



Facilitator Guide

Property Maintenance for Managers

CAM 
CERTIFIED APARTMENT
MANAGER®

NAA
NATIONAL APARTMENT ASSOCIATION
Education Institute

Property Maintenance for Managers

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Notes to Facilitator

This guide is designed to help you manage the information for this module and to help increase consistency at all training locations nationwide.

Duration

This is a 6 hour module (excluding breaks and lunch).

Materials Needed

- PowerPoint Slides
- Creekwood Case Study
- Property Maintenance Participant Workbook (PWB)

Equipment Needed

- Flipchart or whiteboard with stand and markers
- Computer with connection to project PowerPoint slides
- Microphone if necessary – dependent on room size and setup
- Sound system to play videos if necessary at your location

Using Slides

You will notice that some of the slides build, and when that happens, it can be difficult for the Facilitator to know when the slide is at its end. To help with that, there is a red period that indicates the last build. On any slide where you don't see a red period, that means that there is more, and to click again.

Knowledge Checks

There are Knowledge Checks at the end of the PWB. They are used by participants as a self-study after class and are not to be reviewed in class. A copy of the Knowledge Checks with answers is at the end of this Facilitator Guide.

Participant Workbook

Participant Workbook pages are noted throughout the facilitator guide. Use them to direct participants to summaries of classroom content. When providing page numbers, explain to participants they can follow along with classroom content, take notes, and/or use the content as a study aid after class. In some cases additional details are listed in the Participant Workbook; this is supplemental “nice-to-know” information.

Remind participants that the space provided in the workbook should be used for notes. Tested concepts and explanations will include the case study, the slides, the reference material and the facilitator's oral explanations.

At the end of each Participant Workbook, you will see Knowledge Checks pertaining to that section. Explain to participants that they can use these for self-study after class. Answers are provided on the pages following the questions.

Module “At-A-Glance”

The timing in this guide is provided as a guideline and is estimated for an average class size of 25; modify as needed.

Topic	Activity	Duration
Introduction	<ul style="list-style-type: none"> n/a 	5 mins
A CAM’s Role and Responsibilities	<ul style="list-style-type: none"> Using maintenance issues, participants will practice asking questions needed to complete service request forms and review training and types of maintenance 	60 mins
Hiring Maintenance Personnel	<ul style="list-style-type: none"> Participants will evaluate necessary maintenance skills and review candidate qualifications 	40 mins
General Maintenance Terminology	<ul style="list-style-type: none"> n/a 	15 mins
Overseeing Service Requests	<ul style="list-style-type: none"> Participants will review information on the service request summary. They will identify trends and look for causes and performance expectations. 	30 mins
Managing Inventory	<ul style="list-style-type: none"> Participants will review emergency supplies. Given inventory scenarios, participants will make a collective decision about what actions to take. 	45 mins
Hiring Contractors and Vendors	<ul style="list-style-type: none"> Given maintenance and repair scenarios, participants will learn the selection process for in-house, contractor or vendor selection Bidding and scoping of jobs will be discussed 	60 mins
Inspections	<ul style="list-style-type: none"> Participants will learn the variety of inspections necessary for the property and look at images to identify maintenance issues to address. 	20 mins
Preventive Maintenance	<ul style="list-style-type: none"> Participants will learn the value of and how to develop a preventive maintenance program. 	30 mins
Green Properties	<ul style="list-style-type: none"> Participants will learn about the many ways to “green” property operations Participants will determine the amount of water and money saved by replacing showerheads 	45 mins
Wrap Up	<ul style="list-style-type: none"> n/a 	10 mins
Approximate time		360 mins

Introduction

Welcome

Slide 1

Display slide.

Welcome participants.



Slide 2

Display Materials slide.

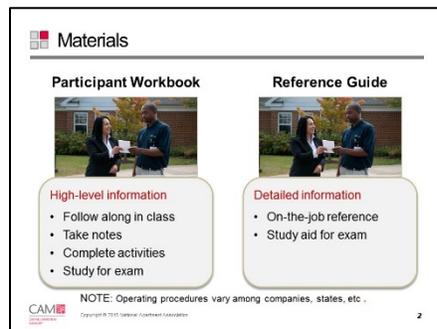
Provide the following materials and explain their purposes.

Click and Explain the Participant Workbook:

- Used in class to follow along with information, take notes, and complete activities
- Contains high-level information covered in class, worksheets, activity information, etc.

Click and Explain the Reference Guide:

- Used after class as an on-the-job reference
- Contains detailed information about topics covered in class

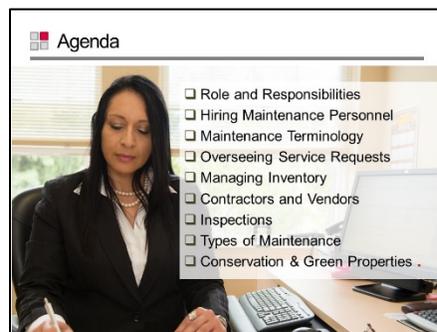


Agenda

Slide 3

Display Agenda slide.

Review the Agenda.



Slide 4

Display slide.

Introduce video: “We asked the industry professionals in this video to give us some insight into the topic of property maintenance. Let’s see what they have to say.”

Play video.



A CAM's Role and Responsibilities

Maintenance Overview

Slide 5

Display the title slide and **introduce** the topic.

Transition “Although many people and groups are involved in maintaining a property, the CAM is ultimately responsible for the property’s effective functioning, including maintenance operations.”

Slide 6

Display and Review Maintenance Overview slide.

Define Maintenance

- Refers to the upkeep and repair of property and equipment.

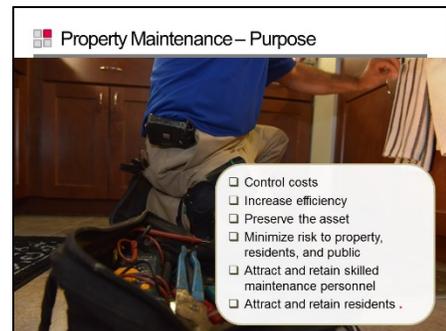
Click to show each point and **Review** what is included in maintenance. **Remind** students “inspect what you expect.”

Slide 7

Display Property Maintenance – Purpose slide.

Click to show each point and **Review** the benefits and purpose of having a well-maintained property.

Ask “If you were looking for a new place to live what types of things would you notice when driving through the community? What kind of impression would that make?”



Slide 8

Display slide.

Ask participants how comfortable are you supervising work you may not understand.

Introduce video: “Our industry professionals had some things to say about the importance of learning about property maintenance.”



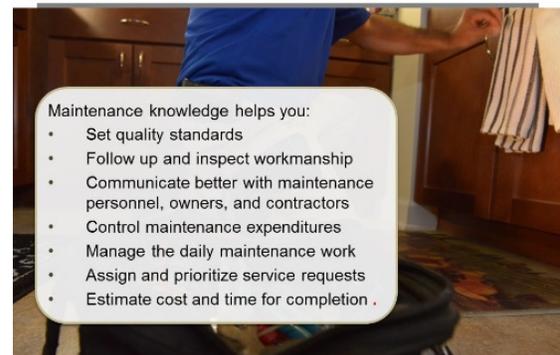
Slide 9

Display Benefits of Maintenance Knowledge slide.

Explain that having maintenance knowledge helps a CAM manage maintenance staff, communicate better, and prioritize tasks better.

Review examples on the slide.

Benefits of Maintenance Knowledge



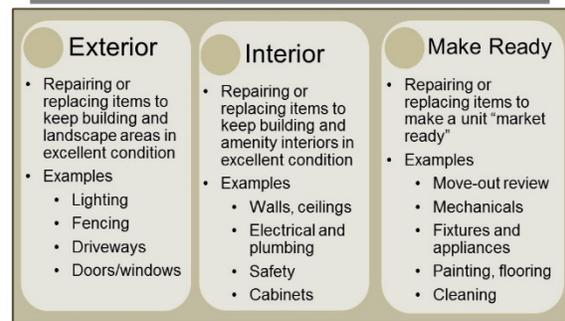
Slide 10

Display the slide and **define** the Types of Maintenance I slide.

Define Exterior Maintenance, Interior Maintenance and Make Ready Maintenance

Review the list in the Participant Workbook.

Types of Maintenance Part I



Slide 11

Display and Review Types of Maintenance II slide

List the types of maintenance, management, and prevention discussed in this section of the module.

Define Capital Maintenance

Review information about Moisture Management Plans

Define Preventative Maintenance

Types of Maintenance – Part II

Capital	Moisture Management	Preventative
<ul style="list-style-type: none"> Managing the addition or repair of large, non-recurring property expenditures that add to the "useful life" of a property. Includes the supervision and recordkeeping for capital installations 	<ul style="list-style-type: none"> Managing maintenance issues related to water damage, moisture infiltration, visible mold or musty odors. Ensures meeting lender and regulatory requirements for such incidents. 	<ul style="list-style-type: none"> A proactive approach to protect and maintain the value of a property. A scheduled approach to limiting deferred maintenance meeting regulatory inspection requirements

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Types of Maintenance

Types of Maintenance

You will oversee the Maintenance Supervisor or Service Manager, but the Maintenance Supervisor or Service Manager is responsible for the “market-ready” condition of a property.

Type of Maintenance	Description	What is Included	
Exterior	Repairing or replacing items to keep building <i>exteriors</i> in excellent condition	<ul style="list-style-type: none"> • Landscape irrigation • Exterior lighting • Siding and roofs • Fences and retaining walls • Drives and parking lots • Sidewalks and other concrete surfaces • Trash enclosures • Doors and windows 	
Interior	Repairing or replacing items to keep building <i>interiors</i> in excellent condition	<ul style="list-style-type: none"> • Walls, ceilings, windows, floors • Safety components <ul style="list-style-type: none"> ○ Smoke/CO detectors ○ Fire extinguishers • Doors, cabinets, counter tops • Electrical and mechanical • Appliances, plumbing, HVAC 	
Make Ready	Repairing or replacing items to make a unit “market ready” and meet the expectations of prospective residents	<ol style="list-style-type: none"> 1. Pre-inspection 2. Trash removal 3. Pest control 4. Mechanical systems—electrical, plumbing, appliances, HVAC 5. Retrofits & rehab items 6. Drywall, doors, windows, screens, locks, cabinets, counters, vanities 	<ol style="list-style-type: none"> 7. Shelving, towel racks, ceiling fans 8. Storage rooms, pantries 9. Painting, caulking 10. Flooring 11. Drains, sinks, tubs, showers 12. Post-inspection 13. Final cleaning and welcome gift

Type of Maintenance	Description	What is Included
<p>Capital Expenditure Projects</p>	<p>Large, non-recurring property expenditures that add to the “useful life” of a property</p> <p>Note: Depreciated over an expected life rather than a single year and are not used to calculate NOI</p>	<p>Non-recurring expenses, such as:</p> <ul style="list-style-type: none"> ● Replacing a roof ● Painting buildings ● Repaving a parking lot ● Adding a swimming pool
<p>Preventative</p>	<p>A proactive approach to protect and maintain the value of property. It maintains the property so deferred projects do not overwhelm staff and helps meet requirements for inspection set by authorities.</p>	<p>All aspects of interior and exterior areas of a property.</p>
<p>Moisture Management Plan</p>	<p>A plan outlining how to deal with maintenance issues related to water damage, moisture infiltration, visible mold, or musty/moldy odors</p> <ul style="list-style-type: none"> ● Many lenders and insurance carriers require properties to have a plan ● Treat issues of this type as emergencies and follow a specific protocol ● Know what actions to take for water damaged materials 	<ul style="list-style-type: none"> ● Carpet, backing and pad ● Ceiling tiles ● Cellulose insulation ● Fiberglass insulation ● Concrete or cinderblock surfaces ● Hard surface, porous flooring (linoleum, ceramic tile, vinyl) ● Non-porous hard surfaces (plastics and metals) ● Upholstered furniture ● Wallboard (drywall and gypsum board) ● Window drapes ● Wood surface

Slide 12

Display Reference: Types of Maintenance slide.

Refer participants to the Participant Workbook for more information about each of the **Types of Maintenance**.

Review content from Participant Workbook.

 **Reference:** Types of Maintenance



See the Participant Workbook for more information about each of the **Types of Maintenance**.

Slide 13

Transition “We now know a little more about what maintenance is and why we do it. It’s clear that it takes a team to accomplish all of the tasks. And that team needs to be focused in one direction. So let’s talk about how we get it done.”

Play Copa Airlines video.



Slide 14

After watching the video, **guide** participants to answer the three concept questions as a class.

Solicit personal takes on the lesson points.

Reinforce the concept that a team plays a critical role in strengthening performance for a property.

Ask volunteers to share ways they have or would encourage using this approach with maintenance on their property.

Activity: Copa Airlines

Instructions:

1. What was Copa’s strategy to become a great airline?
2. How did they make sure everyone was involved in the strategy and goals?
3. What is your strategy for achieving your mission?.

Standards

Slide 15

Display Setting Standards slide.

Explain that a key component of property maintenance is setting high quality standards to ensure that the property is well-maintained and improved.

Explain that setting high quality standards is another action CAMs can take to achieve their ultimate goal: to add value to the property.



Slide 16

Display Quality Standards slide.

Explain that quality standards include the way you treat others. A CAM sets the tone for the team and should act in the way they want staff to act. This includes:

- Set an example to follow
- Be respectful, ethical, and honest

Click to show each point and **Review** the remaining key points in the slide.

Explain that quality workmanship extends the useful life of everything on the property such as:

- Buildings
- Equipment
- Mechanical systems
- Major appliances
- Landscaping

Click and Emphasize the final key point on the slide.



Quality Standards

- Set an example for others
- Complete repairs correctly and in a timely manner
- Ensure make-readies are perfect and on time
- Follow preventative maintenance schedules

Quality workmanship extends the useful life of everything on a property.

When maintenance is performed well, it increases efficiency and reduces expenses .

QUALITY

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Slide 17

Display Communicating Standards slide.

Ask “What happens if a standard or expectation isn’t communicated properly?”

Accept responses. Responses will vary.

Explain that to avoid the adverse effects participants listed, a CAM must communicate expectations well.

Click and Review the communication tips listed.

Note that staff should know their manager will check that they completed the requested work.

Ask “What are some ways to clearly communicate expectations?”

Communicating Standards

- Write service requests clearly and accurately
- Include detailed, accurate information about the specific problem
- Understand the staff workload and prioritize
- Keep communication open to avoid misunderstandings
- Consider options
- Resolve issues
- Follow up .



Maintenance Personnel

Slide 18

Display slide.

Emphasize the value of maintenance personnel to a property. **Ask** how many of you are looking for staff right now.



Slide 19

Display slide.

Emphasize the impact maintenance personnel have on the resident experience. Quality maintenance leads directly to strong resident retention.



Slide 20

Display Maintenance Personnel slide.

Click to show each point and **Read** the ways Maintenance can make major contributions to a property's financial condition.

Maintenance Personnel

- Increase efficiency
- Control and reduce expenses
- Minimize risk and liability
- Preserve the asset
- Keep a preventive maintenance program to extend the life of:
 - Equipment
 - Fixtures
 - Structures

Maximum results at minimum costs

Slide 21

Display CAM Responsibilities slide.

Click to show each point and **Review** key tasks listed on slide.

Provide examples where applicable.

Use the last bullet as a transition into the next four slides.

Ask “Which of these responsibilities is most important to you on your property right now?”

CAM Responsibilities

- Keep current with laws & regulations
- Oversee safety & emergencies
- Maintain records & required certificates
- Conduct inspections
- Hire qualified technicians
- Know when to use a contractor
- Understand basic contracts
- Prepare and monitor budgets
- Plan for capital expenses
- Set maintenance up for success

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Slide 22

Display Reference: CAM Responsibilities slide.

Refer participants to the Participant Workbook for a summary of **CAM Responsibilities**.

Review content from Participant Workbook.

Reference: CAM Responsibilities

See the Participant Workbook for a summary of **CAM Responsibilities**.

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CAM Responsibilities

- Keep current with new laws and regulations that impact the property, particularly those relating to safety for residents and staff.
- Maintain records and required certificates (occupancy, elevators, swimming pools, etc.) for the property. This includes the Environmental Protection Agency (EPA) certification for working with refrigerants and Certified Pool Operator (CPO) where required.
- Understand the maintenance repairs necessary to ensure that all OSHA, local and state safe workplace requirements are met.
- Conduct inspections.
- Oversee safety issues and emergencies.
- Hire qualified maintenance technicians and evaluate their performance.
- Know when to use a contractor, and how to write a job specification and conduct a bidding process.
- Understand basic contracts.
- Prepare and monitor budgets.
- Plan for capital expenses.
- Set maintenance up for success.

Set Maintenance Up for Success

Slide 23

Display and Review Set Maintenance Up for Success: Manage Tasks & Personnel slide.

Transition “Let’s see some of the ways you can set your maintenance personnel up for success.”

Read the ways a CAM can set maintenance up for success.

Click and Review the key points on the slide.

Slide 24

Display and Review Set Maintenance Up for Success: Have a Plan slide.

Review the key points on the slide.

Slide 25

Display and Review Set Maintenance Up for Success: Work with Staff slide.

Review the key points on the slide.

Say “Have your sneakers ready. Walk the property.”

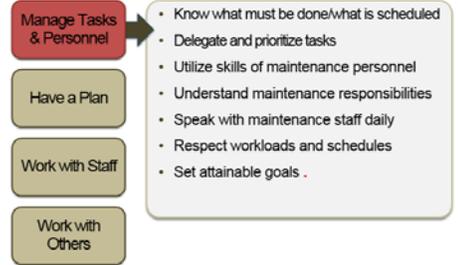
Slide 26

Display and Review Set Maintenance Up for Success: Work with Others slide.

Review the key points on the slide.

Ask “Do you have a list of contractors ready if needed?”

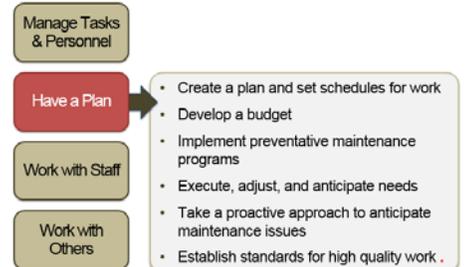
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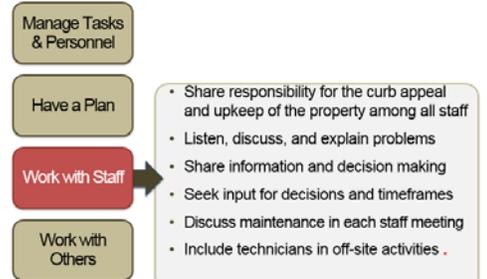
Set Maintenance Up for Success



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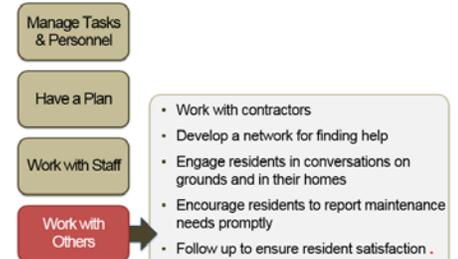
Set Maintenance Up for Success



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Set Maintenance Up for Success



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Slide 27

Participant Workbook

Refer participants to the Participant Workbook for an unabbreviated list of ways to **Set Maintenance Up For Success**.

Review content from Participant Workbook.

 **Reference:** Set Maintenance Up For Success



See the Participant Workbook for an unabbreviated list of ways to **Set Maintenance Up For Success**.

Set Maintenance Up for Success

<p>Manage Tasks & Personnel</p>	<ul style="list-style-type: none"> • Know what maintenance work must be done • Know what is scheduled for the day • Work with the maintenance supervisor to assign responsibilities; delegate tasks and prioritize tasks • Work closely with and utilize skills of the maintenance supervisor or service manager • Understand the duties/responsibilities of maintenance personnel • Speak with the maintenance supervisor or staff daily • Respect workloads and schedules • Schedule 20% of day for supervisor • Set attainable goals
<p>Have a Plan</p>	<ul style="list-style-type: none"> • Create a plan (daily, weekly and long term) • Work with your maintenance supervisor to set schedules for daily, weekly, monthly and overtime maintenance work • Develop a budget • Work with your supervising office to plan and implement preventative maintenance programs • Execute, adjust, and anticipate needs • Take a proactive approach to anticipate maintenance issues; “Fix it before it breaks” • Make decisions • Establish a standard for high quality work; “Inspect what you expect”
<p>Work with Staff</p>	<ul style="list-style-type: none"> • Inform the staff that maintenance and curb appeal is everyone’s responsibility, not just maintenance personnel • Everyone is responsible for the appearance and upkeep of the property • Listen, discuss and/or explain specific problems • Share information and decision making • Seek input for possible decisions and timeframes • Discuss maintenance in every staff meeting – even if it is only a brief update or praise for everyone’s effort • Include service technicians in off-site activities such as community service and job fairs
<p>Work with Others</p>	<ul style="list-style-type: none"> • Work with contractors • Develop a network for finding help: schools, temp employees, contractors, vendors • Engage residents in conversations on grounds and in their homes • Encourage residents to report maintenance needs promptly before they become more costly repairs or emergencies – not just when rent is due • Follow up to make sure repairs were completed and the resident is satisfied

Maintenance Training

Slide 28

Display Maintenance Training slide.

Transition “Training is an excellent way to set your employees up for success.”

Review the key points on the slide.

Slide 29

Display Reference: Training Types slide.

Refer participants to the Participant Workbook for a summary of **Training Types**.

Review content from Participant Workbook.

Ask the participants how important the office staff is in taking service requests.



Reference: Training Types



See page the Participant Workbook for a summary of **Training Types**.

Training Types

General Training	Office Staff
<ul style="list-style-type: none"> • Provide training opportunities & professional development • Cross train regularly 	<ul style="list-style-type: none"> • Staff must take accurate, detailed service requests • Getting work done right the first time: <ul style="list-style-type: none"> ○ Saves time & money • Increases resident satisfaction
Technician Training	CAMT
<ul style="list-style-type: none"> • Increases: <ul style="list-style-type: none"> ○ Maintenance personnel’s skills ○ Productivity ○ Employee job satisfaction ○ Resident satisfaction ○ Work finished correctly the first time • Reduces: <ul style="list-style-type: none"> ○ Maintenance expenses ○ Wasted time ○ Employee & resident turnover ○ Service call backs • Include technicians in reward, incentive and recognition programs • Encourage relationships with technicians at other properties • Include technicians in mystery shopping assignments 	<p>CAMT training:</p> <ul style="list-style-type: none"> • Consists of seven courses. • Is an introduction for new maintenance professionals or a refresher for more experienced maintenance technicians. • Gives professionals the knowledge and tools necessary to run an effective maintenance operation. • Is accredited by the American National Standards Institute (ANSI), a private non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system. <p>Prerequisites for the Certification:</p> <ul style="list-style-type: none"> • One year of apartment or rental housing maintenance experience • Successful completion of the seven courses and online content • Meeting all examination requirements within 24 months of declaring candidacy for CAMT <p>CAMT provides the knowledge and tools necessary to run an effective maintenance operation.</p> <p>For more information: http://www.naahq.org/learn/education/designation-programs</p>

Maintenance Technicians who increase their skill levels and accept greater responsibility create a stronger team and potentially add greater value to the property.

Slide 30

Display Maintenance Training for Office Staff slide.

Review the key points on the slide.

Click and Emphasize the key points on the slide.

Slide 31

Display Activity: Take Service Request Order slide.

Duration: 20 minutes

Instructions:

- In groups, put together a list of questions CAMs should be asking when someone calls with a service request to be sure that the request is as specific as possible.
 - Scenario One: My disposal doesn't work.
 - Scenario Two: I have no hot water.
 - Scenario Three: I have no power.

Debrief:

- **Ask** "What questions did you ask for scenario one (disposal doesn't work)?"

Sample answers:

- When was the last time you put something in the disposal? What was it?
 - Is it making any noises when you turn it on?
 - Will there be children alone in the apartment (maintenance can't enter if there are children alone in the apartment)? Pets?
- **Ask** "What questions did you ask for scenario two (no hot water)?"
- Sample answers:**
- When did it start?



Activity: Take a Service Request Order

Instructions:

In teams, put together a list of questions CAMs should be asking when someone calls with a service request to be sure that the request is as specific as possible.

- Scenario 1: My disposal doesn't work.
- Scenario 2: I have no hot water.
- Scenario 3: I have no power.

- Did you check the fuse box?
 - Did you pay the water bill?
 - Is this a localized problem or is it all over the unit?
 - Will there be children alone in the apartment? Pets?
- **Ask** “What questions did you ask for scenario three (no power)?”
Sample answers:
 - Did you check the breaker?
 - Is the pilot light on?
 - Is there water leaking? Is the water penetrating to other parts of the apartment?
 - Will there be children alone in the apartment? Pets?
- **Discuss** how the information collected impacts service requests and resident interaction.
- **Explain** that a missed piece of information results in an additional call to the resident , using more time, not providing a technician with the information they need, service request form, etc.

Technician Training

Slide 32

Display Training Service Technicians slide.

List what is increased when a property has better trained professionals.

Click and List what is reduced when a property has better trained professionals.

Slide 33

Display Training Service Technicians slide.

Click to show each point and **List** things CAMs should do for their technicians.

Click and Emphasize the key point on the slide.

Slide 34

Display slide.

Click and Emphasize the key point on the slide.

Note that *not* sending maintenance employees to offsite training because they are needed on the property is shortsighted.

Training Service Technicians

Increases:

- Maintenance personnel's skills
- Productivity
- Resident satisfaction
- Work finished correctly the first time

Reduces:

- Maintenance expenses
- Wasted time
- Employee and resident turnover
- Service call backs

Training Service Technicians

Training enhances technicians' skills, increases job satisfaction, and allows them to earn professional credentials .

- Include in reward, incentive and recognition programs
- Encourage relationships with technicians at other properties
- Include in mystery shopping assignments

Maintenance Technicians who increase their skill levels and accept greater responsibility create a stronger team and add greater value to the property .

CAMT

Slide 35

Display CAMT slide.

Explain that CAMT training:

- Has six modules.
- Is an introduction for new maintenance professionals or a refresher for more experienced maintenance technicians.
- Gives professionals the knowledge and tools necessary to run an effective maintenance operation.
- Is accredited by the American National Standards Institute (ANSI), a private non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system.

Click and Review key points on slide.

Slide 36

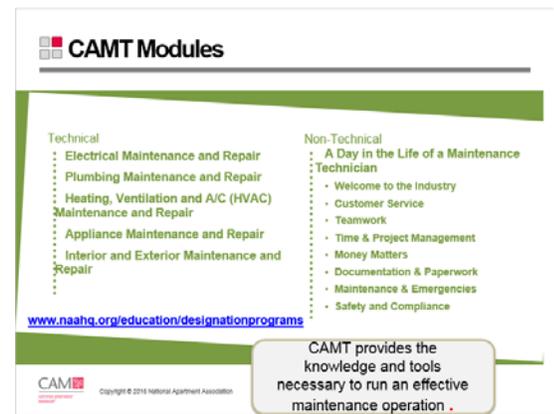
Display CAMT Modules slide.

Review the courses listed on the slide.

Explain prerequisites for the certification:

- One year of apartment or rental housing maintenance experience
- Successful completion of the seven courses and online content
- Meeting all examination requirements within 24 months of declaring candidacy

Click and Explain that CAMT provides the knowledge and tools necessary to run an effective maintenance operation.



Instructor Note

Refer participants to <http://www.naaq.org/learn/education/designation-programs> for more information.

Taking Service Requests

Slide 37

Display Taking Better Service Requests slide.

Explain that a service request form allows you to capture information about maintenance on your property.

Note that many properties enter service request information online and in some cases the request is also transmitted electronically to the maintenance technician's mobile phone.

Review key points on slide about information *office staff* needs to capture *before* work is completed.

Click and Review key points on slide about information *technicians* need to capture *after* work is completed.

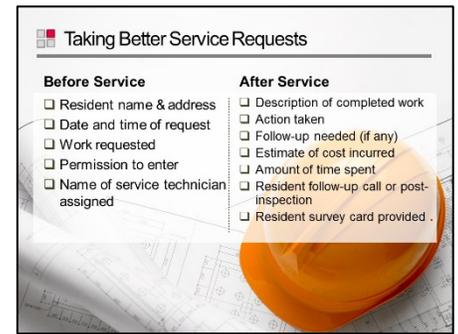
Emphasize the importance of closing out an electronic service request online properly and in a timely fashion.

Slide 38

Display Reference: Service Requests slide.

Refer participants to the Participant Workbook for a sample **Service Request Form Template** and a list of **Information Needed in Service Requests**.

Review content from Participant Workbook.



Reference: Service Requests



See page the Participant Workbook for a sample **Service Request Form Template** and a list of **Information Needed in Service Requests**.

Service Request Form Template

Property Name: _____
 Date: _____
 Time: _____
 Taken By: _____

Apartment Number: _____
 Resident Name: _____
 Resident Phone Number: _____

Entry Permission: _____

Specific Problem/Work Requested: _____

Assigned to: _____

Date: _____

Recommendations/Comments: _____

Action Taken

Completed: _____
 Temporary Repairs: _____
 Parts Replaced: _____
 Parts on Order: _____
 Time In: _____ Time out: _____

Completed by: _____

Resident Charge/Subcontractor Cost: _____

Resident Called Back: _____

Comments: _____

Information Needed in Service Requests

Many properties enter service request information online and in some cases the request is also transmitted electronically to the maintenance technician’s mobile phone.

Some service request forms or software programs automatically provide multiple copies. This is useful to give one copy to the resident, one to your supervisor, and one to file in the resident and/or unit file.

Before Service	After Service
<ul style="list-style-type: none"> • Resident name & address • Date and time of request • Work requested • Permission to enter • Name of service technician assigned 	<ul style="list-style-type: none"> • Description of work completed • Action taken • Follow-up needed (if any) • Estimate of cost incurred • Amount of time spent • Resident follow-up call or post-inspection • Resident survey card provided

Hiring Maintenance Personnel

Slide 39

Display the slide and **introduce** the topic.

Ask for feedback about hiring maintenance personnel on their property. How do you do it?



Slide 40

Display slide.

Reinforce the value of maintenance personnel to a property.



Slide 41

Display Hiring Maintenance Personnel slide.

Explain that typically, the CAM hires the Maintenance Supervisor and the Maintenance Supervisor, in turn, hires the rest of their staff, usually with participation from the CAM.

Explain that although the Maintenance Supervisor or Service Manager may hire maintenance personnel, the CAM is ultimately responsible for employee performance.

Mention that the hiring process is covered in depth in the CAM Human Resources Management Course. This section covers skills and qualifications for maintenance personnel specifically.

Recommend having the Maintenance Supervisor conduct the interview and initiate the hiring process.



Job Descriptions

Slide 42

Display Job Descriptions slide.

Explain that a job description should clearly detail the work to be performed.

Click and Explain that depending on the size of the property, a CAM may need separate job descriptions for entry level, mid-level and senior/supervisory level. **(Transition to next slide.)**

Slide 43

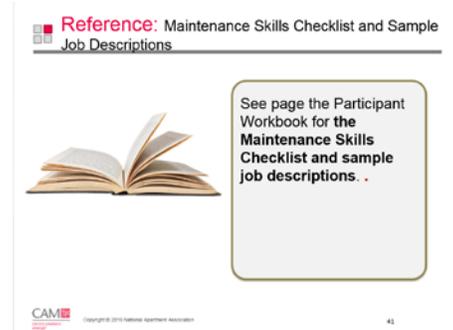
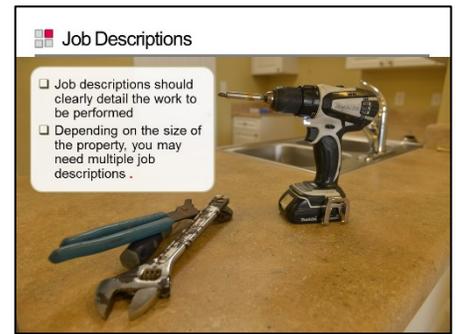
Display Reference: Maintenance Skills Checklist and Sample Job Descriptions slide.

Instructor Note

Hiring technicians begins with the job description.

Refer participants to Participant Workbook for the **maintenance skills checklist** and **sample job descriptions**. Review the Maintenance Skills Checklist for participants to self-identify their skill levels.

Refer to the CAM Human Resources Management Course for further information. A sample is provided for your students; these are not included here.



Hiring Maintenance Technicians

During the hiring process, you should:

- Use a Maintenance Skills Checklist during the interview to identify the candidate's skills
- Review the job description to ensure skills match the job to be performed
- Check applicants' references, criminal background, driving record
- Conduct drug tests

Maintenance Skills Checklist

	Skill	Experience level		
		None	Some	Expert
Electrical	Rewire shorted fixtures.			
	Replace circuit breaker.			
	Operate testing meter.			
Plumbing	Replace washers.			
	Replace faucet and handles.			
	Repair ball cock assemblies.			
	Install new ball cock assemblies.			
	Remove and replace trap.			
	Remove and install/reseal toilet.			
	Solder and replace pipes.			
Hot water heaters and circulating pumps	General maintenance.			
	Install water heater.			
	Oil circulating pump.			
	Install circulating pump.			
	Flush out water heaters.			
	Replace thermocouple, heating elements.			
Furnaces/wall heaters	Replace filters.			
	Clean filters.			
	Replace gas valve.			
	Check/test gas valve.			
	Replace fan motor.			
	Check/test pilot generator.			
Appliances	Install oven element.			
	Install stove element.			
	Rewire stove (partial).			
	Install oven timer.			
	Install oven thermostat.			
	Recharge refrigerant.			
Garbage disposal	Free jammed garbage disposal.			
	Replace gasket.			
	Disassemble and reassemble.			

	Rewire.			
	Install new disposal.			
Dishwasher	Remove impeller.			
	Install new pump.			
	Adjust timer.			
	Install new timer.			
	Install new dishwasher.			
Ceilings and walls	Repair wallboard and prepare for painting.			
	Install new wallboard.			
	Acoustic spraying.			
Flooring	Repair sub floor.			
	Replace sub floor.			
	Install tile.			
	Repair carpet with patches.			
Locks/Doors	Install deadbolt.			
	Replace lock cylinders.			
	Install a door jamb.			
	Hang new door.			
Pools	Backwashing.			
	Disassemble/assemble filter.			
	Clean – vacuum.			
	Replace heater.			
	Balance chemicals.			
	Replace shutoff valve.			
Sprinklers	Adjust sprinkler heads.			
	Replace sprinkler heads.			
Landscaping	Trim and prune.			
	Fertilizing.			
Glass/windows	Glass cutting.			
	Glass installation.			
Screening	Repair with patches.			
	Rescreen windows/patio doors.			

Job Descriptions

Maintenance Supervisor

Principal Objective of the Position: This position is the senior level maintenance person on site and is responsible for the overall maintenance of the site including planning, coordinating, budgeting, organizing and maintaining the physical needs of the site. This person will perform and direct other maintenance personnel in the repair and maintenance of HVAC systems, electrical/mechanical systems, plumbing, grounds, structural elements, mechanical equipment and refurbishment of apartments. The Maintenance Supervisor, under the direction of the Property Manager, generates satisfactory cash flow, positive resident relations and optimal resident retention.

Requirements:

Training/Education

- High School Diploma or equivalent
- Valid Driver's License and reliable private transportation
- EPA Designation/Certification

Experience/Skills

- Three years progressive maintenance/repair of HVAC, mechanical, electrical, plumbing and grounds maintenance in multi-family or commercial property
- Supervisory and training experience desired
- Good oral and written communication skills
- Math proficiency sufficient to assist in budget preparation, expense monitoring and other maintenance needs
- Knowledge of Equal Housing Opportunity (EHO) requirements and applicable program regulations

Special Requirements

- Ability to lift up to 100 pounds
- Ability to operate a two-axle motor vehicle
- Ability to maintain 24-hour, on-call status
- Ability to operate all necessary tools/equipment to perform the essential functions of the position
- Demonstrated experience and working knowledge of OSHA standards and other environmental safety standards
- Ability to perform a variety of duties in all types of weather

Essential Functions:

- Schedules, assigns and/or performs all maintenance functions, including responsibility to complete service requests within 24 hours and refurbish vacant units within five (5) business days or less

- Supervises, guides and schedules training, when necessary of all maintenance personnel in the maintenance and repair of HVAC systems, electrical systems, mechanical stems, plumbing, grounds, structural elements, motor vehicles and equipment
- Completes move-in and move-out inspections

Essential Functions continued:

- Supervises and/or performs all work related to maintenance of the property's curb appeal
- Implements cleaning and maintenance programs for grounds, office/clubhouse, common areas and work areas
- Schedules and performs regular inspections of all grounds, structures and systems and corrects problems, if any
- Supervises and provides or schedules training for employee use of company equipment and/or vehicle
- Assists in the maintenance portion of the overall property budget and ensures that all maintenance operating expenses remain within the existing budget
- Develop and implement an inventory control program along with a preventative maintenance program
- Responsible for expenditures within company guidelines
- Directs and supervises the day-to-day administrative operations of the maintenance functions including the scheduling and assignment of work, submission of reports and paperwork (invoices, time sheets, new hire/termination information, employee counseling and evaluations) and record keeping functions in a timely manner, including sanding/salting and smoke detector battery replacement logs.
- Purchases all maintenance supplies and materials in a cost-effective and efficient manner
- Prepares request for quotes and work scopes and follows company procedure in obtaining bids on purchases or work to be performed
- Conducts inspections of contracted work - checking for the quality and conformance with specifications and costs
- Submits timely reporting of any property loss on liability related incidents to the insurance company
- Submits timely reporting of any work related injuries to the workers' compensation insurance company
- Complies with all local, state and federal regulations as well as all company policies and procedures
- Completes other duties as assigned by supervisor

Assistant Maintenance Supervisor

Principal Objective of the Position: The *Assistant Maintenance Supervisor* assists the Maintenance Supervisor with the overall maintenance functions of the property. This includes repairs and maintenance of all mechanical, electrical equipment, plumbing fixtures, structural facilities, and grounds of the property. The Assistant Maintenance Supervisor works toward the common goals of satisfactory cash flow, positive resident relations, and optimal resident retention.

Requirements:

Training/Education

- High School Diploma or equivalent

- Valid Driver's License
- EPA Designation/Certification

Experience/Skills

- Minimum two years of demonstrated experience in the maintenance and repair of mechanical and electrical systems, plumbing and grounds keeping
- Good oral and written communication skills
- Knowledge of Equal Housing Opportunity (EHO) requirements and applicable program regulations

Special Requirements

- Ability to lift up to 100 pounds
- Ability to operate a two-axle motor vehicle
- Ability to maintain 24-hour, on-call status
- Ability to operate all necessary tools/equipment to perform the essential functions of the position
- Demonstrated experience and working knowledge of OSHA standards and other environmental safety standards
- Ability to perform a variety of duties in all types of weather

Essential Functions:

- Polices grounds as first task daily and throughout day, as needed
- Receives service work orders, performs required work within the established time frames to ensure service is within 24 hours
- Refurbishes vacant units within five (5) working days or less
- Completes painting, cleaning, grounds work, etc. as directed
- Completes move-in and move-out inspections, as directed by supervisor
- Operates various mechanical or electrical equipment or garden tools
- Completes preventative maintenance and housekeeping inspections of apartment units
- Assists with administrative duties, such as maintaining inventory control and making recommendations for purchases
- Is able to perform the duties of the Maintenance Supervisor in his/her absence
- Submits timely reporting of any property loss on liability related incidents to the insurance company
- Submits timely reporting of any work related injuries to the workers' compensation insurance company
- Complies with all local, state and federal regulations as well as all company policies and procedures
- Completes other duties as assigned

Groundskeeper

Principal Objective of Position: The Groundskeeper maintains the grounds of the property and works towards the common goals of satisfactory cash flow, positive resident relations and optimal resident retention.

Requirements:

Training/Education

- High School Diploma or equivalent
- Valid Driver's License preferred

Experience Desired

- Oral and written communication skills
- Knowledge of Equal Housing Opportunity (EHO) requirements and applicable program regulations

Special Requirements

- Ability to operate a two-axle motor vehicle
- Must be able to lift up to 100 pounds
- Ability to operate all necessary tools to perform the essential functions of the position
- Demonstrated experience and working knowledge of OSHA standards and other environmental safety standards
- Ability to perform a variety of duties in all types of weather

Essential Functions:

- Polices grounds as first task daily and throughout day, as needed
- Completes grounds work as needed
- Plants, prunes, weeds, seeds or removes foliage, shrubs, trees or grasses or other grounds work, as requested
- Operates various mechanical or electrical equipment or garden tools
- Completes other duties as assigned by supervisor

Skill Levels

Slide 44

Display Maintenance Technician Skill Levels slide.

Review Entry-Level skills.

Click and Review Mid-Level skills.

Click and Review Senior-Level skills.

Mention that this is only a sample of skills.

Ask “Do you have these skill sets on your property?”

Slide 45

Display Reference: Skill Levels slide.

Refer participants to the Participant Workbook for an unabbreviated **list of Maintenance Technician Skill Levels**.

Review content from Participant Workbook.

Maintenance Technician Skill Levels

<p>Entry-Level</p> <ul style="list-style-type: none"> • Basic knowledge of tools • Interior make ready • Basic electric • Communication and organizational skills • Willingness & ability to learn new skills • CPO 	<p>Mid-Level</p> <ul style="list-style-type: none"> • CAMT or equal • Troubleshooting • Lock & key security • Carpentry & drywall • Read and explain diagrams • EPA if required • Emergency on call • Plumbing: toilets, faucets, fixtures, etc. • Basic computer skills 	<p>Senior/Supervisor</p> <ul style="list-style-type: none"> • Budgeting skills • Building codes • Ability to train others • Research • Accountability and mentoring • Understand property management and leasing reports
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Reference: Skills Levels



See page the Participant Workbook for an unabbreviated **list of Maintenance Technician Skill Levels**.

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Maintenance Technician Skill Levels

This is a list of examples and is NOT a comprehensive list.

Entry-Level skills	Mid-Level skills	Senior/ Supervisory skills
<ul style="list-style-type: none"> • Basic knowledge of tools • Interior make-ready skills including minor painting • Basic electric: changing light bulbs, testing outlets and switches • Follows directions well and understands safety requirements • Good communication and organizational skills • Willingness and ability to learn new skills • Certified Pool/Spa Operator 	<ul style="list-style-type: none"> • CAMT or equal • Legibility in writing • Repair/replacement of building components • Troubleshooting • Familiarity with appliances • Lock and key security • Interior repair including carpentry and drywall • Electrical: ohms low, meter • Read and explain diagrams • EPA if required • Ability to perform emergency on-call visits • Plumbing: toilets, faucets, fixtures, drains • Basic computer skills 	<ul style="list-style-type: none"> • Budgeting skills • Building codes • Ability to train others • Research • Accountability and mentoring • Read and understand property management and hearing reports
Additional Considerations		
<ul style="list-style-type: none"> • Number of years and type of experience • Formal education • Training in industry designations • Experience working with contractors and suppliers • Ability to take/give directions • Ability to maintain schedules • Computer skills 	<ul style="list-style-type: none"> • Administrative skills such as: <ul style="list-style-type: none"> ○ Organizing and prioritizing ○ Time management ○ Record keeping ○ Communication skills • Professional attitude and appearance 	

Slide 46

Display Additional Hiring Considerations slide.

Click to show each point and **Review** additional points to consider during the hiring process.

Explain that CAMs should also administer technical skills tests.

Slide 47

Display Activity: Hiring a Maintenance Supervisor slide

Duration:20minutes

Instructions:

- **Divide** class into three groups.
- **Tell** participants to assume there is a vacancy for the Maintenance Supervisor position, and that there are three candidates for the position.
- **Assign** each group one of the Maintenance Supervisor profiles from the Participant Guide.
- **Tell** participants that using their Creekwood Property Information and Site Staffing Plan, they should review assigned profile and assess the strengths and weaknesses for this position.

Debrief:

- **Ask** “What are the strengths and weaknesses of each candidate?”
- **Vote** on the best candidate for the position; encourage debate.
- **Emphasize** that there is no one best candidate.

Sample answers:

- Jerry
 - Strengths: experienced, worked with smaller properties, has buying authority, responsible for inventory
 - Weaknesses: no experience with inventory, used to working by



Additional Hiring Considerations

- Years and type of experience
- Formal education
- Training and industry credentials
- Experience with contractors and suppliers
- Computer skills
- Administrative skills:
 - Organizing and prioritizing
 - Time management
 - Maintaining records and schedules
 - Communication skills
- Professional attitude/appearance .

Activity:Hiring a Maintenance Supervisor**Instructions:**

There is a vacancy for the Maintenance Supervisor position at Creekwood. In teams, use the Creekwood Property Information and Site Staffing Plan to assess the strengths and weaknesses of your assigned candidate:

- Jerry J
- Jody B
- Alex K

- himself, with owner not paying bills – may cut corners
- Jody
 - Strengths: started as maid, promoted, team-oriented leader, holds permits and license
 - Weaknesses: 3 companies in 12 years, struggling with stereotyping of a male maintenance tech, not HVAC certified yet
 - Alex
 - Strengths: 10 years' experience, enjoys learning, a sub for supervisor, tech-savvy, teaches others
 - Weaknesses: young in age despite experience, self-taught, still learning, rushed and robotic on the job

Maintenance Supervisor Candidate Profiles

Jerry J is a 54-year old experienced maintenance supervisor. He has worked in the industry for a small owner with multiple small properties for 18 years. He has complete buying authority and is responsible for parts and supplies that he keeps in his truck as he goes from property to property. He has not maintained a shop or physical inventory at any location. From time to time he has worked with a helper but is a one-man-show most of the time. The owner has a reputation in the community for not paying her bills and being slow on responding to maintenance. Jerry is often frustrated with this and at long last he has decided to make a change.

Jody B is a 37-year old female with a variety of experience in the industry. She has come up through the ranks, starting in the industry 12 years ago as a maid. She attended some leasing classes, but decided that wasn't for her. She has worked for three companies in her twelve years. She was promoted in the last two years to supervisor on a 300-unit property but has struggled with the staff accepting her as the lead. She is a team-oriented leader and likes to build consensus but gets frustrated when she is unsuccessful at earning trust. Maintenance staff turnover is up. The companies she has worked for have encouraged her education and she holds a variety of permits and licenses and is currently taking HVAC licensing classes at the local community college.

Alex K is a 28-year old maintenance technician on a 785-unit property. He has worked there for 3 years after leaving his cousin's busy home repair business. He had worked for 10 years with his cousin, starting while in high school and learning maintenance skills on the job. He is a strong technician and continually presses for new skills and learning. He steps into the supervisor role when the lead is absent or not around. The property manager sees him as a growing asset. At this community, computerized work orders and parts ordering are in place, which suits Alex just fine. He is tech-savvy and actively teaches others on staff how to adopt the new technology. While friendly, he stays focused on his work and some residents have mentioned he seems almost rushed and robotic when he is providing service.

Administering Service Requests

Service Request Process

Slide 48

Display the slide and **introduce** the topic.

Say that we looked at taking a service request. Now let's look at how we administer a service request.

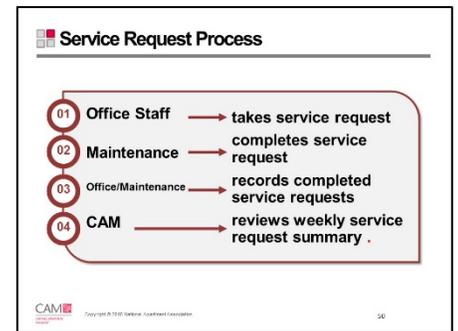
Explain that the Maintenance Supervisor administers daily and routine maintenance tasks and will know what work is appropriate for specific individuals. You oversee the entire process including weekly service request summaries.



Slide 49

Display Service Request Process slide.

Click to show each point and **Review** each step in the process.



Slide 50

Display Administering Service Requests—Purpose slide.

Explain that the Maintenance Supervisor oversees daily and routine maintenance tasks and will know what work is appropriate for specific individuals.

Explain that a CAM oversees the entire process including weekly service request summaries.

Click to Show each point and **Review** the purpose of overseeing the service request process using points on the slide.

Administering the service request process helps you:

- Assess each staff member's skills
- Match the work with the correct skill set
- Complete performance appraisals
- Plan preventative maintenance
- Identify trends
- Plan budgets

Service request forms can be completed on paper or electronically using maintenance software.

Service Request Summaries

Slide 51

Display Reviewing Service Requests slide.

Transition “Let’s take a closer look at your responsibilities.”

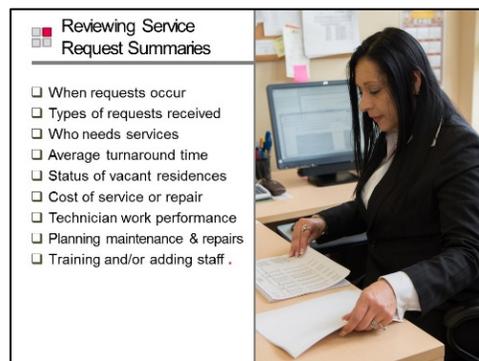
Click to Show each point and **List** the information a CAM will look for when reviewing service requests using points on the slide.



Slide 52

Display Reviewing Service Request Summaries slide.

List the information a CAM will look for when reviewing and summarizing service requests using points on the slide.



Slide 53

Display Reference: Service Requests slide.

Refer participants to the Participant Workbook for a summary of **Information in Service Request Summaries**.

Review content from Participant Workbook.

Reference: Service Requests



See the Participant Workbook for a summary of **Information in Service Request Summaries**.

Information in Service Request Summaries

The type of information the Service Request Summary should include if maintained for:

Each Maintenance Technician	The Property
<ul style="list-style-type: none"> • Name and job title • Number of service requests completed • Types of work performed • Total number of hours worked • Space for comments 	<p>Total number of service requests:</p> <ul style="list-style-type: none"> • Received • Completed and pending • That needed parts • Remaining from previous week <p>Total number of:</p> <ul style="list-style-type: none"> • Follow-up calls/inspections made • Emergencies handled • Make-readies cleaned, painted, repaired and completed • Preventative maintenance tasks completed • Hours worked

Slide 54

Display Service Request Summaries By Technician slide.

Explain that weekly service request summaries may be maintained for each service technician and for the whole property.

List the type of information the service request summary should include if maintained for each maintenance technician using points on the slide.

Slide 55

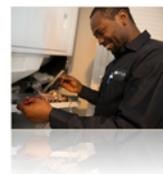
Display Service Request Summaries By Property slide.

List the type of information the service request summary should include if maintained for the property using points on the slide.

Note that weekly service request summaries should be maintained for each service technician and the property if possible. This is more feasible using maintenance software.

Service Request Summaries By Technician

- Name and job title
- Number of service requests completed
- Types of work performed
- Total number of hours worked
- Space for comments .



Service Request Summaries By Property



- Total number of requests:**
- Received
 - Completed and pending
 - That needed parts
 - From previous week
- Total number of:**
- Follow-up calls
 - Inspections made
 - Emergencies handled
 - Make-readies completed
 - Preventative maintenance tasks completed
 - Hours worked .

Service Request Software

Slide 56

Display Service Request Software slide.

Explain that many properties use software that records work order assignments by type and employee.

Ask how many participants are using this software.

List the information captured using points on the slide.

Note that several programs can link to key drawers. They make it mandatory to enter codes and descriptions before unlocking the drawer.

Slide 57

Display Reference: Service Requests (continued) slide.

Refer participants to the Participant Workbook for more information about the **Service Request Process**, information about **Reviewing Service Requests and Summaries**, and a **Service Request Template**.

Review content from Participant Workbook.

Service Request Software



Service request software can track:

- Who is assigned what task(s)
- Number of assignments given in a day
- Number of assignments completed
- How long each assignment took
- How many call backs were made .

Reference: Service Requests (continued)



See the Participant Workbook for:

- **Service Request Process**
- **Reviewing Service Requests and Summaries**
- **Service Request Summary Template .**

Service Request Process

1. Office staff takes a service request.
2. Maintenance staff completes the service request.
3. The CAM reviews & summarizes service requests.
4. The CAM reviews weekly service request summary.

Reviewing Service Requests and Service Request Summaries

When reviewing Service Requests and Service Request Summaries, you will look for the following:

Reviewing Service Requests	Reviewing Service Request Summaries
<ul style="list-style-type: none"> ● Preventative maintenance needs ● Possible capital expenditures ● Trends such as: <ul style="list-style-type: none"> ○ Large number of requests in a particular unit ○ Patterns of repeated requests of a specific type ○ Construction defects ○ Deteriorated infrastructure ○ Poor workmanship on previous service ● Budget implications ● Duration of typical repairs 	<ul style="list-style-type: none"> ● When requests occur ● Types of requests received ● Who needs services ● Average turnaround time ● Status of vacant residences ● Cost of service or repair ● Technician work performance records ● Planning maintenance & repairs ● Training and/or adding staff

Service Request Summary Template

Property: _____

Date: _____

Employee	Title	# Work Orders Completed	Total Time	Comments
----------	-------	-------------------------	------------	----------

Work Requests

SERVICE REQUESTS

Total received for week.

Total completed.

Pending from previous week.

Pending from current week.

Holding for parts.

Total all work requests.

Emergencies Handled

MAKE-READY

Total painted.

Total maintenance completed.

Total cleaned.

Total completed.

Total Vacancies

Service Request Follow-up

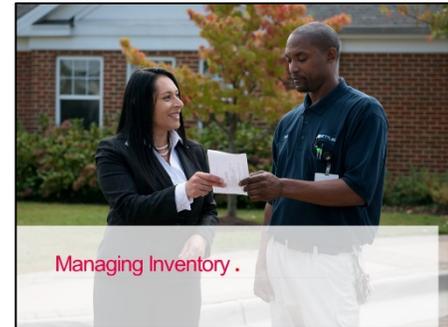
Apt #	Resident	# of SRs	Follow-up Date	Response/Result
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Managing Inventory

Slide 58

Display the Managing Inventory slide and **Introduce** the topic.

Say Let's look at how important your property inventory is when completing service requests.



Standard Inventory

Slide 59

Display Maintaining Standard Inventory – Purpose slide.

Define Standard Inventory :

- Items that are used frequently

Click to show each point and **Review** information about maintaining standard inventory.

Maintaining Standard Inventory – Purpose

Standard Inventory includes items that are used frequently

- When tools or parts are available, maintenance and repair efficiency increases
- Purchasing materials and managing inventory impacts Net Operating Income .

A CAM's Role

Slide 60

Display A CAM's Role slide.

List areas in which a CAM will work with their Maintenance Supervisor.

Click and Explain that as always, it is ultimately the CAM's responsibility to ensure inventory is managed and maintained well.

A CAM's Role

- Ensure the Maintenance Supervisor:
 - Maintains and manages an inventory of frequently used parts and supplies
 - Balances the expense of inventory with timing of a need

YOU are ultimately responsible for the maintenance and management of inventory

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Costs

Slide 61

Display Keeping Costs Down slide.

Explain that product knowledge and planning can save time and money.

Click and Review each point on the slide. **Provide** examples as needed.

Keeping Costs Down

To keep costs down:

- Have adequate product knowledge
- Develop an inventory purchasing list
- Understand each item's role in everyday maintenance
- Know maintenance terminology and industry/common names
- Shop comparatively .

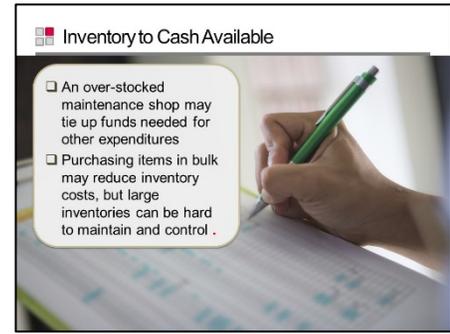
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Slide 62

Display Inventory to Cash Available slide.

Explain the relationship of inventory to cash available.

- Example: Keeping large appliances is not feasible if space is limited.



Slide 63

Display Comparative Shopping slide.

Explain that a CAM may work with the Maintenance Supervisor to develop an inventory purchasing list, but must understand the items and their role in everyday maintenance.

Click to Show each point and **Review** the qualities of each grade of tools, supplies or parts:

- Basic
- Mid-grade
- Heavy duty

Click to Show each point and **Review things** to consider when choosing the quality grade of an item.

Reinforce this concept by explaining a CAM’s purchase decisions vary based on circumstances.

Examples include:

- An owner plans to improve the property at a minimal cost and then sell the property.
- The goal is to upgrade and enhance the property for a long-term hold.

Click and Explain that a CAM should always buy the quantity and size that works best for the property.

List possible constraints.

Comparative Shopping

Typical grades in tools, supplies, or parts:

01 Basic <ul style="list-style-type: none"> • Least expensive • Short life span 	02 Mid-grade <ul style="list-style-type: none"> • More expensive • Longer life span • More durable 	03 Heavy duty <ul style="list-style-type: none"> • Most expensive • Long life span • Most durable
--	--	---

To decide, consider the following:

- Short and long-term costs
- Frequency of repurchase
- Maintenance goals
- Best value
- Current inventory
- Previously used brand
- Item’s useful life in general

Always buy the quantity and size that works best for you. Constraints may include:

- Small shop area
- Small budgets
- More contractor work than in-house .



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Slide 64

Display Reference: Tool Grades slide.

Refer participants to the Participant Workbook for a guide on **Tool Grades: Comparative Shopping**.

Review content from Participant Workbook.

 **Reference:** Tool Grades



See the Participant Workbook for a guide on **Tool Grades: Comparative Shopping**.

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Tool Grades: Comparative Shopping

Always buy the quantity and size that works best for you. Constraints may include:

- Small shop area
- Small budgets
- More contractor work than in-house

Basic	Mid-grade	Heavy duty
<ul style="list-style-type: none"> • Least expensive • Short life span 	<ul style="list-style-type: none"> • More expensive • Longer life span • More durable 	<ul style="list-style-type: none"> • Most expensive • Long life span • Most durable

To make purchasing decisions for inventory, consider the following:

- Short and long-term costs
- Frequency of repurchase
- Maintenance goals
- Best value
- Current inventory
- Previously used brand
- Item’s useful life in general

Slide 65

Display Activity: Making Inventory Decisions slide.

Objective: Practice using analytic skills necessary to make purchasing decisions

Duration: 15minutes

Instructions:

- **Divide** the class into three groups.
- **Assign** a scenario from the Participant Workbook (also provided below) to each group.
- **Instruct** participants to answer the questions in the selected scenario.
- **Lead a discussion** about weighing the options of the decision.

Answers should include:

- Scenario 1:
 - Stock daily make-ready items and frequent repair parts
 - Ask vendors and suppliers for specials and bulk pricing
 - Consider purchasing in bulk with sister properties
 - Watch for sales on energy efficient items
 - Convert units to greener fixtures at make-ready or renewal to slow the expense
 - Work with leasing to sell “green”
- Scenario 2
 - Price an insulated larger shed to create a shop
 - Add shelving to shed and to breakroom area
 - Ask suppliers to stock inventory that you buy for you

Activity: Making Inventory Decisions**Instructions:**

1. In teams, review your assigned scenario
2. Weigh the options available
3. Answer the questions and make a purchase decision based on your scenario .

- Recheck and minimize your list of regularly used parts and supplies
- Buy only one of larger items that can't be stored.
- Scenario 3
 - Insist on basic repair and make-ready supplies (to keep units rented!)
 - Buy only one of more expensive parts/supplies to have on hand
 - Keep posted with manager on remaining budget as you order, re-evaluated preventive maintenance program—stick to only basics
 - Research cost effective substitutes with suppliers

Debrief:

- **Reinforce** key learning points:
 - Stock should not sacrifice cash available
 - Inventory management software is helpful if the functionality is worth the cost
 - Product standards should be considered, but costs should be controlled
 - Preferred vendor lists are a helpful option
 - Importance of having emergency supplies

Scenario 1

You recently took over management of a property that had virtually no inventory in place. Basic parts and supplies need to be purchased. The new owner has restricted the amount of money she will commit to this effort – the costs of purchase and a few surprise conditions have made money tight. The property will undergo a retrofit focusing on energy-saving fixtures and green materials. Your ability to buy these items will depend greatly on the staff's ability to lease apartments selling the green aspect and getting top market rents. Your maintenance team which you brought with you is experienced and has made inventory purchases before. What supplies would you buy first and how would you build an inventory of energy saving components while on a strict spending limit?

Scenario 2

Your 30-year old asset has been running fairly smoothly. It requires ongoing maintenance and a reliable inventory of frequently used parts and supplies. This older property never had a stand-alone shop. There is an outbuilding that houses exterior maintenance items and could be cleaned out to offer a little more space, but the shop and inventory have been kept in a down-unit. The owner has now authorized funds to get that down unit back on line since the markets are so good and it can be rented. Consequently, you need to relocate and re-think your supplies and inventory. The office building onsite offers a little space in the break room area, but not enough for bins and a work bench. A steady supply of basic materials is essential, but what options work best now?

Scenario 3

Your property is for sale. The owners have assured everyone that they will be offered nearby transfers and stay with the firm. This has taken a lot of fear away!! The challenge is, now that the property is listed, the owner has cut back on purchasing and maintaining a working inventory AND also backed off the quality-level of replacement parts and supplies, including paints, cleaning supplies and fixtures. The financial statement will focus on strong NOI and that means reducing expenses. How can you help in this effort without finding yourself and your team constantly telling residents “the part is on order”? What will you say to residents who notice the smaller or lower quality fixture or bulb you use?

Storing Tools and Supplies

Slide 66

Display Storing Tools and Supplies slide.

Click to Show each point and **Review** guidelines for storing tools and supplies.

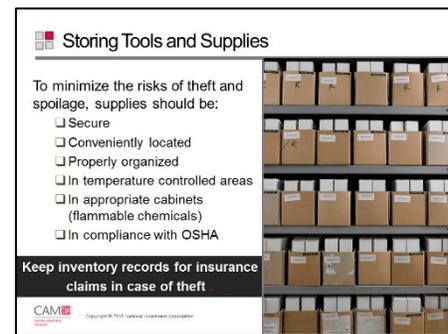
Explain that proper care and storage of tools and supplies is essential.

- Expensive paint will be wasted if the cans are sealed poorly or not stored properly.
- A new hand tool won't provide value if it is left out in the rain.

Review points about storage areas that will minimize the risks of theft and spoilage.

- Temperature controlled areas refer to paint, caulk, and other supplies sensitive to weather.
- Appropriate cabinets for flammable chemicals refer to items such as oxyacetylene for welding torches.

Click and Note a CAM should keep inventory records so that the information needed to submit a claim to the insurance company in case of theft is readily available.



Suppliers

Slide 67

Display Relationships with Suppliers slide.

Explain that a CAM must ensure good working relationships with suppliers. Relationships are:

- Especially helpful in emergency situations and when special products must be found.
- Often handled by the Maintenance Supervisor or Service Manager.

Click to Show each point and **Review** the benefits of having good relationships with suppliers.

Note that although trusting products and prices may save time, CAMs should also get a second estimate on costs, services, etc. when needed.

Slide 68

Display Vendor Programs slide.

Explain that many property management companies and owners have national buying programs with certain vendors and suppliers.

Ask how many participants use these.

Click and explain that vendor programs may:

- Require certain levels of purchases to guarantee lower prices
- Have rebates tied to required spending
- Include a catalog of approved parts and supplies

Relationships with Suppliers/Vendors/Contractors



Business relationships with supplier offers many benefits. Suppliers can:

- Save you time because you trust their products and prices
- Make suggestions because they know your purchasing history and needs
- Provide delivery services
- Measure and install products .

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Vendor Programs

Vendor programs allow you to buy items at lower prices and may:

- Require certain levels of purchases to guarantee lower prices
- Have rebates tied to required spending
- Include a catalog of approved parts and supplies .



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Slide 69

Display Vendor Programs and You slide.

Click to Show each point and **Review** information about how a CAM manages vendor programs.

Vendor Programs and You

- Stay abreast of purchasing requirements, pricing structures and availability
- Purchase products that are in the best interest of the property
- Avoid buying items just because they are on sale that week .

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Maintenance Software

Slide 70

Display Maintenance Management Software slide.

Click to Show each point and **Review** the functionality of maintenance management software.

Maintenance Management Software

Maintenance management software helps:

- Generate/track work orders
- Schedule preventive maintenance
- Produce inventories
- Trigger reorders
- Categorize expenses
- Analyze productivity
- Provide histories for property components

In all cases:

- Maintain records to monitor purchases
- Keep warranties
- Plan future purchases .

Review the following key points:

- These programs require upfront training but can be successful in lowering maintenance expense and improving property productivity.
- Many of these software providers are members of the local and national apartment associations and can help discuss needs.

Click and Explain that in all cases a CAM should maintain good records to monitor purchases, keep warranties, and plan future purchases.

Slide 71

Display and Review Emergency Supplies slide.

Explain the importance of having emergency supplies as part of the inventory.

Click and Review key items to have in stock and include in the property emergency plan.

Emergency Supplies

Emergency items should be listed in the property emergency plan.
Depending on the property type, items might include:

- Plywood to board up openings
- Visqueen to protect roofs
- Fire Extinguisher
- Generator
- Caution tape
- Temporary fencing .

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Emergency Supplies

Contractors and Vendors

CAM's Role

Slide 72

Display the slide and **introduce** the topic.



Slide 73

Display and Review A CAM's Role slide.

Click to Show each point and Review a CAM's role in entering and signing contracts.

<p>A CAM's Role</p> <p>You may be actively involved in identifying and selecting a contractor.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Understand your authority level when entering into a contract on an owner's behalf <input type="checkbox"/> The management agreement provides detailed information about who can sign contracts. <p><small>CAM 2016 Copyright © 2016 National Apartment Association</small></p>	
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Slide 74

Display Contractors and Vendors slide.

Define Vendor:

A vendor is a third party company that offers products and/or services to the maintenance function. A service vendor may perform regularly recurring weekly or monthly maintenance tasks.

Click and Define Contractor:

A contractor is a person or company hired to perform specific services or complete specific jobs not performed by your maintenance team.

Tell the participants that many companies use these two identifiers interchangeably

<p>Contractors and Vendors</p>	
<p>Vendor</p> <p>A vendor is a third party company that offers products and/or services to the maintenance function. A service vendor may perform regularly recurring weekly or monthly maintenance tasks.</p>	<p>Contractor</p> <p>A contractor is a person or company hired to perform specific services or complete specific jobs not performed by your maintenance team.</p>
<p><small>Many companies use these two identifiers interchangeably</small></p>	
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Slide 75

Display Preferred Vendor Programs slide.

Click to reveal information about preferred vendors

Ask students if they work with a preferred vendor list.

Slide 76

Display Reasons to Hire a Contractor slide.

Explain that ultimately a CAM should hire a contractor when:

- In-house staff cannot do the task
- It is more cost effective

Slide 77

Display Typical Contractor and Vendor Services slide.

Transition: let's look at some typical areas where you might use a contractor or regularly returning vendor."

Click and List examples where a CAM might use a contractor or vendor

Slide 78

Display Reference: Hiring a Contractor or Vendor slide.

Refer participants to the Participant Workbook for a list of **Reasons to Hire a Contractor or Vendor**, including a summary of the **Benefits to Hiring a Contractor or Vendor**.

Review content from Participant Workbook.

Preferred Vendors Programs



Your property may have preferred vendors you're required to use

- May provide rebates and/or special discounts
- Ensure everyone uses specified vendors .

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Reasons to Hire a Contractor

Staff Unable

- Shortage of staff
- Specialized skills
- Specialized equipment

Save Money

- Cheaper materials or supplies
- Lower total cost of labor

Need Documents

- Licenses or permits required
- Defer liability
- Obtain a warranty .



Typical Contractor and Vendor Services

Contractors may be used for single-event large jobs or recurring weekly or monthly maintenance:

- Pool maintenance
- Landscaping
- Pest control
- Interior painting
- Housekeeping
- Carpet maintenance
- Snow removal .



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Reference: Hiring a Contractor or Vendor



See the Participant Workbook for a list of **Reasons to Hire a Contractor**, including a summary of the **Benefits to Hiring a Contractor** .

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Contractors

Reasons to Hire a Contractor or Vendor

Staff Unable to Complete Task	Save Money	Need Documentation
<ul style="list-style-type: none"> ● Shortage of staff <ul style="list-style-type: none"> ○ Illness ○ Vacation ○ Termination ● Specialized skills <ul style="list-style-type: none"> ○ Parking lot repairs/resurfacing ○ Roofing ○ Landscaping ● Specialized equipment <ul style="list-style-type: none"> ○ Backhoes ○ Welding equipment 	<ul style="list-style-type: none"> ● Cheaper materials or supplies <ul style="list-style-type: none"> ○ Purchased wholesale or bulk ● Lower total cost of labor <ul style="list-style-type: none"> ○ Special insurance ○ Licensing fees ○ Payroll taxes 	<ul style="list-style-type: none"> ● Licenses or permits required <ul style="list-style-type: none"> ○ Electrical work ○ Plumbing work ● Defer liability ● Obtain a warranty
Benefits to Hiring a Contractor or Vendor		
<ul style="list-style-type: none"> ● Specialized skills and tools ● Quality-based experience ● Avoiding expenses for purchasing and maintaining specialized equipment ● The maintenance staff can continue to meet daily service needs and preventative maintenance schedule; not distracted from day-to-day tasks ● The contractor handles required licenses, permits and insurance ● Safeguards warranty issues ● It may provide faster, more accurate, timely, and complete work product 		

Slide 79

Display Benefits to Using Contractors slide.

Explain that using a contractor may provide a faster, more accurate, timely, and complete work product.

Review examples on the slide.

Ask “What *disadvantages* might you encounter when hiring a contractor?”

Sample answers:

- Quality of work may vary
- Contract disputes
- Delays in getting work complete because of contractor scheduling

Slide 80

Display Finding a Contractor slide

Click to Show each bullet and **List** ways to find a contractor.



Slide 81

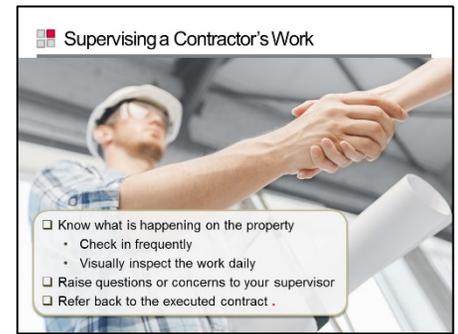
Display Supervising a Contractor's Work slide.

Explain that a CAM and the Maintenance Supervisor need to decide how a contracted job will be supervised. Most often, the Maintenance Supervisor assumes this responsibility.

Click to Show each point and **Explain** that this is an excellent opportunity to learn more about a specific project. A CAM should:

- Know what is happening on the property
- Check with the contractor frequently
- Visually inspect the work daily
- Raise questions or concerns to your supervisor
- Have a copy of the contract to ensure work is being done as outlined in the contract

This topic is also addressed in the Risk Management module.



Bidding Process

Slide 82

Display The Bidding Process slide.

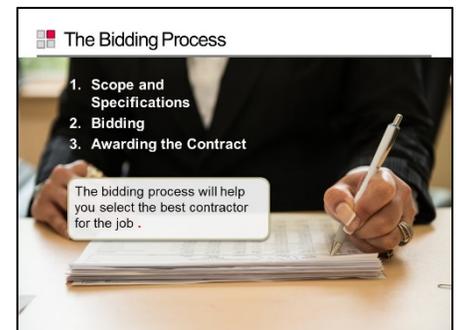
Explain that contractors:

- Are generally selected using a bidding process
- Require a legal contract before work begins

Click and Review the bidding process.

Click and Explain that a CAM will use the bidding process to select the best contractor for the job.

This topic is also addressed in the Legal Responsibilities module.



Scope

Slide 83

Display Step 1: Scope and Specifications slide.

Explain that a CAM must define scope and specifications before requesting bids.

Define Scope:

- A general description of the work to be performed under a contract or subcontract to complete a project

Ask participants to describe typical specification for one of the following examples:

- Complete exterior painting of all buildings
- Re-roof all 3-story buildings on the property.

Click and Define Specifications:

- Descriptions of specific materials, equipment, and construction methods to be used on a project
- Must contain a detailed job specification
 - The purpose of the job specification is to clearly define the expectations so the contractor knows what to do and you get what you want

Click and Emphasize that accurate and complete job specifications are the most important part of the bidding process. Incomplete or inaccurate specifications will cause problems.

1. Scope and Specifications

Scope	Specifications
<p>A general description of the work to be performed under a contract or subcontract to complete a project</p> <ul style="list-style-type: none"> □ The scope should be accompanied by specifications 	<p>Descriptions of specific materials, equipment, and construction methods to be used on a project</p> <ul style="list-style-type: none"> □ A detailed description of what, how, when, and where

Accurate and complete specifications are the most important part of the bidding process.

Specifications

Slide 84

Display Step 1: Scope and Specifications slide.

Explain that a CAM must present all bidders with the same specifications to get comparable results.

Recommend hiring a consultant to determine the scope of the work.

Slide 85

Display Reference: Bidding slide.

Refer participants to the Participant Workbook for:

- A summary of **The Bidding Process**
- A summary of **Scope and Specifications**
- An unabbreviated list of specifications

Review content from Participant Workbook.



Reference: Bidding



See the Participant Workbook for:

- A summary of **The Bidding Process**
- A summary of **Scope and Specifications**
- An unabbreviated list of specifications

The Bidding Process

The bidding process will help you select the best contractor for the job.

Step 1: Scope and Specifications	Step 2: Bidding	Step 3: Awarding the contract
<p>Identify the scope and specifications for the project.</p> <ul style="list-style-type: none"> Outline specific tasks & deadlines. Write detailed job specifications. Always present all bidders with the same specifications to get comparable results. Accurate and complete job specifications are the most important part of the process. 	<p>Solicit bids from at least three separate contractors.</p> <ul style="list-style-type: none"> Do not share details with other contractors who may wish to bid. Advise staff to keep information confidential. Set the standard for quality. Look for the best results, not just the least expensive; the cheapest is not necessarily the best. 	<p>Always check references before accepting a bid or signing a contract.</p> <ul style="list-style-type: none"> Check local references so you can visually inspect the work. Check the Better Business Bureau for complaints.

Scope and Specifications

Scope	Specifications																
<p>A general description of the work to be performed under a contract or subcontract to complete a project</p> <ul style="list-style-type: none"> It must contain detailed job specifications. <ul style="list-style-type: none"> The job specification purpose is to clearly define expectations so a contractor knows what to do and what you want. Always present all bidders with the same specifications to get comparable results. Consider hiring a consultant to determine the scope of the work. 	<p>Descriptions of specific materials, equipment, and construction methods to be used on a project</p> <ul style="list-style-type: none"> They are a detailed description of what, how, when, and where. They must be accurate and complete. They are the most important part of the bidding process. <p>Detailed specifications include:</p> <table border="1"> <tr> <td>Detailed description work</td> <td>Start and end of a work day</td> </tr> <tr> <td>Preparation and application</td> <td>Clean up and how often</td> </tr> <tr> <td>Specific materials and equipment</td> <td>Proper removal and disposal of old materials</td> </tr> <tr> <td>Location of the job – maps & site plans may be needed</td> <td>How to handle problems found during work</td> </tr> <tr> <td>Timeframe for completion</td> <td>List of references</td> </tr> <tr> <td>Licenses and permits</td> <td>OSHA requirements</td> </tr> <tr> <td>Insurance, warranties, guarantees</td> <td>Fair Housing training</td> </tr> <tr> <td>Payment schedules</td> <td>Contacts: phone, text, email</td> </tr> </table>	Detailed description work	Start and end of a work day	Preparation and application	Clean up and how often	Specific materials and equipment	Proper removal and disposal of old materials	Location of the job – maps & site plans may be needed	How to handle problems found during work	Timeframe for completion	List of references	Licenses and permits	OSHA requirements	Insurance, warranties, guarantees	Fair Housing training	Payment schedules	Contacts: phone, text, email
Detailed description work	Start and end of a work day																
Preparation and application	Clean up and how often																
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Location of the job – maps & site plans may be needed	How to handle problems found during work																
Timeframe for completion	List of references																
Licenses and permits	OSHA requirements																
Insurance, warranties, guarantees	Fair Housing training																
Payment schedules	Contacts: phone, text, email																

Bidding

Slide 86

Display Bidding slide.

Recommend soliciting bids from at least three separate contractors.

Click to show each point and **Review** bidding information.

Emphasize:

- This is an opportunity to set the standard for quality.
- Look for the best results, not just the least expensive.

2. Bidding

- Solicit bids from at least three separate contractors
- Keep bids confidential
 - Do not share details with other contractors
 - Advise staff to keep information confidential
- The cheapest contractor is not necessarily the best

This is your opportunity to set the standard for quality. Look for the best results, not just the least expensive.

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Awarding the Contract

Slide 87

Display Awarding the Contract slide.

Advise participants to always check references before accepting a bid or signing a contract.

Click to show each point and **Review** tips for checking references.

3. Awarding the Contract

Always check references before accepting a bid or signing a contract

- Check local references so you can visually inspect the work
- Check the Better Business Bureau for complaints.

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Contracts

Slide 88

Display Contracts slide.

Define Contract:

- A formal and legally binding agreement made in writing

Explain that a well-written contract protects you, your employees, the management company, and the property owner.

Click to Show each point and **Review** information about contracts.

Note that a company supervisor or owner usually signs most contracts. This topic is also addressed in the Legal Responsibilities module.

Contracts

A contract is a formal and legally binding agreement made in writing.

- Protects you, your employees, the management company, and the owner
- Subject to local, state, and federal laws
- Have an attorney review contracts before they are signed to ensure compliance and reduce risk
- Company policy should identify who negotiates and signs a contract.

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Slide 89

Display slide.

Ask “What should you include in a contract or contract documents?”

Refer participants to the matrix in their Participant Workbook and **Discuss** the components of a contract.

Slide 90

Display Reference: Contracts slide.

Refer participants to the Participant Workbook for a summary of **What to Include in a Contract**.

Review content from Participant Workbook.



Reference: Contracts



See the Participant Workbook for a summary of **What to Include in a Contract**.

What to Include in a Contract

A contract is a formal and legally binding agreement made in writing. All contracts are subject to local, state, and federal laws. An attorney should review contracts before they are signed to ensure compliance and reduce risk. A CAM may not be the person to sign the contract; company policy should identify who negotiates and signs the contract; a company supervisor or owner may need to sign.

Included in a Contract	Included in Vendor Contracts
<ul style="list-style-type: none"> • The scope and nature of the work to be performed • Detailed specifications • Start and completion dates • A remedies and cancellation clause • A hold-harmless clause • Proof of workers' compensation • Proof of comprehensive general liability insurance • Total cost of work • A payment schedule, outlining retainage fees * • List of subcontractors, if any, being used on the project • Performance penalties, if applicable <p>*Note: A retainage fee is a percentage of the contractor's payment (usually 10%) that is held by the property or the management company for a specific time period (usually 30 days) after the job is completed. The purpose is to guarantee the completion of the work and cover any defects in the workmanship.</p>	<ul style="list-style-type: none"> • Detailed specifications • Does the vendor supply goods alone, or goods and services? • Who will get the bill – management or owner? • Will payments be processed from invoices or statements? • Will payment be made within 30 days? • Who has to approve invoices? Are there approval limits? • Will employees be prohibited from accepting gifts or favors from vendors? • Will vendors be required to complete a W-9 and submit a valid certificate of insurance prior to beginning work? • Will the vendor be responsible for damage he causes, including water intrusion that causes mold? • Will the vendor be held responsible for screening its employees & their conduct while on your property? • Will vendors be required to meet your fair housing, drug-free, weapon-free workplace policies? • Will vendors be asked to use utilities prudently? • Contact information • Communication protocol

Minimizing Risk

Slide 91

Display Contract Components that Minimize Risk slide

Explain that contracts are used to minimize risk to the property, its owners, and employees.

List the ways to reduce risk in a contract:

- Lien waivers
- Multiple payee payments
- Payment and performance bonds
- Certificates of insurance

Click and Emphasize the key point on the slide.

Slide 92

Display Reference: Contract Components that Minimize Risk slide.

Refer participants to the Participant Workbook for descriptions and uses for various methods for **Reducing Risk with Contractors**.

Review content from Participant Workbook.



Reference: Contract Components that Minimize Risk



See the Participant Workbook for descriptions and uses for various methods for **Reducing Risk with Contractors**.

Reducing Risk with Contractors

Formal vendor policies should be set and a list of vendors that will be providing materials should be included with the contract documents.

	Description	When/Why it is used	Paperwork
Lien Waivers	A signed and notarized document that waives all claims against the property or the management company from the contractor, his employees, his subcontractors and his material suppliers	To ensure the contractor, vendor, their employees, their subcontractors and their material suppliers cannot file a claim, lawsuit or lien (legal claim), against the property for non-payment	Requiring lien waivers from subcontractors working for the general contractor is a good business practice. <ul style="list-style-type: none"> Local laws may require lien waivers to be filed with county or city agencies.
Multiple Payee Payments	Making disbursement checks payable to both the contractor and his supplier	Ensures both parties are paid, protects against mechanical or material liens on a property and prevents future disputes <ul style="list-style-type: none"> May be used after contract is signed when contractor is unable to meet obligations to vendors 	This is outlined in the draw schedule. <ul style="list-style-type: none"> If used after a contract is signed it is not included in the draw schedule.
Payment & Performance Bonds	A bond issued by an insurance company or bank to guarantee satisfactory completion of a project	Companies may require the contractor to furnish bonds ensuring both the price and the performance of his work <ul style="list-style-type: none"> Usually required by lenders or contractors in new construction Are required in some states for large jobs 	Copies of the bonds are attached to the contract, if required.
Certificates of Insurance	Proof of Insurance for liability and Workers' Compensation Insurance for contractor employees	Protects the property, owner, & management company from liability due to injury claims or property damage caused by contractor negligence <ul style="list-style-type: none"> Sometimes an owner may obtain insurance on behalf of a contractor and add the expense to the total cost of the contract. 	Third-party service companies can track certificates to ensure accuracy and manage expiration dates for insurance coverage.

Lien Waivers

Slide 93

Display Lien Waivers slide

Define a Lien Waiver:

- A signed and notarized document that waives all claims against the property or management company

Click to Show each point and Review information about Lien Waivers:

- Ensures the contractor, his employees, his subcontractors and suppliers cannot file a claim against the property
- Good practice to require lien waivers from vendors or subcontractors

Example: Without a lien waiver, a vendor or subcontractor could claim nonpayment against the property even if the property paid the contractor in full and file a "mechanic's lien" against the property.

Slide 94

Display Multiple Payee Payments slide.

Define a Multiple Payee Payment:

- Making disbursement checks payable to both the contractor and supplier

Click to Show each point and Review information about Multiple Payee Payments:

- Ensure both parties are paid
- Prevent future disputes



Multiple Payee Payments

Payment and Performance Bonds

Slide 95

Display Payment and Performance Bonds slide.

Define a Payment and Performance Bond:

- A bond issued by an insurance company or bank to guarantee satisfactory completion of a project

Click to Show each point and **Review** information about Payment and Performance Bonds:

- Usually required by lenders or general contractors for new construction
- Required in some states for large jobs



Certificates of Insurance

Slide 96

Display Certificates of Insurance slide.

Explain that it is often the CAM's responsibility to obtain the Certificate of Insurance.

Define Certificates of Insurance:

- Proof of insurance for liability and workers' compensation insurance for contractors

Click to Show each point and **Review** information about Certificates of Insurance:

- Protect the property, owner, and management company from liability due to injury claims or property damage caused by contractor negligence
- Third-party service companies can track certificates to ensure accuracy and manage coverage expiration dates.
- Use a contractor that can provide adequate insurance coverage.

Note that sometimes, if the situation warrants, the property owner may obtain insurance coverage on behalf of the contractor and add the expense to the total cost of the contract.



Inspections

Slide 97

Display the slide and **introduce** the topic.

Explain that property inspections are the ongoing evaluation of the condition of the buildings, grounds, and common areas on a property. Property inspections provide excellent training opportunities for staff.



Slide 98

Display Property Inspections slide.

Define Property Inspections

- Ongoing evaluation of the condition of buildings, grounds and common areas on a property

Click and Explain that a CAM should inspect the property regularly: at least once a month.

Click and Explain that checklists provide a written record to compare to previous inspections.

Click and Explain that photos help record inspections and “incidents.”

Click to Show each point and **Review** the remaining key points on the slide.

Note that inspections provide excellent training opportunities for staff.



Slide 99

Display Reference: Inspection Types slide.

Refer participants to the Participant Workbook for a summary of all inspection types:

- **Exterior and Interior Inspections**
- **Move Out and Make Ready Inspections.**

Review content from Participant Workbook.

 **Reference:** Inspection Types

See the Participant Workbook for a summary of inspection types:

- **Exterior and Interior Inspections**
- **Move Out and Make Ready Inspections .**

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Exterior and Interior Inspections

Maintenance includes inspecting, repairing, or replacing items to keep building exteriors or interiors in excellent condition.

Exterior Inspections	Interior Inspections
<ul style="list-style-type: none"> ● Property grounds ● Stairways, balconies, breezeways ● Utility buildings ● Trash & mail areas ● Carports & garages ● Pools, ponds, water features ● Parking lots & sidewalks ● Tennis courts, playgrounds, spas, volleyball & picnic areas ● Fences and lighting ● Areas with ADA & FHA implications 	<ul style="list-style-type: none"> ● Office & clubhouse ● Interior hallways ● Cleaning & janitorial areas ● Trash rooms and storage areas ● Amenities & common areas <ul style="list-style-type: none"> ○ Business centers ○ Fitness centers ○ Laundry rooms ● Occupied units ● Units to 'make ready'

Move Out and Make Ready Inspections

Move Out Inspections	Make Ready Inspections
<p>Each unit must be inspected at move-out to determine the scope of the make-ready process and identify:</p> <ul style="list-style-type: none"> ● Potential charges from previous residency <ul style="list-style-type: none"> ○ Compare condition against move-in inspection ● Possible physical damage ● Working condition of major equipment <ul style="list-style-type: none"> ○ Turn on appliances, exhaust fans, disposal, ○ Check required components of detectors, locks, doors, windows, etc. ● Retrofit or rehab work needed ● Contractor involvement and the scope of work ● Preventative maintenance needed 	<p>Inspecting units to ensure market readiness. This includes:</p> <ul style="list-style-type: none"> ● Pre-inspection to identify maintenance and make-ready tasks needed ● Post-inspection to ensure work was completed and the unit is ready to show ● Work with your maintenance and housekeeping staffs to develop sound and efficient make-ready plans to meet the expectations of prospective residents
<p>The Maintenance Supervisor or Service Manager typically monitors the move out and make ready processes.</p>	

Property Inspections

Slide 100

Display Property Inspections – Purpose slide.

Explain that identifying repair, replacement, retrofitting, and capital expenditures helps a CAM discuss long-range plans and preventative maintenance programs with a supervisor.

Click and Explain that asset preservation and preventative maintenance includes finding problems while repairs are still relatively small, easy, and inexpensive.

Click and Explain that risk mitigation includes ensuring the safety of the property and residents. Inspections help identify potential areas of liability, damage, and injury.

Click and Explain that enhancements are improvements to the property that will either increase rents and/or decrease expenses.

Click and Explain that inspections help a CAM identify specific, immediate problems that need a supervisor’s attention.



Exterior Maintenance

Slide 101

Display Exterior Inspections slide.

Define Exterior Maintenance:

- Inspecting building *exteriors* to keep them in excellent condition

Click and List exterior maintenance areas.



Interior Maintenance

Slide 102

Display Interior Inspections slide.

Define Interior Maintenance:

- Inspecting building *interiors* to keep them in excellent condition

Click and List interior maintenance areas.

Click and Read key point on slide.



Interior Inspections

Inspecting building *interiors* to keep them in excellent condition

- Office and clubhouse
- Interior hallways
- Cleaning and janitorial areas
- Trash rooms and storage areas
- Amenities and common areas
 - Business centers
 - Fitness centers
 - Laundry rooms
- Occupied units
- Units to 'make ready'

Knowledge about these areas improves your ability to oversee a property's interior maintenance .

Move-Out Inspections

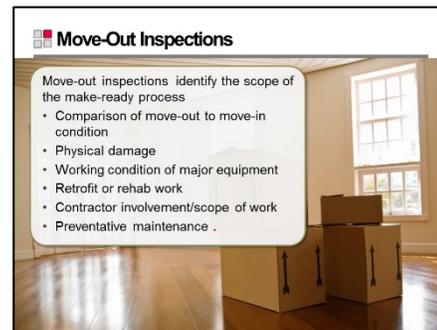
Slide 103

Display Move-Out Inspections slide.

Explain that each vacant unit must be inspected at move-out to determine maintenance needed and the scope of the make-ready process.

Click to show each point and List items a CAM must identify during a move out inspection.

Provide examples as needed.



Move-Out Inspections

Move-out inspections identify the scope of the make-ready process

- Comparison of move-out to move-in condition
- Physical damage
- Working condition of major equipment
- Retrofit or rehab work
- Contractor involvement/scope of work
- Preventative maintenance .

Make-Ready Inspections

Slide 104

Display Make-Ready Inspections slide.

Define a Make-Ready Inspection:

- Inspecting units to ensure market readiness

Click to show each point and Explain the purpose of the pre- and post-inspections.

Note that the Maintenance Supervisor or Service Manager typically monitors the move-out and make-ready processes, but the CAM is ultimately responsible for the “market-ready” condition of a property.



Make-Ready Inspections

Inspect units for market readiness

- Pre-inspection identifies make-ready tasks
- Post-inspection ensures work is completed and unit is ready to show
- Maintenance staff typically monitors move out and make ready processes

Work with staff to develop sound and efficient make-ready plans to meet expectations of prospective residents .

Vacancy

Slide 105

Display Make-Ready Check List slide.

Refer participants to the Participant Workbook for a **Make-Ready Checklist**.

Review content from Participant Workbook.

Slide 106

Display Vacancy Loss during Make-Ready slide.

Explain that a CAM must always work to minimize vacancy loss. This is one of the CAM's primary goals of the make-ready process.

Click to Show each point and **Review** the information on the slide.

Click and Emphasize the key point on the slide.

Slide 107

Display Make-Ready Guidelines slide.

Explain that guidelines include standard turnaround time requirements and market-ready goals.

Click and Emphasize the key point on the slide.

Slide 108

Display Make-Ready Guidelines slide.

Click to show each point and **Review** the impact of rent ready units.

Click and Emphasize the key point on the slide.

Reference: Make-Ready Checklist



See the Participant Workbook for a **Make-Ready Checklist**.

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Vacancy Loss During Make Ready

Vacancy loss is incurred when units are not turned in a timely fashion.

Pay attention to:

- How quickly a unit is turned
- Whether staff is "cannibalizing" units for parts or appliances
- What aspects of the make-ready process are contracted

YOU minimize vacancy loss by **enforcing** standards and **ensuring** timely turnarounds

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Make-Ready Guidelines

Make-ready guidelines typically include:

- **Turnaround requirements**
 - E.g. 5-7 days after move-out
- **Market-ready goals**
 - E.g. 75% of all vacant units market ready at all times

Guidelines help ensure the most complete apartment home inventory.

Make-Ready Guidelines

Occupancy and leasing results depend on:

- The **quantity** of rent ready units
- The **quality** of rent ready units

Ensure units of every floor plan are available to show.

If high quality units are not available to lease, current occupancy and leased occupancy may decline.

Slide 109

Display Reference: Vacancy Loss and Guidelines slide.

Refer participants to the Participant Workbook for a summary of **Vacancy Loss** and **Vacancy Guidelines**.

Review content from Participant Workbook.

Reference: Vacancy Loss and Guidelines

See the Participant Workbook for a summary of **Vacancy loss** and **Vacancy Guidelines**.

Make Ready Checklist



Date: _____ Unit: _____

Technician Initials: _____

Living Room	OK	Fix	Initials
Signage/Number			
Door Viewer			
Door Finish			
Lock Set			
Frame/Threshold			
Wall Switches			
Door Stop			
Walls			
Ceiling			
Receptacles			
Baseboards			
Windows			
Window Locks			
Lights			
Thermostat			
Vents			
Cable Connection			
Water Heaters			
Preventive Maint.			

Bathrooms	OK	Fix	Initials
Receptacles/GFCI			
Lights			
Walls			
Tile			
Ceiling			
Floor			
Toilet Mechanics			
Toilet Seat			
Shower Head			
Tub Spout			
Tub Stopper			
Mixer Valve			
Grout/Caulking			
Shower Doors			
Sink			
Aerator			
P-Trap			
TP Holder			
Towel Bar			
Faucet			
Exhaust Fan			
Mirror			
Medicine Cabinet			
Preventive Maint.			

Kitchen	OK	Fix	Initials
Walls			
Floors/Vinyl			
Ceiling			
Lights			
Receptacles			
GFCI			
Cabinets			
Drawers			
Counters			
Caulking			
Sink			
Faucet			
Disposal			
Plumbing			
Dishwasher			
Refrigerator			
Range			
Hood			
Microwave			
Vents			
Baseboard			
Ref. Coils, Clean			
Paint			
A/C			
Heating			
Vinyl			
Aerator			
Preventive Maint.			

Bedrooms	OK	Fix	Initials
Walls			
Ceiling			
Baseboard			
Receptacles			
Closet Doors			
Closet Shelves			
Window/Locks			
Doors/Handles			
Preventive Maint.			

Blinds	OK	Fix	Initials
Cords			
Guides			
Slats			
Screens			

Mandatory Items	OK	Fix	Initials
Entry Door Lock			
Window Locks			
Slider Lock			
Storage Lock			
Fire Alarm			
Fire Extinguisher			
Garage Door Opener			
A/C Filter			
Hood Filter			
Sub Panel			
Porch Lighting			
Preventive Maint.			
Stove Anti-tip Device			

Note: Shaded tasks may be performed after move-in. Talk with your supervisor to see what your company allows.

Vacancy

You must minimize vacancy loss by ensuring standards and timely turnarounds. Vacancy guidelines help ensure maximum effort and focus on the most complete apartment home inventory.

Vacancy Loss	Vacancy Guidelines
<ul style="list-style-type: none"> • Do not allowing maintenance staff to "cannibalize" units for parts or appliances • Weigh the benefits of contracting certain aspects of unit turns vs. doing them in-house, e.g. painting, carpet cleaning, unit cleaning. • Ensure that there are enough units of every unit type available to show. • Many companies establish standard turnaround time requirements. <ul style="list-style-type: none"> ○ Example: 5-7 working days following the day of move-out. 	<p>Vacancy guidelines typically include:</p> <ul style="list-style-type: none"> • Standard turnaround time requirements <ul style="list-style-type: none"> ○ E.g. 5-7 working days after move-out • Market-ready goals <ul style="list-style-type: none"> ○ E.g. 75% of all vacant units market ready at all times. • Targets help ensure maximum effort and focus on the most complete apartment home inventory. <p>Occupancy level and leasing results depend on:</p> <ul style="list-style-type: none"> • The <u>quantity</u> of rent ready units • The <u>quality</u> of each of those apartment homes • If high quality units in sufficient quantities are not available to lease at all times, current occupancy and your leased occupancy will decline.

Asset Preservation

Slide 110

Display Protecting the Asset slide.

Say Let's look at the long-term advantages to caring for your property.

Define Asset Preservation:

- Actions taken to prevent damage to the physical structures of the property as well as the grounds and amenities.

Explain that the best way to ensure that a property is being well maintained is through the inspection process.

Click to show each point and **List** actions that can be taken to preserve a property.



Deferred Maintenance

Slide 111

Display Limiting Deferred Maintenance slide.

Define Deferred Maintenance:

- Property upkeep that has been deferred or not completed. It frequently has a direct impact on asset preservation.

Click and Explain that a property that has a lot of vacancy loss or non-competitive rents may not have enough cash for needed repairs, thus causing deferred maintenance.

Click and Explain that deferred maintenance creates even lower vacancy because prospects see that the property is not being maintained.

Note that repairs may not be completed due to:

- Neglect
- Lack of staffing
- Lack of training
- Lack of materials or financial resources

Inspection Impact on Budgets

Slide 112

Display Inspection Impact on Budgets slide.

Read slide and **Explain** that once repairs, retrofits, or enhancements are identified, a CAM solicits bids to estimate the cost of each budget item.

Explain that a CAM should budget repairs, retrofits, or enhancements by the priority listed on the slide.

Click to show each point and **Review** its priority.

Note that items needed to remain competitive in the market may not result in increased revenues or decreased expenses.

Limiting Deferred Maintenance

Upkeep that is deferred or incomplete; frequently has direct impact on asset preservation

- Results when a property does not have enough cash for repairs
- Creates even higher vacancy .



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Inspection Impact on Budgets

Budget

Property inspections provide information needed to prepare budgets

- Priorities:
 1. Potential liability of safety issues
 2. Asset preservation projects
 3. Retrofits/enhancements that result in increased revenue or decreased costs
 4. Things needed to remain competitive .

Preventative Maintenance

Slide 113

Display Successful Preventive Maintenance—A CAM’s Role slide.

Say “Let’s continue our conversation on preventative maintenance.”

Ask the participants to describe preventative maintenance programs they may have in place at their properties

Slide 114

Display Reference: Preventative Maintenance slide.

Refer participants to the Participant Workbook for additional details on **How to Manage a Preventative Maintenance Program** and a summary of **Preventative Maintenance Benefits**.

Review content from Participant Workbook.



Reference: Preventative Maintenance



See the Participant Workbook for additional details on **How to Manage a Preventative Maintenance Program** and a summary of **Preventative Maintenance Benefits**.

How to Manage a Preventative Maintenance Program

Preventative Maintenance is based on everyone’s contributions; however, you are ultimately responsible for its success.

Action	Details
Gain the commitment of everyone.	<ul style="list-style-type: none"> • Involve your staff in planning, scheduling, and implementing your preventative maintenance program. • Review the PM plan with your staff and discuss everyone’s assignment. • Lead by example.
Customize your program to address the specific needs of your apartment community.	<ul style="list-style-type: none"> • Consider all aspects of the community: <ul style="list-style-type: none"> ○ Owner’s goals ○ Type of equipment used and frequency of use ○ Property size, age and geographical region ○ Residents’ profile and special needs ○ Staff and resources ○ Seasonal issues (needs in summer and winter) ○ Budget
Communicate frequently with your staff.	<ul style="list-style-type: none"> • Keep staff informed of maintenance activities. • Encourage your staff to keep one another informed. • Provide staff with access to PM information. • Implement preventative maintenance as a team effort. • Review the budget with the entire staff. • Emphasize the value of PM and the staff’s involvement.
Monitor and follow up on PM activities.	<ul style="list-style-type: none"> • Keep track of maintenance work records. • Make sure work is inspected. • Ensure action items are completed by the deadline. • Review PM activities on a regular basis.

Preventative Maintenance Benefits

Many properties suffer physically and economically as a result of an inadequate preventative maintenance program.

Identifies	Increases	Reduces
<ul style="list-style-type: none"> • Problem areas early • Potential resident problems <ul style="list-style-type: none"> ○ Damage, housekeeping issues, overcrowding, hoarding, un-reported pets 	<ul style="list-style-type: none"> • The value of the property • Resident satisfaction and retention • The useful life of fixtures and equipment 	<ul style="list-style-type: none"> • Risk • Expenses • Service requests • Unexpected problems • Frequency of normal problems becoming more costly

Slide 115

Display Preventative Maintenance – Benefits slide.

Review the items that a CAM can identify through preventative maintenance.

Click and **Review** the benefits of preventative maintenance.

Use the following example to illustrate the importance of preventative maintenance:

- Cleaning a dirty condensing unit (\$5-10) with staff labor is considerably less expensive than replacing the condensing unit (\$400-600) when it breaks down because it was not cleaned.



Slide 116

Display 5-Step Maintenance Program slide.

Explain that lenders and insurers frequently require evidence of an ongoing preventative maintenance program, including a system of follow-up, especially for areas of maintenance involving safety, water intrusion and areas of environmental pollution and compliance concern.

Refer the participants to the 5-Step Preventative Maintenance Program in the Participant Workbook. **Review** the steps for creating a preventative maintenance program.



5-Step Maintenance Program

5-Step Preventative Maintenance Program



Step	Description
1. Conduct Inspections	<ul style="list-style-type: none"> • Successful programs begin with a thorough inspection of the property. • To support a team approach, ask staff to take part in inspections.
2. Take Inventory	<ul style="list-style-type: none"> • Develop or update an inventory list of all items. • Walk through the property and note equipment, structural components, landscaping condition. • Keep inventory records. <ul style="list-style-type: none"> ○ Insurance companies will request this in case of theft. ○ Include maintenance manuals and warranties. • Consider engraving the property name on tools and equipment.
3. Identify Tasks	<ul style="list-style-type: none"> • Identify items subject to preventative maintenance. • Establish the tasks needed to maintain the items.
4. Establish Frequency	<ul style="list-style-type: none"> • Establish the frequency to complete tasks: daily, weekly, quarterly, etc.
5. Create a Schedule	<ul style="list-style-type: none"> • Include: <ul style="list-style-type: none"> ○ List of items that are subject to regular maintenance ○ Scheduled date for maintenance ○ Seasonal maintenance • Review procedures in maintenance manuals to identify additional needs. • Use a Tickler file.

Examples of items that should be included in a preventative maintenance program:			
AC coils	Caulking	Exterior surfaces	Roofs
Fences	Chimneys	Exterior walls	Screens
AC condenser	Clubhouse & models	Foundations/buildings	Sewers/drains
Fire extinguishers	Common areas	Furnace and A/C filters	Signage
Balconies	Culverts	Gutters	Smoke alarms
Blower motors	Curb/sidewalks	Landscaping	Sprinkler systems
Boilers	Downspouts	Lighting	Stairs/Handrails
Gutters	Electric panel/switches	Plumbing/fixture	Water heaters
Carpentry	Entry gates	Pools	Carpeting
Records to Keep in a Preventative Maintenance File			
<ul style="list-style-type: none"> ● Preventative maintenance schedule ● Equipment and warranty information <ul style="list-style-type: none"> ○ Serial/model number ○ Date of purchase ○ Warranty ○ Manufacturers' maintenance requirements 		<ul style="list-style-type: none"> ● Termite and pest control inspection records ● Preventative maintenance needs ● Records of maintenance actions ● Staff information ● Name of person who performed the work ● Length of time it took to complete the work ● Manager's notes 	

Preventative Maintenance Schedule

Slide 117

Display Combine With Regular Maintenance slide.

Provide an example of combining preventative maintenance with other regularly-scheduled maintenance tasks:

The following tasks occur quarterly:

- Professional pest control in each unit
- Changing the HVAC filter
- Unit inspections

The maintenance technician can perform a routine unit inspection and change the HVAC filter while accompanying the pest control technician.

Click to show each point and **Review** the resulting impacts.

Slide 118

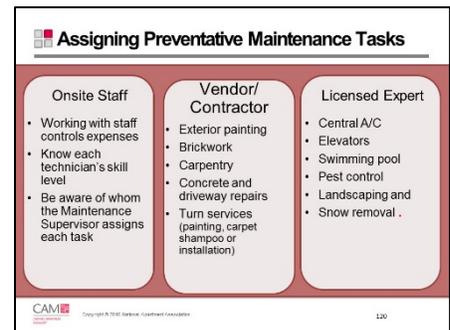
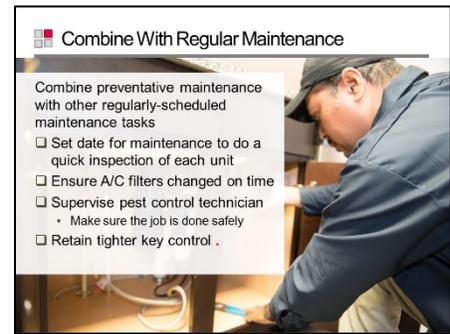
Display Assigning Preventative Maintenance Tasks slide.

Explain that a CAM may need to decide between onsite maintenance staff or an outside company for certain preventative maintenance tasks.

Explain that in general, a CAM works with the onsite staff to retain control of expenses.

Click and List the tasks a vendor might complete.

Click and Explain that a licensed service expert may be required by state/local or federal regulations in certain situations.



Slide 119

Display Monitoring and Recording Preventative Maintenance slide.

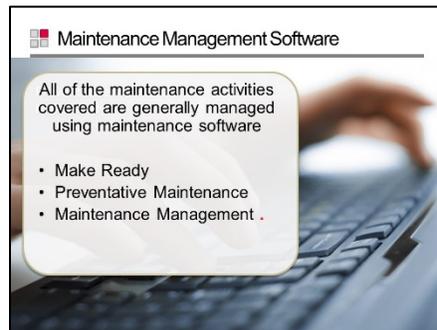
Click to Show and **Review** ways a CAM can monitor preventative maintenance.

Slide 120

Display Maintenance Management Software slide.

List the key information the software captures.

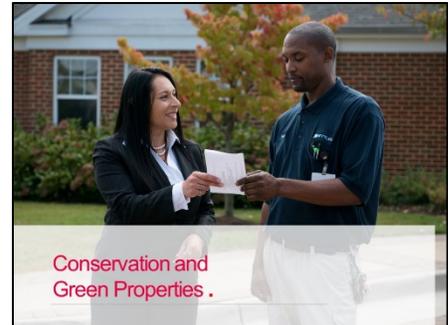
Maintenance Management Software



Conservation and Green Practices

Slide 121

Display the slide and **introduce** the topic.



Slide 122

Display Green Properties slide.

Define Green Properties:

- Properties that adopt green standards based on metrics developed by private-sector organizations

Click and List eco-friendly features renters look for.

Highlight that growing demand for green properties offers an opportunity to increase revenues.

Green Properties

Properties that adopt green standards based on metrics developed by private-sector organizations

Renters look for eco-friendly features such as:

- Recycling programs
- Low E-type glass
- Low emissions paint
- Dedicated green spaces
- ENERGY STAR-rated appliances
- LED and compact florescent lighting
- Low-flow water conserving plumbing



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Green Practices

Slide 123

Display Green Practices slide.

List the types of green practices.

Direct participants to the Participant Workbook for the discussion of green practices and **Refer** to the Reference Guide for more information.

Instructor should insert their own experience relating to their own experiences with green practices in their communities.



Slide 1 24

Display Reference: Green Practices slide

Refer participants to the Participant Workbook for more information about Green Practices:

- **Energy Efficiency Best Practices**
- **Self-Assessment Energy Audit Guide**
- **Indoor Environmental Quality**
- **Resource Efficiency**
- **Water Efficiency**

Note:

These reference materials are included in this Facilitator Guide after the Wrap Up.

Reference: Green Practices



See the Participant Workbook for more information about Green Practices:

- **Energy Efficiency Best Practices**
- **Self-Assessment Energy Audit Guide**
- **Indoor Environmental Quality**
- **Resource Efficiency**
- **Water Efficiency**

Slide 125

Display Activity: Slow Water Leaks at Creekwood slide

Objectives: Practice performing cost benefit analysis of a retrofitting scenario to increase cost benefit analysis skills

The Activity is in the Participant Workbook and on the following page.

Duration: 10minutes

Instructions:

- **Divide** participants into small groups
- **Instruct** participants to use the case study materials to:
 - Determine the amount of water and money saved by replacing the showerheads using the case study property.
 - Calculate the “payback period” on a retrofit.
 - Determine its cost effectiveness.

Debrief:

- **Reinforce** the savings associated with retrofitting.
- **Explain** that a cost benefit analysis is necessary to identify if money will be saved.

 **Activity:** Creekwood Slow Water Leaks**Instructions:**

In groups, use your case study materials to:

- Determine the amount of water and money saved by replacing the showerheads at Creekwood.
- Calculate the “payback period” on a retrofit.
- Determine its cost effectiveness. .

Creekwood Slow Water Leaks Activity

Creekwood has 122 apartment homes. The cost of water is \$.20 per 100 gallons and, on the average, two showers are taken per day. In each apartment the estimated length of shower is 5 minutes. The existing showerhead allows water to flow at a rate of seven (7) gallons per minute; a new showerhead allows water to flow at a rate of 2.5 gallons per minute.

The Problem

What are the cost AND energy savings of replacing the existing showerhead with a new showerhead?

Water Usage

Use the following formulas to calculate water usage in gallons per day.

Existing showerhead: (8540) gallons per day
(122 apts X 2 showers per day X 5 minutes per shower at 7 gpm)

New showerhead: (3050) gallons per day
(122 apts X 2 showers per day X 5 minutes per shower at 2.5 gpm)

Water Saved

Use the following formulas to calculate the water saved, in gallons

Savings per day: (5490) gallons (Existing showerhead usage – new showerhead usage)

Savings per year: (2,003,850) gallons (Gallons saved per day X 365 days)

Money Saved

Use the following formula to calculate the money saved, in dollars per year

Savings per year: (\$4,008)
(gallons saved per year X \$.20/100 gallons)

Rate of Return on investment for showerheads

Use the following formulas to calculate the rate of return on investment for purchasing new showerheads for all units in this community

Cost of new showerheads: \$40.00 each

Cost of showerheads for all units: \$4,880

Savings on water bill the first year \$4,008

Number of years to payoff cost of showerheads

From water savings (cost of shower heads/savings per year): (1.22) years

Wrap Up

Key Points

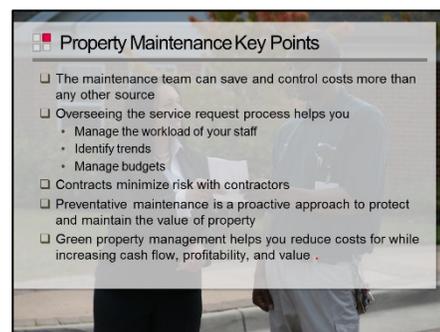
Slide 126

Display the section title slide and **transition** into the wrap up.



Slide 127

Click to show each point and **Review** Key Points.



Slide 128

Thank participants.



Knowledge Check Answers

Slide 129

Slide 129

Knowledge Check: Roles and Responsibilities

1. What are some benefits of ensuring you have a well-maintained property?

- Controls or reduces costs
- Increases maintenance efficiency
- Reduces potential risk and liability
- Attracts and retains skilled maintenance personnel
- Attracts and retains residents

2. Define maintenance.

Upkeep and repair of property and equipment

3. What is the end result of setting high quality standards?

Quality standards add value

Slide 130

Slide 130

Knowledge Check: Roles and Responsibilities

4. How often should you communicate with your Maintenance personnel?

Daily

5. Who is responsible for the curb appeal and upkeep of the property?

Everyone; however the CAM is ultimately responsible

Slide 131

Slide 131



Knowledge Check: Hiring Maintenance Personnel

6. Typically, who hires the maintenance staff?
*The CAM hires the Maintenance Supervisor
 The Maintenance Supervisor hires the rest of their staff (with participation from the CAM)*

7. Who is ultimately responsible for the performance of service technicians?
The CAM

8. Who should conduct the interview and initiate the hiring process?
The Maintenance Supervisor

9. What can you use during the interview to determine the skills a candidate has?
A Maintenance Skills Checklist

Slide 132

Slide 132



Knowledge Check: General Maintenance Terminology

10. What are some benefits for a CAM to have maintenance knowledge?

It helps you set quality standards, follow up and inspect workmanship, communicate better, control maintenance expenditures, manage daily maintenance work, assign/prioritize service requests, and estimate cost/time for completion.

Slide 133

Slide 133

Knowledge Check: Overseeing Service Requests

11. What are the 4 steps of the service request process?

- Office staff takes a service request
- Maintenance staff completes service request
- CAM reviews & summarizes service requests
- CAM reviews weekly service request summary

12. Why does a CAM oversee service requests?

- Assess each staff member's skills
- Match the work with the correct skill set
- Complete performance appraisals
- Plan preventative maintenance
- Identify trends
- Plan budgets

13. What are the two ways you can review weekly service request summaries?

By technician and by property

Slide 134

Slide 134

Knowledge Check: Managing Inventory

14. What are the benefits of maintaining standard inventory?

Purchasing materials and managing inventory contributes to the Net Operating Income

15. If your owner plans to upgrade and enhance the property for a long-term hold, what grade of tools and supplies should you purchase and why?

Heavy duty because they have a long life span and are most durable

16. Why do you need to plan for temperature-controlled areas to store supplies and inventory?

To prevent ruin or spoilage of paint, caulk, and other supplies sensitive to weather

Slide 135

Slide 135



Knowledge Check: Managing Inventory

17. Why are relationships with suppliers beneficial?

- May be helpful in emergency situations and when special products must be found
- Save you time because you trust their products and prices
- Can make suggestions because they know your products and needs
- May deliver purchases
- May measure and install products

18. What are the benefits of having maintenance management software?

Lowers maintenance expenses and improves a property's productivity

Slide 136

Slide 136



Knowledge Check: Contractors and Vendors

19. When should you hire a contractor?

- Your normal staff cannot do the task
- It is more cost effective
- You need required documentation

20. What are the three steps of the bidding process?

- Scope and specifications
- Bidding
- Awarding the contract

21. Define scope.

- Work to be performed under a contract or subcontract to complete a project
- Must contain a detailed job specification

22. Define specifications

Descriptions of specific materials, equipment, and construction methods to be used on a project

Slide 137



Knowledge Check: Inspections

- 23. How often should you inspect the property?
At least once a month
- 24. What are the purposes of property inspections?

 - Help manage upcoming budgets
 - Preserve assets
 - Mitigate risk
 - Assess enhancements
 - Identify what needs your supervisor's attention
- 25. Why are units inspected at move-out?
To determine maintenance needed and the scope of the make-ready process
- 26. Occupancy level and leasing results depend on _____?

 - The quantity of rent-ready units
 - The quality of each of those apartment homes

Slide 138



Knowledge Check: Types of Maintenance

- 27. What types of maintenance management, and prevention did we discuss?

 - Exterior
 - Interior
 - Make-Ready
 - Capital Expenditure Projects
 - Moisture Management
 - Preventative
- 28. Define Make-Ready Maintenance.
Repairing or replacing items to make a unit "market ready" and meet the expectations of prospective residents
- 29. Define Preventative Maintenance
A proactive approach to protect and maintain the value of property assets

Slide 139

Knowledge Check: Types of Maintenance

30. What should you include in a preventative maintenance file?

- Preventative Maintenance schedule
- Landscaping report
- Monthly preventative Maintenance report

31. Define Capital Expenditure

- Large, non-recurring property expenditures that add to the "useful life" of a property

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Knowledge Check: Conservation and Green Properties

32. What Green Property Building Standards were discussed?

- Leadership in Energy and Environmental Design (LEED)
- National Green Building Standard (NGBS)

33. What is a property's largest controllable cost?

Utilities

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Knowledge Check: Conservation and Green Properties

34. What is the most effective method for improving Indoor Environmental Quality (IEQ)?

Controlling the sources of pollutants in building materials and chemicals

35. What are the three main areas of water conservation?

- Managing drinkable water
- Water-efficient fixtures, appliances, equipment
- Water efficient landscaping

Green Practice Reference Materials

Energy Efficiency Best Practices

Reduce energy consumption by 5-20% without a significant capital investment.

Best Practice	Description
Set Goals	The goal should be written, clearly defined, and measurable.
Track Performance	Track utility usage to monitor progress toward energy goal.
Weatherization	Weatherization checklists should be created for each season. Basic weatherization measures include insulating walls, crawl spaces, and attics; sealing and weather-stripping around window and door frames; and sealing duct systems. Check insulation adequacy; add more to save money.
Operations and Maintenance	Improve operations and maintenance practices by regularly checking and maintaining equipment to ensure its functioning efficiently. Optimize start-up time, power-down time, and equipment sequencing. Revise janitorial practices to reduce the hours that lights are turned on each day. Perform monthly maintenance of heating and cooling equipment to guarantee efficient operation throughout the year. Review and emphasize the financial and environmental results of a preventative maintenance program for major systems and components.
Lighting	Replace all incandescent bulbs, floodlights, and decorative spotlights with ENERGY STAR qualified LED bulbs. Replacing one 60 watt incandescent bulb with a 10-watt LED bulb will save \$150 in energy costs over the LED's lifetime. ENERGY STAR qualified LEDs are rigorously tested to ensure that they will last their 25,000+ average hour life.
Change Air Filters	Inspect, clean, or change air filters every month. A dirty filter wastes energy by slowing airflow and making the system work harder. You should be familiar with the location, sizes, and types of air filters required for your system. Also consider upgrading standard filters to MERV 8 or higher pleated filters. These filters improve indoor air quality by removing finer particulate matter than standard fiberglass air filters and reduce your maintenance budget due to their 3 month life-span compared to the 1 month life-span of standard fiberglass air filters.
Install Programmable Thermostats	Installing a programmable thermostat is one of the easiest ways to save energy and efficiently manage cooling and heating. Install programmable/set back thermostats in offices, clubhouses, fitness centers, and laundries. Install locked covers and set the desired temperature levels for the various times of the day.
Use Equipment Automatic Controls	Review and adjust any on-off controls such as programmable and mechanical time clock settings, set points, lighting photocells, and occupancy sensors.

Best Practice	Description
<p>Reduces Standby Power</p>	<p>Standby power or “phantom load” refers to the electrical power consumed by electronic appliances while they are switched off or in a standby mode. Simple methods to reduce standby power:</p> <ul style="list-style-type: none"> • The easiest way is simply to unplug the unused devices. • Replace battery-powered devices, such as cordless phones, with corded alternatives. • Use a power bar such as a Smart Strip. The Smart Strip monitors power consumption and can sense the difference when computers and similar devices are on or off. Upon sensing an “off” mode, it shuts off the power, eliminating the idle current.
<p>Repair Leaks</p>	<p>Repairing leaks will save both water and energy for hot water heating.</p>
<p>Seal and Insulate Duct Systems</p>	<p>The Department of Energy (DOE) notes sealing ducts can improve efficiency by 20%. Focus first on sealing and insulating ducts that run through unheated spaces such as attics, crawlspaces, basements, and garages. Start by sealing seams with duct tape before wrapping with insulation.</p>
<p>Tune-Up HVAC, Boilers, and Building Systems</p>	<p>Building equipment should be tuned up annually, just as you would tune up an automobile to get the best performance. Clean HVAC coils, evaporator, and condensers annually. Change filters quarterly. Turn off water heaters at the breaker.</p>
<p>Lower Swimming Pool and Hot Tub Temperature Settings</p>	<p>The American Red Cross recommends 78 F as the optimal swimming pool temperature. This adjustment can mean significant savings for pools typically set to 80F and higher. Try setting hot tubs to 96F during hotter months and no higher than 102F during cooler months.</p>
<p>Use Ceiling Fans</p>	<p>Utilize existing ceiling fans (or install ENERGY STAR qualified ceiling fans) to reduce the need for air conditioning. Ceiling fans cool people not rooms, so if a room is not occupied, the ceiling fans should be turned off to save energy. In the summer months, the blades should turn counterclockwise to create a direct breeze toward the floor. In the winter, the blades should turn clockwise to push warm air at the ceiling toward the floor.</p>
<p>Install Lighting Controls</p>	<p>Turn off lights when not in use or when natural daylight is sufficient. This can reduce lighting expenses by 10 to 40 percent. Some of the more common types of controls are:</p> <ul style="list-style-type: none"> • Manual Dimming • Photo Sensors • Occupancy Sensors • Clock Switches or Timers

Best Practice	Description
<p>Better Manage Vacant Units</p>	<p>Effectivemeasuresforvacantunitsincludeturningoffbreakerswhenfeasible, turning heating and cooling off or to a minimal temperature setting, adjusting refrigerators and freezers to their warmest settings, and turning off water heaters. Review vacant unit bills to identify unnecessary water, and energy use. Frequently walk through vacant units to ensure lights and thermostats are off and windows and blinds are closed.</p>
<p>Minimize Heating and Cooling Load</p>	<p>Install weather stripping on doors and windows to eliminate drafts and air leakage. Use window shades, tinting, films, or blinds to reduce heat gain in the summer (and heat loss in the winter). When weather is temperate, open windows rather than using mechanical heating or cooling equipment. Use shades and blinds to control direct sun through windows in both summer and winter to prevent or encourage heat gain. Control direct sun through windows depending on the season and local climate. During cooling season, block direct heat gain from the sun shining through glass on the east and especially west sides of the facility.</p>
<p>Heating, Ventilation, Air Conditioning (HVAC)</p>	<p>HVAC systems can account for 40% to 60% of the energy used in commercial and residential buildings. Prior to upgrading HVAC equipment, reduce building heating and cooling loads and complete an energy analysis to select the most efficient, cost-effective equipment:</p> <ol style="list-style-type: none"> 1) Select ENERGY STAR qualified equipment with high-efficiency rating. 2) Install multi-stage compressors. 3) Install an economizer to cool the building when outdoor air is cooler than indoor air. 4) Properly size equipment and ducts to reduce energy waste. 5) Properly install equipment. Improper installation can reduce HVAC efficiency by up to 30% and shorten the equipment's life.
<p>Water Heating</p>	<p>Water heating is a large component of the total energy consumption of a building. Water conservation strategies include:</p> <ul style="list-style-type: none"> • Repair leaking faucets and supply lines. • Replace standard fixtures with high-efficiency faucets and shower heads. • Retrofit existing fixtures with aerators. • Install pressure reduces to restrict water pressure and flow rate. • Install demand-controlled water circulators to save water and energy by eliminating the wait for hot water.

Best Practice	Description
<p>Educate Employees and Be Diligent</p>	<ul style="list-style-type: none"> • Educate employees and building occupants about how their behaviors affect energy use. • Ensure that team members from every department are trained in the importance of energy management and basic energy-saving practices. Hold staff meetings on energy use, costs, objectives, and employee responsibilities. • Educate staff about how their behaviors affect energy use. Some teams have created energy patrols to monitor and inform others when energy is wasted. • Develop an energy team and assign responsibilities to pursue energy efficiency in all departments. • Install energy monitors for common areas to help staff and residents understand the energy that is consumed, and how their actions can positively and negatively impact consumption.
<p>Irrigation Systems</p>	<p>Regularly check (weekly in season) the property’s irrigation system. Check clock functioning that controls time of day and amount of water. Make sure rain sensors work so you are not watering when it is raining. Perform monthly inspections looking for leaks, broken heads, misaligned nozzles, and missing valve box lids. Consider landscaping that requires little or no water.</p>
<p>Conduct a Self-Assessment Energy Audit</p>	<p>Identify obvious defects that contribute to energy waste.</p>
<p>Retrofitting</p>	<p>Replace worn, less efficient parts and equipment with newer energy saving models</p>

Self-Assessment Energy Audit Guide

- Check for indoor air leaks, such as gaps along the baseboard or edge of the flooring and at junctures of the walls and ceiling.
- Check for gaps around pipes and wires, electrical outlets, foundation seals, and mail slots.
- Check to see if the caulking and weather stripping are applied properly, have no gaps or cracks, and are in good condition.
- Inspect windows and doors for air leaks:
 - Check for rattling frames.
 - Check for daylight around door or window frames.
 - Check the storm windows to see that they fit and are not broken.
- On the outside, inspect all areas where two different building materials meet:
 - All exterior corners
 - Where siding, brick, stucco meet
 - Areas where the foundation and the bottom of exterior brick or siding meet
 - Check for holes or penetrations for faucets, pipes, electrical outlets, and wiring.
- Check for cracks and holes in the mortar, foundation, and siding.
- Check the exterior caulking around doors and windows, and see whether exterior storm doors and primary doors seal tightly.
- Check to see that areas above condition spaces (attics) have adequate insulation.
- Check to see that the attic hatch is insulated and has weather sealing.
- Determine whether openings for items such as pipes, ductwork, and chimneys are sealed.
- Check to see if there is a vapor barrier under the attic insulation:
 - The vapor barrier might be tarpaper, Kraft paper attached to fiberglass batts, or a plastic sheet.
 - If there does not appear to be a vapor barrier, you might consider painting the interior ceilings with vapor barrier paint. This reduces the amount of water vapor that can pass through the ceiling.
 - Large amounts of moisture can reduce the effectiveness of insulation and promote structural damage.
- Make sure that the attic vents are not blocked by insulation.
- Check exterior walls for insulation by removing outlet cover plates:
 - Make sure the circuit breaker is turned off and the outlet is not “hot” before removing the cover plate.
- Check to see if unheated areas under the living area flooring are insulated.
- Check to see if foundation walls in heated basements are insulated.
- Check to see if water heater, hot water pipes, and furnace ducts are insulated.
- Have a professional check and clean HVAC equipment once a year.
- Check filters and replace them as recommended by the manufacturer:
 - Generally, filters should be changed once every month, especially during periods of high usage.
- Check ductwork for dirty streaks near seams; these indicate air leaks.
- Check for insulation on any ducts or pipes that travel through unheated spaces.

Indoor Environmental Quality (IEQ)

Pollutants in building materials and chemicals diminish Indoor Environmental Quality (IEQ). Controlling the sources is the most effective method for improving IEQ.

Pollutant	Description	Health Effects	To Reduce Exposure
Asbestos	A mineral fiber once used for insulation and as a fire retardant. Found in older homes, in ceilings, floor tiles, or wrapped pipes	Lung cancer, mesothelioma, and asbestosis	<ul style="list-style-type: none"> Do not cut, rip, or sand asbestos-containing materials Use a certified contractor if asbestos will be disturbed or requires removal
Biological Contaminants	Includes bacteria, molds, mildew, and viruses can be distributed through buildings by central air systems.	Exacerbation of allergies and asthma; the extent and severity is unpredictable	<ul style="list-style-type: none"> Route exhaust fans to outdoors Control level of building moisture Tear out building absorbent materials if wet for 24 hours or more Do not install porous materials in areas exposed to moisture
Carbon Monoxide, Nitrogen Dioxide, and Particles	Burning fuels creates carbon monoxide and nitrogen dioxide.	If proper venting is blocked, the invisible gas can build up and cause headaches, dizziness, or nausea and even death.	<ul style="list-style-type: none"> Ventilate to outdoors Use carbon monoxide (CO) detectors Keep burners properly adjusted, flame should burn blue Never use a gas stove to heat a space Annually inspect furnaces, flues, chimneys
Carpeting	New carpet, adhesives and padding can be a source of chemical emissions	See VOCs	<ul style="list-style-type: none"> Ask the installer to air out the carpet in a well-ventilated area. Most fumes evaporate in 48-72 hours Use proper ventilation equipment during and after installation Specify use of low-emission adhesives Specify carpet with the Carpet and Rug Institute's (CRI) Green Label
Environmental Tobacco Smoke (ETS)	Often referred to as "secondhand smoke." Exhaled smoke from burning a cigarette, cigar, or the tobacco in a pipe.	Cancer, respiratory infections, and asthma	<ul style="list-style-type: none"> Do not permit smoking indoors If smoking is permitted indoors, designate a sealed smoking area Do not allow smoking outside near entrances, windows or air-intakes

Pollutant	Description	Health Effects	To Reduce Exposure
Pesticides	A substance used for destroying insects	Poisoning or death; a reported 79,000 children were involved in pesticide poisonings or exposures in 1990.	<ul style="list-style-type: none"> • Use non-chemical pest control (traps) • If unneeded do not store in the home • Use only as directed • Ventilate areas well after use • Dispose of safely
Lead	Exposure can come through air, drinking water, food, lead-based paint, and contaminated soil. Most common exposure on a property is in lead-based paint and water pipes with lead solder at the joints.	Poisoning and serious disabilities, especially in children. Lead affects practically all systems within the body.	<ul style="list-style-type: none"> • Leave lead-based paint undisturbed if it is in good condition • Do not sand, burn off, or remove paint that may contain lead • Find out about lead in drinking water • Adhere to EPA guidelines
Radon	A cancer-causing radioactive gas you can't see, smell, or taste; generally found in soil and basements	Lung cancer	<ul style="list-style-type: none"> • Test for it; purchase a kit or have a test completed by certified professional • Seal crawl spaces and ventilate air
Volatile organic compounds (VOCs)	Ingredients in household products including paints, varnishes, wax, household adhesives, sealants, cleaners, disinfectants, etc.	Each chemical can cause different health effects. Common symptoms include headaches, nausea, vomiting, dizziness, increased risk of liver, kidney, & central nervous system damage, and cancer.	<ul style="list-style-type: none"> • Use only as directed • Ventilate areas well after use • Dispose of safely

For more information on environmental pollutants and steps you can take to reduce exposure visit the EPA: An Introduction to Indoor Air Quality/Improving Indoor Air Quality at www.epa.gov/iaq/is-imprv.html.

Resource Efficiency

Wasted resources are lost profits. Green buildings reduce waste, reuse materials, buy green products, and recycle.

Goal	Description
<p>Commit to Conserving Resources</p>	<ul style="list-style-type: none"> • Set and communicate conservation and recycling goals. You are more likely to achieve goals if they are written, clearly defined, measurable, and communicated. • Educate staff and tenants on the need for conservation practices. • Designate a staff member or committee to champion your conservation goals. • Include conservation practices in operating procedures / performance expectations. • Start a suggestion and incentive system to encourage conservation practices. • Start a “conservation” column in your building’s newsletter. • Use signs and placards that promote conservation and recycling habits.
<p>Buy Green</p>	<p>Green Product Identification Systems label or certify green products. National Organizations include:</p> <ul style="list-style-type: none"> • ENERGY STAR Qualified—A joint program of the EPA and the DOE; products in over sixty categories are eligible. • Green Seal— Certifies building materials, cleaning supplies, paper products, fleet vehicle maintenance products, etc. • The Forest Stewardship Council (FSC) - Certifies that wood and paper products were created with minimal damage to forest ecology and neighboring local economies. • Green Label— a program from the Carpet and Rug Institute (CRI) to test carpeting, cushions, and adhesives to identify products with low emissions of VOCs. • GREENGUARD— Certifies products in many categories including bedding, building materials, cleaning products, office equipment, and furniture. • EcoLogo— Certifies products in a large variety of categories; recognized worldwide. • Green-e— Offers certification and verification of renewable energy and greenhouse gas mitigation products. • Builder’s Challenge— Voluntary program that allows homebuilders to more easily differentiate their high performing homes through a standardized energy rating system. • Enterprise Green Communities—An organization that promotes ways to build homes and plan neighborhoods with efficient operations, resource conservation, energy efficiency, etc. • WaterSense— a partnership program by the EPA; the WaterSense label signifies that products are 20% or more water efficient than average products in that category. • Green Star— a designer and manufacturer of eco-friendly LED lighting systems to communities and businesses. <p>These systems may complete a Life Cycle Assessment (LCA) or similar evaluation to determine the relative “greenness” of a material or product. In a strict sense, an LCA is a quantitative analysis of the economic and environmental impact of a product over its entire life cycle.</p>

Goal	Description
<p>Independent Third-Party Verification</p>	<p>Products may go through certification based on widely recognized standards established by:</p> <ul style="list-style-type: none"> ● American National Standards Institute (ANSI) ● International Organization for Standards (ISO) ● American Society for Testing and Materials (ASTM) <p>In addition to green product labeling, look for products with characteristics such as:</p> <ul style="list-style-type: none"> ● Labeled “low VOC” or “zero VOC” ● Have identifiable postindustrial and postconsumer recycled content. ● Made from natural, plentiful, or renewable materials ● Resource-efficient manufacturing to minimize material, energy, and water waste ● Materials extracted and manufactured locally ● Materials salvaged, refurbished, or remanufactured such as old doors, flooring, and concrete ● Can be easily dismantled and reused or recycled ● Recycled or recyclable product packaging ● More durable than similar conventional products
<p>Reduce Office Waste</p>	<ul style="list-style-type: none"> ● Turn off lights and computers when not in use. ● Reduce paper use; print less and print double-sided copies. ● Cancel unread magazine subscriptions and newsletters. ● Skip bottled water; bring a reusable water bottle to work. ● Use durable, reusable products rather than single-use materials. ● When ordering supplies, ask if surplus or unused materials can be returned. <ul style="list-style-type: none"> ○ Be cautious ordering large quantities to receive a discount; you may only use a portion. ● Reuse common items such as file folders and envelopes. ● Eliminate unnecessary products. ● Reduce e-waste - keep cell phones, computers, and other electronics as long as possible.
<p>Recycle</p>	<p>Make recycling as easy as possible for tenants:</p> <ul style="list-style-type: none"> ● Place recycling bins near trash bins ● Ensure accessibility to persons with disabilities ● Clearly label recycling bins ● Keep recycling areas and containers clean and free of odors ● Monitor for pests

Water Efficiency

Goal	Description
<p>Water-efficient Fixtures, Appliances, Equipment, and Systems</p>	<p>Current water-efficient fixtures, appliances, and equipment provide equal or superior performance.</p> <ul style="list-style-type: none"> • Ultra Low-Flow Fixtures –Can save 20% or more water. <ul style="list-style-type: none"> ○ Select ones with an EPA WaterSense label which shows water efficiency and flow. • High Efficiency Toilets (HETs) – Use 20% less water than the current federal standard. • Bathroom Faucets – Low-flow faucets can save 30% on water use. • Low-Flow Urinals – Replacing inefficient fixtures can save between 1.0 and 4.5 gallons per flush. • Waterless Urinals – uses oil-based fluid and a disposable cartridge to maintain sanitary trap. • Low-Flow Showerheads – Can save nearly 25% water and 300 kWh of electricity annually.
<p>Water Efficient Landscape</p>	<p>Create an attractive, water efficient landscape by using water-conserving techniques such as:</p> <ul style="list-style-type: none"> • Drip systems – Water is applied directly to the roots of plants, uses 30- 50% less water than sprinkler systems. • Moisture and Rain Sensors – Override an automatic irrigation controller’s "on" signal when sufficient rain has fallen or soils are moist. • Hydrozone – Group plants by water needs to reduce over- and under-watering of plants. • Minimize Turf – Some varieties of turf require 40” of water a year. Instead, plant a drought-tolerant grass such as buffalo grass, which requires ½” of water per week. • Use a mulching mower; set blades at three inches to reduce amount of water. • Soil Preparation – A well-drained soil, defined as one that can absorb a half inch of water or more per hour, helps plants set deep roots to take advantage of deep water and nutrients. • Composting – Proper soil amendments can either help a soil drain faster or more slowly. • Mulch – Spreading mulch on top of soil significantly reduces the evaporation of water. • Xeriscaping – Landscaping with slow-growing, drought-tolerant plants whose deep root systems maximize water use while requiring less surface watering. <ul style="list-style-type: none"> ○ Use indigenous plants or those from areas with similar climates. ○ Reduces the amount of trimming and waste removal, fertilizer, and pest control.
<p>Water Conservation Practices</p>	<p>Make a concerted effort to affect water usage behaviors. Share these ideas with tenants:</p> <ul style="list-style-type: none"> • Only run dishwasher when full. If washing by hand, use a tub; don’t run water continuously. • Shorten showers, even by one or two minutes. • Turn off faucets while brushing teeth or shaving. • Use a broom instead of a hose to clean driveways and sidewalks. • While you wait for hot water, capture the flow in a watering can to use later on houseplants. • Adjust water levels in the washing machine to match the size of the load. • Don’t run the hose to wash a car. Use a bucket for rinsing, followed by a <i>quick</i> hose rinse. • Reduce outdoor water use by watering the lawn early in the morning or late in the evening.

Learn more about saving water with EPA WaterSense program by visiting: www.epa.gov/watersense/.