8 *outcome, n*—information, event, object, or state of being produced as a result or consequence of a plan, process, accident, effort, or other similar action or occurrence.

3.1.9 *outcome measure, n*—an assessment of the results of a program activity compared to its intended purpose.

3.1.10 *output measure, n*—the tabulation, calculation, or recording of activity or effort and can be expressed in a quantitative or qualitative manner.

3.1.11 *process management, n*—planning and administering the activities necessary to achieve a desired level of performance and identifying opportunities for improving quality, operational performance, and ultimately, customer satisfaction. **(E2135)**

3.1.11.1 *Discussion*—It involves design, control, and improvement of key business processes.

3.1.12 *property functionality, n*—set of functions that an asset is able or equipped to perform.

3.1.13 *property management system, n*—subset of existing organizational processes related to the lifecycle management of property. **(E2135)**

3.1.13.1 *Discussion*—These processes represent sound practice and are compliant with applicable standards, policies, regulations, and contractual requirements.

3.1.14 *record utility, n*—overall measure of structured property records based on the usefulness of stored, standardized, and appropriately available information of sufficient accuracy and reliability to respond reasonably to entity requirements in a timely manner.

3.1.15 *resource optimization, n*—property management system outcome characterized by the minimization of asset holdings while assuring entity requirements for assets are met.

3.1.16 *return on investment, n*—earning power of assets measured as the ratio of the net income (profit less depreciation) to the average capital used (or equity capital) in a firm or project. **(Online Business Dictionary[4])**

3.1.16.1 *Discussion*—Usually expressed as a percentage, it is a measure of the profitability that (while not taking the time value of money into account) indicates whether or not a firm is using its resources in an efficient manner.

3.1.17 *risk, n*—concept that denotes a potential negative impact.

3.1.18 *risk assessment, n*—determination of quantitative or qualitative value of risk related to a concrete situation and a recognized threat.

3.1.18.1 *Discussion*—Risk assessment is considered as the initial and recurring step in a risk management process.

3.1.19 *risk management, n*—structured approach to managing uncertainty through risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources.

3.1.19.1 *Discussion*—Strategies include transferring the risk to another party, avoiding the risk, reducing the negative effect of the risk, and accepting some or all of the consequences of a particular risk.

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[3] The last approved version of this historical standard is referenced on www.astm.org.

[4] *The Online Business Dictionary*, s.v. "return on investment," http://www.businessdictionary.com (accessed February 1, 2009).

3.1.20 *strategy, n*—long-term plan of action designed to achieve a particular goal.

3.1.21 *sustainability, n*—system of actions, projected to be viable on an ongoing basis.

3.1.22 *system level outcome, n*—outcomes based on the policies, procedures, and tools that are in place to manage property, regardless of ownership.

3.1.23 *tactic, n*—maneuver or action calculated to achieve some end.

3.2 *Acronyms:*

3.2.1 *ECM*—equipment control matrix

3.2.2 *EMPM*—equipment management process maturity

3.2.3 *FAR*—Federal Acquisition Regulation

3.2.4 *LDD*—loss, damage, and destruction

4. Significance and Use

4.1 This practice establishes expected outcomes associated with a property management system.

4.2 Care should be taken not to confuse tactics with the outcomes described in this practice. Tactics are a means to an end. Outcomes are an end.

4.3 What is being measured is achievement, not process.

4.4 This practice encourages an inclusive understanding and communication of the outcomes associated with a property management system. As additional standards are added, comparisons on this basis to other property management systems can be further enabled.

4.5 This practice, in combination with Practice E2279, may provide an enhanced basis for making decisions surrounding both property and property management systems.

4.6 This practice is intended to foster and enable additional standard practices related to or based on the terms and concepts in the outcomes and outcome components.

4.7 In particular, this practice may suggest a standard for personal and management skills useful in efforts to achieve these outcomes.

5. Property Management System Outcomes

5.1 *Process Management Outcomes*—Process management outcomes are system level outcomes.

5.1.1 *Outcome 1: Mission Support:*

5.1.1.1 *Outcome Component 1.1: Mission Support*—The Property Management System should support the mission of the entity of which it is a part.

5.1.2 *Outcome 2: Accounting and Accountability*—There are four outcome components of Outcome 2: (2.1) property accountability and responsibility, (2.2) best value, (2.3) accounting/financial management, and (2.4) effectiveness and efficiency.

5.1.2.1 *Outcome Component 2.1: Property Accountability and Responsibility*—Property management is concerned with the management of specific rights and responsibilities associated with individual assets and groups of assets available to the entity for use. These specific rights and responsibilities are a subset of the total bundle of rights and responsibilities of the property owner or assignee that have been conveyed to the entity. This includes internal organizational, sub-organizational, and individual responsibility for property used or assigned.

5.1.2.2 *Outcome Component 2.2: Best Value*—Best value includes the concepts of efficiency and effectiveness. The entity seeks the best value in the long term in the use and maintenance of property (Practice E2279).

5.1.2.3 *Outcome Component 2.3: Accounting/Financial Management*—This includes accurate and timely financial recognition and accounting.

5.1.2.4 *Outcome Component 2.4: Effectiveness and Efficiency*—Property management practices must seek, when viewed in totality, to be effective and efficient, to the point at which benefits exceed the costs of operation (Practice E2279).

5.1.3 *Outcome 3: Information Management*—There are two major components of Outcome 3: (3.1) record utility and (3.2) reporting.

5.1.3.1 *Outcome Component 3.1: Record Utility:*

(1) Record utility is an overall measure of structured property records based on the usefulness of stored, standardized, and appropriately available information of sufficient accuracy and reliability to reasonably respond to entity requirements in a timely manner. In other words, the outcome is appropriately useful record information based on the control class of the property asset or class of property and other factors. One facet of record utility as an outcome is simply having the right data when it is needed. The optimal record utility outcome is collecting and storing the proper data so when information is requested there is neither a delay nor a special data call required to fulfill the request. Excessive storage, standardization, or availability of information may be inefficient and ineffective.

(2) While conducting a physical inventory is a tactic, an outcome of a physical inventory could be physical inventory accuracy. However, such a potential outcome is a limited snapshot produced by a process that of course has its own accuracy concerns. A more consistent and dependable outcome would then perhaps be record accuracy. In accordance with Practice E2608, not all items are tracked to the same level of control or accuracy. Therefore, extending the concepts of Practices E2279 and E2608, a more meaningful outcome here is record utility. For example, identification (tagging) is a tactic to support record utility. In accordance with Practice E2608, some property may appropriately not be tagged nor have control records created.

5.1.3.2 *Outcome Component 3.2: Reporting*—Fully scalable, flexible, responsive strategic and tactical reporting capability, available as needed, where needed. Reporting includes individual item reports, summary reports, and metrics. It also includes conceptual level presentations and reports derived from property control system information.

5.1.4 *Outcome 4: Planning*—There are two major components of Outcome 4: (4.1) awareness of opportunities and risks and (4.2) anticipate and prepare for the future.

5.1.4.1 *Outcome Component 4.1: Awareness of Opportunities and Risks*—Awareness should lead to consideration of options for action or inaction. In accordance with the provisions of Practice E2279, individuals should be empowered to take action within established operational parameters and constraints and as appropriate inform relevant stakeholders, especially cognizant management, of significant risks and opportunities. Tools for awareness include:

(1) Self assessment, using the EMPM model (Practice E2452) or other comparable methodology,

(2) Risk assessment and risk management, and

(3) Opportunity assessment and opportunity management.

5.1.4.2 *Outcome Component 4.2: Anticipate and Prepare for the Future:*

(1) Planning of various types including: strategic planning, tactical planning, and financial planning.

(2) Anticipate changes and impacts to the operational environment.

(3) Education and training as appropriate for stakeholders at various levels of involvement.

(4) Professional Involvement—Recognize the value of participation and contributions to professional organizations and other peer groups.

(5) Staffing.

(6) Technology Insertion—Insertion of new technologies is consistently considered with emphasis on accurate life-cycle cost of the technology and full benefits of the technology.

(7) Continuous improvement.

5.1.5 *Outcome 5: Relationships (Stakeholder Satisfaction)*—There are two major components of Outcome 5: (5.1) compliance and (5.2) interface.

5.1.5.1 *Outcome Component 5.1: Compliance*—Compliance includes policies and procedures.

(1) Internal—Awareness, understanding, and adherence to policies, procedures and internal controls.

(2) External—Awareness, understanding, and adherence to standards and special provisions inherent to the operating environment including applicable laws, rules, regulations, mandates, or contractual provisions.

5.1.5.2 *Outcome Component 5.2: Interface:*

(1) Internal Interface—Effective relationships with internal organizations (for example, security, human resources, information technology, purchasing, contracts, and so forth) are established.

(2) External Interface—Effective relationships with external customers and suppliers are established.

5.2 *Operational Outcomes*—Operational outcomes are item level outcomes.

5.2.1 *Outcome 6: Property Functionality:*

5.2.1.1 *Outcome Component 6.1: Property Functionality*—Property functionality is the set of functions that an asset is able or equipped to perform. The operational requirement or desired functionality may be less than, equal to, or greater than the asset functionality. In other words, the ability of an item to perform the task(s) or function(s) desired by the user may be different than the set of functions that the item is able or equipped to perform. Each case in the comparison has implications for the property management system.

5.2.2 *Outcome 7: Resource Optimization*—Resource optimization is a property management system outcome characterized by minimization of property holdings while assuring entity requirements for property are met. In short, resource optimization means only what is needed, all that is needed. There are four major components of Outcome 7: (7.1) sustainability, (7.2) return on investment, (7.3) maintenance and (7.4) loss consequence reduction.

5.2.2.1 *Outcome Component 7.1: Sustainability*—Sustainability is a system of actions, projected to be viable on an ongoing basis.

5.2.2.2 *Outcome Component 7.2: Return on Investment*—Earning power of property measured as the ratio of the net income (profit less depreciation) to the average capital employed (or equity capital) in a firm or project. Expressed usually as a percentage, it is a measure of the profitability that (while not taking the time value of money into account) indicates whether or not a firm is using its resources in an efficient manner (Online Business Dictionary[4]).

5.2.2.3 *Outcome Component 7.3: Maintenance*—Maintenance is *(1)* the act of maintaining by keeping in an existing state and preserving from failure or decline; *(2)* person, place, or thing that maintains; and *(3)* the upkeep of property or equipment (Terminology E2135).

5.2.2.4 *Outcome Component 7.4: Loss Consequence Reduction*—Loss, damage, and destruction (LDD) are key aspects of risk management. Projecting the possibility or probability of LDD, reporting and managing, and minimizing LDD are critical and economic factors in the success of any endeavor (Practice E2131). Under operations outcomes, the significance of LDD is based on negative operational impacts. Negative impacts may be related to data and intellectual property stored on the items lost. Multiple process management outcomes are potentially impacted by LDD as well.

5.2.3 *Outcome 8: Property Visibility:*

5.2.3.1 *Outcome Component 8.1: Property Visibility*—Ensure availability of property for operational use in accordance with classification as indicated in Practice E2608. Property visibility includes identification and tracking of items as appropriate.

5.2.4 *Outcome 9: Safety and Security*—There are two major components of Outcome 9: (9.1) safety and (9.2) security.

5.2.4.1 *Outcome Component 9.1: Safety:*

(1) Promote safe material handling practices and protect property during transport.

(2) Adequately protect property to mitigate loss or personnel injury or both.

5.2.4.2 *Outcome Component 9.2: Security:*

(1) Property is physically safeguarded as appropriate, for example, in accordance with Practice E2608.

(2) Access to property is restricted to those who have rights to use property (Practice E2452).

(3) Property management practice complies with and supports entity and customer security procedures and regulations (Practice E2452).

5.2.5 *Outcome 10: Installation, Movement, and Storage*—This is the physical movement of property. See Outcome 2 in 5.1.2 for changes in ownership, accountability, and responsibility. There are five major components of Outcome 10: (10.1) receipt, (10.2) installation and de-installation, (10.3) internal movement, (10.4) shipping, and (10.5) storage.

5.2.5.1 *Outcome Component 10.1: Receipt*—Receipt includes effective receipt of property into the systems and records of the entity, especially as specified in Practice E2605.

5.2.5.2 *Outcome Component 10.2: Installation and De-Installation*—Installation includes effective installation of property for intended use. De-installation includes effective de-installation of property.

5.2.5.3 *Outcome Component 10.3: Internal Movement*—Internal movement includes effective and efficient process and appropriate documentation of internal movement of property within the entity.

5.2.5.4 *Outcome Component 10.4: Shipping*—Shipping includes effective shipping of property. Considerations related to transfer of ownership or accountability and responsibility related to shipping are addressed in Outcome 2 in 5.1.2.

5.2.5.5 *Outcome Component 10.5: Storage*—Storage includes effective and efficient storage of property.

5.3 *Scoring Property Management System Outcomes:*

5.3.1 Each of the outcomes and outcome components can be used as described in this practice on a qualitative or quantitative basis based on existing standards, best practices, and individual entity command media and other guidance.

5.3.2 As stated elsewhere in this practice, it is the intent that this practice serve as a blueprint or guide in developing additional practices shedding additional light on individual outcomes, outcome components, or facets of the outcome components.

5.3.3 This is a measure of achievement, and is related to, but independent of the process measures described in Practice E2452, EMPM model. This is a measurement of outcomes or results—*if* being what is measured. The EMPM is a process measure—*how* being what is measured.

5.3.4 There is value in an effort here to quantify achievement of the outcomes and outcome components in a uniform manner. The scoring scale in Table 1 uses a one-to-ten scale for each outcome with the points evenly apportioned to outcome components of each outcome.

5.3.4.1 This rating scale is essentially arbitrary, as is the uniform allotment of points among the outcomes and outcome components. There is, however, less rationale for a differentiated scoring model than for this approach.

5.3.4.2 Rationale for assigning points for outcomes and outcome components is beyond the scope of this practice. Guidance for achieving the outcomes rests largely with existing and future supporting practices addressing outcomes, outcome components, or facets of outcome components. Other practices also may provide direct or indirect guidance in assigning points.

5.3.4.3 In using the resulting scores, primary emphasis should be on outcome or outcome component level goals and areas for improvement, rather than macro-level comparisons across time or between entities.

5.4 Table 2 provides a matrix relating the ten outcomes to current Committee E53 standards.

6. Usage

6.1 This practice is intended to provide policy and operational guidance to property management professionals and all those that mange, supervise, or audit property management systems.

6.2 Nothing in this or any standard nullifies, modifies, or restricts contractual or legal requirements of the entity. For example, the Federal Acquisition Regulation (FAR) effective as of the date of this practice prescribes a set of outcomes for property management. Entities and their assets subject to this regulation must comply with the regulation. If an entity subject to the FAR adopts this practice, use of the practice would not supplant their requirement to achieve the outcomes prescribed by the regulation. It is desirable to understand this and other similar overlaps as complementary rather than competing. See Table 3 as an example of the outline of the relationship between the FAR outcomes and the outcomes described in this practice.

6.3 This practice may suggest additional related or derivative standards based on this concept.

7. Keywords

7.1 asset management; assets; equipment; moveable property; outcome components; outcomes; probability; property; property management; risk; risk assessment; risk management; tangible property

TABLE 1 Scoring Chart

ASTM E2675 Standard Practice for Property Management System Outcomes	Scoring Chart	Available Points	Graded Points	Outcome Rating	Average Outcome
Process Management Outcomes			Example	Example	Example
Outcome 1—Mission Support				4	
	1.1 Mission Support	10	4		
Outcome 2—Accounting and Accountability				5	
	2.1 Property Accountability and Responsibility	2.5	1.5		
	2.2 Best Value	2.5	1		
	2.3 Accounting/Financial Management	2.5	2		
	2.4 Effectiveness and Efficiency	2.5	0.5		
Outcome 3—Information Management				5	
	3.1 Record Utility	5	3		
	3.2 Reporting	5	2		
Outcome 4—Planning				6	
	4.1 Awareness of Opportunities and Risks	5	4		
	4.2 Anticipate and Prepare for the Future	5	2		
Outcome 5—Relationships				6	
	5.1 Compliance	5	3		
	5.2 Interface	5	3		
	Sub Totals	**50**	**26**	**26**	**5.2**
Operational Outcomes			Example	Example	Example
Outcome 6—Property Functionality				5	
	6.1 Property Functionality	10	5		
Outcome 7—Resource Optimization				8	
	7.1 Sustainability	2.5	2		
	7.2 Return on Investment	2.5	1.5		
	7.3 Maintenance	2.5	2		
	7.4 Loss Consequence Reduction	2.5	2.5		
Outcome 8—Property Visibility				7	
	8.1 Property Visibility	10	7		
Outcome 9—Safety and Security				9	
	9.1 Safety	5	5		
	9.2 Security	5	4		
Outcome 10—Installation, Movement, and Storage				6	
	10.1 Receipt	2	1		
	10.2 Instillation and De-Instillation	2	1.5		
	10.3 Internal Movement	2	1.5		
	10.4 Shipping	2	0		
	10.5 Storage	2	2		
	Sub Totals	**50**	**35**	**35**	**7**
	Totals	**100**	**61**	**61**	**6.1**

TABLE 2 Matrix

Standard Outcomes	Practice E2131	Practice E2132	Terminology E2135	Practice E2221	Practice E2279	Practice E2306	Practice E2378	Practice E2379	Practice E2452	Practice E2453	Practice E2495	Practice E2497	Practice E2499	Practice E2605	Practice E2606	Practice E2607	Practice E2608
Outcome 1—Mission Support			x		x						x					x	
Outcome 2—Accounting and Accountability	x	x	x	x	x	x	x		x	x		x	x	x	x	x	
Outcome 3—Information Management	x	x	x	x	x				x			x	x	x	x	x	
Outcome 4—Planning	x		x		x		x	x	x	x	x	x				x	x
Outcome 5—Relationships	x	x	x		x				x				x	x	x	x	
Outcome 6—Property Functionality			x		x				x							x	
Outcome 7—Resource Optimization	x		x	x	x	x			x	x		x	x	x	x	x	
Outcome 8—Property Visibility	x		x	x	x				x				x	x	x	x	x
Outcome 9—Safety and Security	x		x		x				x							x	x
Outcome 10—Installation, Movement, and Storage	x		x		x				x			x	x	x	x	x	x

TABLE 3 Relationship Between FAR Outcomes and This Practice's Outcomes

FAR Outcomes	Standard Outcomes									
	1	2	3	4	5	6	7	8	9	10
(1) Establish and implement property management plans, systems, and procedures		x		x	x					
(i) Acquisition of property		x	x				x			
(ii) Receipt of government property		x	x				x	x		x
(iii) Records of government property		x	x				x	x		x
(iv) Physical inventory				x				x		
(v) Subcontractor control		x	x	x	x					x
(vi) Reports		x	x				x	x	x	x
(vii) Relief of stewardship responsibility		x	x	x	x		x	x	x	x
(viii) Utilizing government property				x		x	x		x	
(ix) Maintenance			x			x	x		x	x
(x) Property closeout		x	x	x	x					x
(2) Establish and maintain accounting data		x	x							
(3) Establish and maintain procedures and perform periodic internal reviews and audits				x	x	x				