Executive Office of Communities and Development

Property Maintenance Guide

Organizational and
Procedural References for
Maintaining Public Housing

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PREFACE

The Property Maintenance Guide offers strategies, procedures, and standards of good performance for the maintenance of housing developments owned by Massachusetts local housing authorities (LHAs). It is written primarily for LHA Executive Directors and maintenance officials who have responsibility for organizing and overseeing the maintenance effort. Others involved in this work such as maintenance staff and commissioners will also find useful information in the Guide. Our goal in writing this Guide is to help LHAs get more from their resources by providing examples of successful LHA maintenance practices and by suggesting time-tested performance criteria.

This Guide is one of a five volume set written to improve efficiency and economy in public housing production, modernization, and maintenance work. The entire set consists of:

Housing Development Manual: Procedures for Developing Public Housing

Housing Design Guide: Technical Guidelines for Developing Public Housing

Modernization Manual: Procedures for Modernizing Public Housing

Modernization and Redevelopment Guide: Technical Guidelines for Modernizing and Redeveloping Public Housing

Property Maintenance Guide: Organizational and Procedural References for Maintaining Public Housing

The Property Maintenance Guide describes important elements in the organization of a sound maintenance program. It presents effective procedures for organizing, prioritizing, scheduling, directing and documenting the effective care of public housing properties.

The Guide can be read either sequentially or by topic. Readers who engage in a complete reading will gain a comprehensive understanding of the steps that can be followed and the decisions that can be made in order to develop a sound and efficient maintenance program. Others with significant maintenance experience may prefer to read individual chapters, or parts of chapters, as they encounter specific issues.

This series of publications has been organized in three-ring binders to allow for economical updating and to make it possible for you to readily include additional material that is useful for your authority. EOCD will provide revised and new pages for the Guide as knowledge in the maintenance field grows and changes. The sample forms included in Chapter 8 (and any other useful material) may be photocopied for your direct use or adaptation. That chapter also includes a list of additional forms and references available at EOCD.

An important objective of this Guide and its companion volumes is to leave as many decision-making responsibilities as possible to the housing authorities. This is not only a recognition of housing authorities' increased level of expertise in maintaining public housing, but also a reflection of the need to streamline the functions of state government and improve efficiency. We believe the introduction of this series is only the first step in this direction. We will endeavor to best utilize our limited resources to develop and maintain affordable, safe, decent, and sanitary housing for the Commonwealth of Massachusetts.

ACKNOWLEDGEMENTS

This book represents the collective wisdom of many people who are involved with the maintenance and modernization of public housing in Massachusetts. It is not possible to list everyone who has helped shape the final product. However, EOCD is most indebted to the following:

EOCD Funding Initiators

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INTRODUCTION

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INTRODUCTION

KEY CONCEPTS IN THIS CHAPTER:

- This guide provides a framework for organizing and measuring the effectiveness of your maintenance operation. (page I-2)
- There are certain standards of performance that all LHAs should meet. (page I-2)
- This is a guidebook for Executive Directors and maintenance supervisors. (page I-4)
- Use the Index, Key Concepts and Summaries on the left sides of pages for quick references and review. (page I-5)
- This guidebook will be a useful tool for all sizes of LHAs. (page I-8)

WHAT IS THE PROPERTY MAINTENANCE GUIDE?

KEY

This guide provides a framework for organizing and measuring the effectiveness of your maintenance operation.

KEY

There are certain standards of performance that all LHAs should meet.

WHAT IS THE PROPERTY MAINTENANCE GUIDE?

The goal of good property maintenance at a public housing authority is to serve the residents by assuring that the homes in which they live are decent, safe and sanitary. This is a complex task, involving both technical and interpersonal skills. This Guide will help you to organize a maintenance program that can achieve these high objectives.

The procedures and policies described here can be considered recommended practices. EOCD believes that if you follow these practices, you will have a successful property maintenance program. However, the department is well aware that many competent local housing authority (LHA) directors and staffs have created highly successful strategies of their own that differ from those suggested here. These different approaches are typically based on the particular nature of your housing stock, your staff capabilities or other local factors.

Use the Guide as a framework and customize the system to your local conditions and needs.

You will find performance standards scattered throughout the text of the guidebook. As context for reading various parts of the Guide, the following is a list of the standards which all maintenance systems should strive to meet:

STANDARDS

1. All of your units are decent, safe and sanitary as defined by Article II of the State Sanitary Code.

2. Your authority has a system in place which can respond to emergency maintenance requests 24 hours a day and document the results of that response.

3. Your authority can identify, refurbish, and re-lease a vacant dwelling unit within 21 days. The maintenance portion of this task should not take longer than 14 days.

IMPORTANT

Performance standards to measure your LHA's operation against:

- Annual inspection of 100% of units.
- Units that do not meet State Sanitary Code have deficiencies corrected within an average of 30 calendar days.
- Emergency work items are addressed within 24 hours of request.
- The average time to turn-around a vacant unit and execute a new lease is 21 days. Maintenance work is complete within 14 days of assignment.
- No more than 15% of maintenance work orders are generated by resident requests.
- No more than 2-4% of your units should be vacant at any time.

4. Your authority has an official Preventive Maintenance Program and is able to document the activities performed as a part of that program.

5. Your authority inspects every dwelling unit at least once a year, and all other components of your developments at appropriate intervals.

6. Your authority has a system for recording all needed repairs discovered during these inspections and documenting the action taken with regard to those repairs.

7. Your authority has a system for recording requests for maintenance services from residents and documenting the response to those requests.

8. You have the capacity to produce data about the history of all maintenance activities in each dwelling unit and each other component of your developments.

9. You have the capacity to produce data for use in the performance evaluation of your staff.

10. Your authority has the capacity to track all purchases from the point of ordering through delivery, storage, and installation.

11. Your property maintenance system is adequately documented so that new employees in key positions will be able to operate the program effectively from the beginning of their tenure.

WHO WILL USE THE PROPERTY MAINTENANCE GUIDE?

NOTE

The Executive Director is ultimately responsible for the quality of the maintenance operation at each local housing authority (LHA).

KEY

This is a guidebook for Executive Directors and Maintenance Supervisors.

B WHO WILL USE THE PROPERTY MAINTENANCE GUIDE?

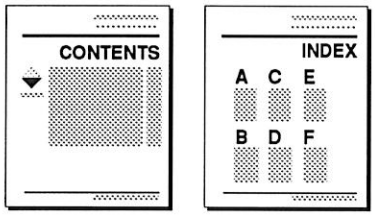
This Guide is for you — the Executive Director of a Massachusetts public housing authority. In the final analysis you are responsible for the adequate maintenance of all the property your agency owns. Although certain responsibilities may be delegated to the maintenance director or others, you are the person who is ultimately held accountable for the standards set in this Property Maintenance Guide. In addition to identifying standards, there is a great deal of information here that will be helpful to you in shaping and monitoring a good maintenance effort for your authority.

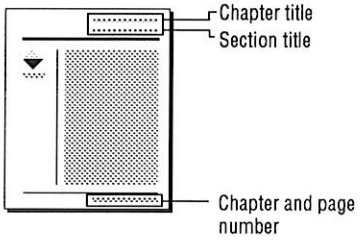
If you head a small authority, you may be the only appropriate reader for the Guide. If your agency is larger, there may be a Maintenance Supervisor or Working Foreman who will benefit from the Guide. If so, you should arrange for that person to receive a copy. And if your LHA is a large one, the Director of Maintenance or Management or Operations will find the Guide useful. This is not an operating manual that describes how to change an oil filter, prune a tree or repair a leaking faucet. Rather, it is a guidebook that suggests ways to organize a staff, set priorities and conduct a well-integrated and thoroughly documented maintenance program. As such, it may not be particularly helpful for individual maintenance workers. You will find that certain parts of the guidebook are useful for explaining to workers as well as residents, commissioners and members of the public why certain policies and procedures are used by your LHA. With you in mind, the Guide was reviewed thoroughly during its draft stages by a committee of LHA Executive Directors and senior maintenance staff from authorities of all sizes. EOCD asked them to look at the drafts from your perspective and their comments have been reflected in the text as it is presented here.

HOW THE GUIDE IS ORGANIZED

KEY

Use the Index, Key Concepts and Summaries on the left sides of pages for quick references and review.





C HOW THE GUIDE IS ORGANIZED

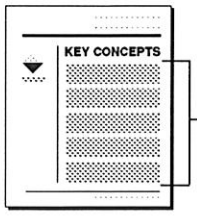
The guidebook is organized into chapters that address major topics in the maintenance area. Since the document is intended to serve as a working tool for those who plan and oversee your maintenance operation, EOCD anticipates that you are likely to read individual chapters or parts of chapters at different times as they become important to you. In order to facilitate this use of the Guide, there is an extensive index at the end of the volume. It will help you find the portion of the Guide that you need.

The Guide has been organized in ways that make it easily accessible and helpful, even when you don't have a lot of time to spend reading. These include the following:

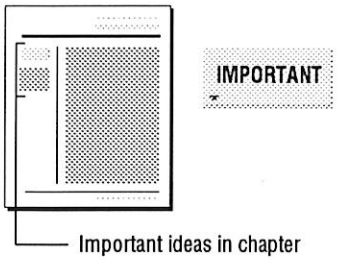
- The Table of Contents and the Index provide a quick overview of what is included in the Guide.

- Chapter and Section Titles appear at the top of each page so that you can know where you are without stopping to read text.

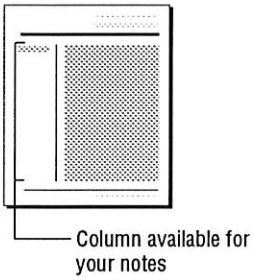
- Pages are numbered within the chapter at the bottom of each page. The first number is the chapter and the second number is the page.



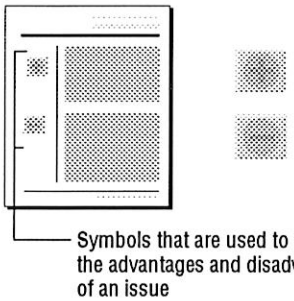
- On the first page of each chapter is a table of contents for that chapter.
- On the second page of each chapter is a list of its most critical ideas under the heading "Keys Concepts in this Chapter." Page numbers are attached to each key idea, so that you can move to the section of the chapter that deals with that concept if you wish.



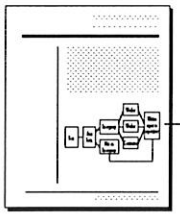
- Throughout each chapter additional important ideas appear in the left hand column so that you can scan them quickly. Some of these "Important" statements are summaries of concepts explained in the accompanying text, and sometimes they are shortened versions of the main writing. One way to skim through a chapter quickly and still get the most important ideas is to read just the material in the left hand column.



- When nothing else appears in the left hand column, you will see the words "Available for notes". This provides an opportunity for you to customize the Guide for your agency by jotting down various facts, new ideas stimulated by the text, references, dates, phone numbers or anything else that might be useful in dealing with the issues that appear on that page.

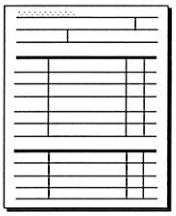


- Occasionally, options will be presented as approaches to a particular issue. In these cases, the text which explains the advantages and disadvantages of each option is accompanied by "+" and "-" signs.

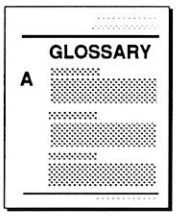


Diagrams and charts are often used to present information

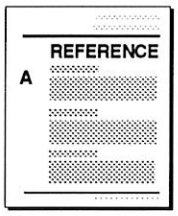
- Diagrams are often used in the text to symbolize relationships or describe processes. You will find these useful as a way of reviewing your operational procedures.



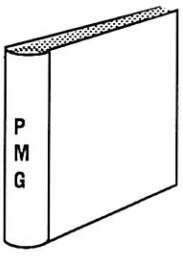
- Chapter 8 contains a number of model forms for use in your maintenance program. None of these are required, but all have been used and/or reviewed by practitioners and found to be efficient ways of specifying and documenting a good maintenance operation. Feel free to copy these forms directly from the Guide for your use if they will serve your maintenance operation well.



- At the end of the volume is a Glossary of words and phrases used in the public housing property maintenance industry. Some of these words appear in this Guide. Others are words and phrases you may run into in other related reading. You may want to copy some parts of the Glossary for distribution to various members of your staff.



- A Reference chapter also appears at the end of the Guide. This includes a number of books and other publications that you may find useful in developing your maintenance program or solving particular maintenance problems.



- The Property Maintenance Guide has been developed in a loose leaf format so that pages can be added and subtracted in the future as new ideas are developed or regulations change. EOCD continues to be interested in your suggestions about how this volume can be made as useful as possible to you and your authority.

THE SPECIAL ISSUE OF AUTHORITY SIZE

NOTE

While the formality and complexity of systems may change with the size of an Authority, the principles underlying the systems do not.

KEY

This guidebook will be a useful tool for all sizes of LHAs.

D THE SPECIAL ISSUE OF AUTHORITY SIZE

The Property Maintenance Guide is written with the point of view that, while local practices may differ widely, especially in their level of formality, the most basic standards of good maintenance remain the same regardless of the size of the agency. For example, consider the case of a large LHA that has a staff of 20 maintenance employees and completes 80 work orders a day. Compare this with a small agency that has only 2 staff members and accomplishes 8 tasks per day. The larger authority will almost surely benefit from a computerized work order system that is integrated with the purchasing and inventory program, and the staff evaluation effort. The smaller agency, on the other hand, may well be able to keep all of its records by hand. Schedules for inspections and preventive maintenance routines may be generated by preset programs and posted on bulletin boards for pick up by the worker in the larger agency. In the smaller authorities these same matters might be discussed by the Executive Director and the staff when the work day begins. Notes confirming the decisions made are entered in the files by the Director.

Either of these systems is acceptable. They vary only in their level of formality. What is common between them, and what this Guide attempts to address are the standards for good maintenance which are appropriate to all authorities, regardless of size. In each of these above scenarios maintenance is planned, oversight is provided and records are kept. These records provide the data for future planning, and the continuing cycle of an ever-improving maintenance operation is assured.

It sometimes seems excessive to small agencies to keep track of the inventory, schedule preventive maintenance activities or put all work on work orders. There are two important reasons to develop good property maintenance systems. First, the effort required to complete these planning and documentation tasks is not particularly great even at a small agency.

IMPORTANT

For purposes of this guide, the following definitions of LHA size are used:

- Small LHAs have fewer than 200 conventional units in maintenance
- Medium sized LHAs have between 200-500 conventional units in maintenance
- Large LHAs have more than 500 conventional units in maintenance.

Second, the benefits of good planning and documentation (and the costs of poor efforts) can be proportionally as great for small agencies as for large ones, even though the dollar figures are smaller.

In summary, EOCD believes that the important principles described in this Property Maintenance Guide are valid for all agencies of all sizes. Because of the necessity to speak to all types of agencies, the Guide sometimes refers to several different job titles, or a list of tasks. Larger agencies may take this literally, while smaller LHAs should understand that all of the functions of these job titles may be held by one person, and that all of these tasks may feel more like sub-parts of a single task where there are few units or sites or staff members involved. EOCD encourages all LHAs to focus on the most basic standards for good maintenance as described in this Guide, and to use the suggestions here along with your own local wisdom to produce maintenance programs that will serve our residents well by providing them with safe and comfortable homes.

GENERAL MAINTENANCE PROCEDURES

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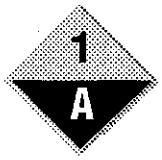
Chapter 1: General Maintenance Procedures

GENERAL MAINTENANCE PROCEDURES

KEY CONCEPTS IN THIS CHAPTER:

- The most effective means of organizing the delivery of maintenance services is to prioritize all work tasks and develop supporting operating procedures. (page 1-2)
- Emergencies should be narrowly defined as only those conditions which are immediately threatening to the life or safety of your residents, staff or structures. (page 1-5)
- After emergencies, the refurbishment of vacancies for immediate reoccupancy should have the highest priority for staff assignments. (page 1-11)
- Every LHA must have a preventive maintenance program which deals with all elements of its physical property and is strictly followed. (page 1-23)
- All routine, non-preventive maintenance work, as well as all tasks generated through the various inspection programs, should be made part of a programmed maintenance effort that ensures their performance in a timely and efficient manner. (page 1-33)
- Requests from residents or others for maintenance work which does not fall into one of the other categories should have the lowest priority for staff assignment, but should ideally be attended to within three to seven days. (page 1-42)



TAKING CARE OF YOUR PROPERTY

KEY

The most effective means of organizing the delivery of maintenance services is to prioritize all work tasks and develop supporting operating procedures.

A TAKING CARE OF YOUR PROPERTY

As a local housing authority (LHA) in Massachusetts, your agency has two broad sets of functions - those that deal with people and those that deal with real estate. This Property Maintenance Guide addresses those functions related to your real estate.

The maintenance of residential property is complex, but not necessarily difficult. That is, there are a lot of tasks to organize and plan, but no single task is particularly hard to execute. The keys, therefore, to an effective maintenance operation are strong organization, consistent procedures, and careful follow through. This chapter will explain a useful way to organize the various maintenance tasks that you face. The result should be an efficiently managed maintenance operation with housing stock in good condition.

Of the various ways to organize a maintenance effort (e.g. by trade, by location, by calendar), the one which works best in the public housing context is organization by priority of work. This will enable you to structure your planning, staffing, scheduling, and record keeping efforts in ways that reinforce each other. The priority categories which will be described in detail in the following pages are as follows:

I. Emergencies

Work which must be done immediately.

II. Vacancy Refurbishment

Work necessary to make empty units ready for new tenants.

III. Preventive Maintenance

Work which must be done to secure and extend the useful life of various elements of your physical property.

NOTE

To small LHAs:

You may have operated in the past with a fairly informal system. Increased efficiency in your operations may be the most significant resource you have in the future. Formalizing many of your procedures may be a difficult, but critical part of increasing efficiency and gaining savings for your LHA's use.

IV. Programmed Maintenance

Work which is important and should be completed to the greatest extent possible within time and budget constraint.

V. Requested Maintenance

Work which is requested by residents or others, does not fall into any category above, and should be accomplished as time and funds are available.

All maintenance activities fit into one of these groups. One important task of senior maintenance staff is to help all workers understand which assignments fall into which categories. This, in turn, ensures that tasks get done in the most efficient order and your property stays in the best possible condition.

MANAGING MAINTENANCE

One of the most significant mistakes you can make in conducting your maintenance operation is to allow it to be driven by requests from people outside the staff rather than by management generated work orders that are part of a planned program. There are several reasons for preferring the organized, management-driven approach:

- Residents and other non-staff persons usually do not call until something is broken. At this point it is costly to repair, may require replacement and may mean some period of time with no service from the component.

- Different people react in different ways to various conditions. One resident may call for a repair that another would never mention. This means that the most vocal residents are directing the maintenance operation of your LHA. You may be spending significant time completing work orders that would have a low priority in the overall scope of your needs.

NOTE

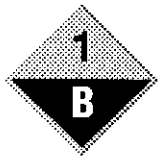
Your maintenance operation must not be driven by non-staff requests. If your emergency, vacancy, preventive and programmed maintenance efforts are functioning well, fewer than 15% of all work hours should be needed for response to requests from residents and other advocates.

- When your staff simply responds to telephone calls, significant amounts of travel time are added to your cost of doing business. Travel time is the most inefficient legitimate task your maintenance people perform.

- Response generates more requests. The more residents or others (such as Board members, politicians, non-maintenance staff or social service agency persons) discover you will act when they call, the more they will call. Since these calls are not necessarily related to high priority repairs, they may be counterproductive.

Managing maintenance means that every effort is made to estimate, schedule and plan the delivery of services to residents. This is the most cost effective manner in which to provide these services, and is a system which will maximize the useful life of building systems and equipment.

Once your LHA has adopted an appropriate set of maintenance priorities, all of your operating procedures should be reviewed. Some existing procedures may need to be modified, and you may have to develop new procedures for certain work tasks. For example, in the past, staff may have routinely taken calls for work and carried out the necessary tasks on a first-come-first-serve basis. New procedures will have to be developed which assist maintenance staff in ordering their work tasks.



EMERGENCIES

KEY

Emergencies should be narrowly defined as only those conditions which are immediately threatening to the life or safety of your residents, staff or structures.

NOTE

Your maintenance people are professionals. Your maintenance program should be designed and led by those professionals.

B CATEGORY I — EMERGENCIES

The category of maintenance work that is the simplest to define in theory, emergencies, is often the most difficult to define in practice. This is because everyone wants their maintenance task completed right away. In order to ensure that will happen, people have a tendency to call anything an emergency. The only way to maintain a rational system of maintenance, and give absolute priority to emergencies, is to:

1. Define emergencies narrowly.
2. Respond to them with exceptional speed.
3. Put everything else into a category that assures it will be completed reasonably soon.

Serious problems arise when you allow outside individuals, staff members and residents to have tasks that they want completed quickly identified as emergencies. It means that people other than the professional maintenance staff are controlling the maintenance program in your agency. The result is significant compromises in the efficiency and effectiveness of your maintenance delivery system. These compromises include:

Disruption of maintenance schedule

Emergencies interrupt the normal smooth functioning of the maintenance effort. When "emergencies" become "routine," the maintenance effort is too frequently disrupted, and it becomes increasingly difficult to maintain an efficiently operating system.

Postponement of maintenance activities

Important tasks are postponed or cancelled when emergencies intervene. Vacancies are not readied for reoccupancy in a timely manner, thereby costing your LHA money in lost rent, and potentially inviting additional vandalism or nuisance activities. Preventive maintenance activities are delayed, and perhaps forgotten, resulting in less efficient operation and eventually more emergencies.

EXAMPLES OF EMERGENCIES:

- Fires of any kind
- Gas leaks
- Electric power failure
- Elevator stoppage
- Broken water pipes
- Sewer blockage
- Roof drain blockage
- Roof leak
- Security lock failure
- No heat
- Inoperative refrigerator
- Snow or ice storm

NOTE

If tenants pay for their own utilities, loss of electricity or heat may be due to non-payment of bills. Your agency may want to consider developing some policy in this area when such loss of service threatens heating and/or plumbing systems for the entire building.

Misrepresentation of priorities

Wrong messages are sent to your residents and staff. For example, if politicians are always able to get their requests treated as emergencies, your residents and staff will conclude that politicians are more important or influential than they are.

APPLYING THE DEFINITION

Taking the definition of emergency and applying it to some common service requests may be a helpful exercise to go through with your supervisors, maintenance staff and residents. Everyone needs to have the same understanding of what qualifies as an emergency. Investing some real time and effort in working with your staff and residents to become thoroughly knowledgeable about new policies and procedures has a tangible return for your LHA. Shared understandings result in shared expectations, and the latter is a critical element in developing confidence and support for your new initiatives.

Application of the definition is not always a clear or obvious issue. For example, snow and ice are dangerous to safety, but if it were not possible for an ambulance to reach a resident, this condition might also threaten his or her health. A roof leak might damage the structure, but if it caused a short circuit in the electrical system, it might also be dangerous to the life of residents.

Whenever an emergency occurs, the appropriate supervisor and workers must stop whatever they are doing and correct the problem, at least temporarily. If the task does not seem important enough to justify stopping what you are doing, it's probably not an emergency.

WHAT TO DO ABOUT EMERGENCIES

The first element in any emergency maintenance plan is preventing emergencies from occurring in the first place. Regular, thorough inspections and a careful preventive maintenance program will keep emergencies to a minimum. However, there is no way to avoid all emergencies. Your LHA must have a plan for dealing with them when they do arise.

IMPORTANT

Emergency Procedures Guide

Plans for each type of emergency that specify:

1. Appropriate staff
2. Outside contractors
   - company
   - phone
   - address
   - contact person
   - terms
3. Location of materials, supplies and equipment
4. Purchasing procedures and open purchase orders
5. Relocation procedures
6. Procedures for notifying public agencies
7. Repair instructions

DURING THE REGULAR WORK DAY

When you are lucky, emergencies occur during the regular work hours. In these cases, the lowest level supervisor who can take care of the problem with his or her staff should do so. That is, if a site manager can get the heat restarted or repair the roof leak by immediately reassigning his or her staff, then the emergency should be corrected in that manner. If the site manager needs the help of additional workers, then a call should go to the manager's supervisor to temporarily reassign workers to the site with the emergency. In dire circumstances or in smaller LHAs, this decision may need to go as high as the Executive Director.

For each type of emergency (e.g. electrical, plumbing, sewers), you need to have a detailed plan of action. The plan should include the following matters:

1. The workers who should respond to the emergency.
2. If outside contractors will be required, the names, addresses, phone numbers, and contact persons of each firm that is used. Any terms or important facts should also be listed (e.g. Closes at 4:00; Won't work on less than 48 hours notice; Only services Jones Elevators, etc.).
3. The location of important materials and supplies necessary for the repairs.
4. Instructions about how to use the bidding, and purchasing systems to get items needed for the work.
5. Procedures for moving tenants out of their unit (between two hours and several days) while the emergency is being resolved.
6. Procedures for notifying any appropriate outside public agencies (fire department, gas company, public works department, etc.) These procedures should include name of agency, phone number, contact person and any other special information.
7. If appropriate, a standard set of instructions for making the necessary repairs (e.g. which areas to clear first in a snow storm, where to look first for sewer blockages, locations to check in case of a security lock failure).

These plans of action for various emergencies should be kept in a looseleaf binder, which can be updated as necessary. This *Emergency Procedures Guide* should be readily available to all workers who might need to use it. Depending on the size of your LHA, you may need several copies. Agencies with very different sites may need a separate guide for each development.

AFTER WORKING HOURS

Responding to emergencies after working hours is both more complicated and more expensive. Therefore, an important aspect of emergency planning is reducing the possible number of "off hours" requests for your LHA. You can do this by creating non-standard shifts (e.g. staff who work from 4:00 PM to midnight, or who work from Wednesday through Sunday). While these workers typically receive a slightly larger salary (4-7% extra in most cases), they substantially reduce the number of hours each week during which you must pay overtime rates for emergency repairs. If you have a sizeable number of such repairs, this system may be cost effective for you.

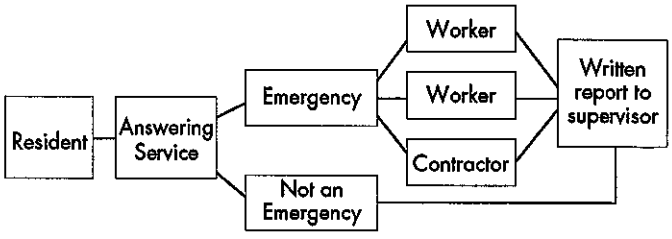
There will always be emergencies at times when no one is on duty. For these times, you must have a system for receiving calls 24 hours a day and notifying workers to respond to an emergency situation. There are several ways of addressing this responsibility. The most common approaches are outlined below.

NOTE

Simply giving residents the phone numbers of workers is not an adequate response system, since many workers could be away from their phone at the time of a particular call. The system you develop must allow a resident or other caller to reach somebody with the capacity to act within two or three calls.

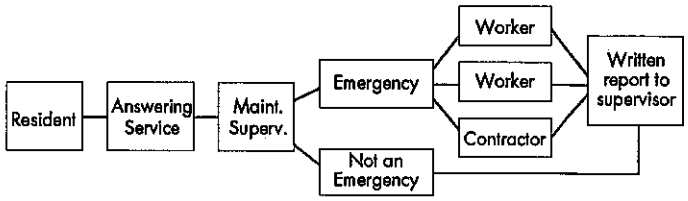
1. The Answering Service Determines Emergency Status

You can have an answering service, trained in the definition of an emergency, which determines whether a request fits that definition, and has a list of appropriate workers and contractors to call.



2. The Maintenance Supervisor Determines Emergency Status

You can have an answering service which simply takes calls and relays them to a senior employee of your agency. This person then decides whether the situation is an emergency and, if so, calls workers or contractors to respond.

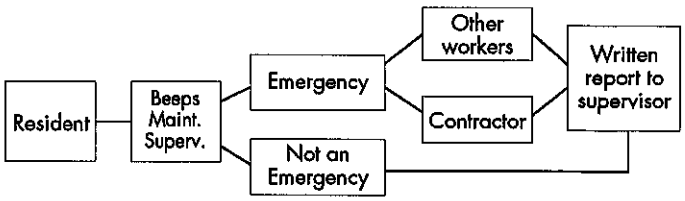


NOTE

Workers who carry beepers may be paid an additional salary for carrying the beeper. They are also paid for any work they must perform as a result of a call they receive.

3. The Maintenance Worker Determines Emergency Status

You can have workers carry beepers which are activated by a phone call, and they can call the resident back immediately and respond if necessary. This is not a preferred system, but if your LHA is small and has a very well defined emergency plan which guides staff in making decisions about what constitutes an emergency, this model can work.



OFF HOURS STAFFING AND FOLLOW UP

It is important to send the appropriate type and number of workers to correct the emergency. You may use a list of workers by skills ranked in some order (seniority, request for work this month, alphabetical, etc.). In an emergency, the first worker on the list for the required skill is called. If that worker is unavailable, the next is called. This proceeds until someone agrees to do the work.

NOTE

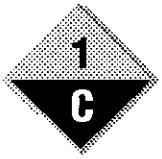
If some of your staff are required to be on call during their off hours, this must be written into their job descriptions.

If this system fails, it may be necessary to have a mandatory procedure. Under such a plan, specific workers (some with each necessary skill) are *required* to be available for emergency calls at specific times ("on-call" one day per week, one week per month, etc.). This procedure must be written into their job descriptions if it is part of your system.

Once workers have been dispatched to the emergency, the *Emergency Procedures Guide* becomes critical. The workers must have ready access to the Guide, because they may not be familiar with the development and there will be no other staff to assist them. Also, workers must be provided with information about the location of keys for spaces in which they may need to work or where they may have to go for equipment, supplies or materials. Purchase orders must also be readily available, should they be needed.

Once emergencies have been corrected, staff must complete work orders. This is particularly important when the work has been performed after hours. The supervisor will need to know what happened, what was required to repair the condition, and whether the job is finished or temporarily patched. The supervisor may need to change some work assignments for the next regular work day to complete the task.

Emergencies will always be problematic. But with a good inspection and preventive maintenance program to reduce their occurrence and good preparation for responding when they do arise, the disruption can be minimized for your residents and your staff.



VACANCY REFURBISHMENT

DEFINITION

Vacancy refurbishment includes all of the maintenance tasks necessary to make empty residences ready for occupancy by new tenants.

KEY

After emergencies, the refurbishment of vacancies for immediate reoccupancy should have the highest priority for staff assignments.

C CATEGORY II — VACANCY REFURBISHMENT

One primary responsibility of your LHA is to reoccupy vacancies as fast as possible. Every day a unit is vacant is a day of rent lost. Vacancies also invite vandalism and signal trouble if they linger. It is particularly important, therefore, to have vacancy refurbishment as a high priority in the assignment of work to your staff. Since this work does not have an "advocate" (e.g. an occupant asking for the work to be done), it can be easy to abandon work in progress on a vacancy when other residents make maintenance requests. This must be resisted. One of the ways to do this is to have someone on your LHA staff be the insistent voice reminding everyone of the importance of completing the vacancy work.

Your agency's ability to turn vacancies around quickly is a good measure of the coordination among parts of your operation. In order to complete the transition from one tenant to the next, at least three parts of your authority have to work closely together. The first is management, which works with tenants to assure they understand their responsibility to give proper notice of their departure date. Failing this, management (including maintenance staff) are responsible for discovering vacancies when they occur unannounced. The second LHA division that works on a vacancy is maintenance, making the apartment ready for the next tenants. Finally, the people who carry out the tenant selection and assignment function must show the apartment to applicants who are next on the waiting list, arrange for a lease signing, and schedule the move-in. In smaller authorities, some or all of these functions may be performed by the same staff member. But whenever there are at least two different individuals involved in reoccupying a vacancy, coordination and communication becomes critical.

NOTE

A reasonable target for average vacancy turnaround is 21 working days. LHAs with very low turnover rates, or a small number of sites or units, may experience a significantly shorter period for vacancy turnaround time.

EOCD believes a reasonable outside limit for turning around vacancies is 21 working days where notice has been given. Where the vacancy must be discovered, the target might be longer. This calculation of time includes all days from the first date on which rent is not collectible (either legally or practically) until the first day on which rent payments resume under the new lease. The maintenance portion of the vacancy process should not take longer than 14 days. Many vacancies should take far less time, such as routine vacancies in elderly buildings, and some will take substantially more. The 21 days should be seen as a good target for your average turnaround time. EOCD requires your vacancy ledger to document the reasons for vacancy periods of longer than 21 days.

There are two broad approaches to turning around vacancies. The important distinction between these models is where the responsibility lies for meeting the 21 day target for vacancy turnaround: with the site manager, or with the central office.

IMPORTANT

Site manager's role:

1. Identify vacancy
2. Conduct inspection
3. Schedule work & assignments
4. Aid in tenant selection and lease-up

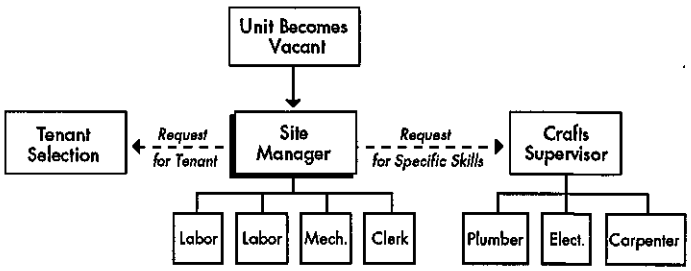
MODEL ONE — SITE RESPONSIBILITY FOR REOCCUPANCY OF VACANCIES

Under this model the site manager or senior staff person for each development is accountable for vacancy turn-around. This person should discover or be contacted about the move-out, conduct the vacancy inspection, schedule the work, make the necessary assignments and finally work with the tenant selection staff to make sure the unit can be occupied as soon as it is available.

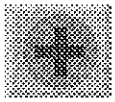
You may staff the vacancy related maintenance work in a number of ways under this model. You may have the site manager use the staff at the development for most of the work by simple work order assignment. After the initial inspection, the manager would decide which laborers or other generalists should be assigned to refurbish the unit. The manager would then notify the supervisor of any craftspeople that are required to complete the work and request their assignment to the site in a timely manner. Once on the site, those workers should be under the direct supervision of the site manager.

In some cases, outside contractors are an appropriate part of the vacancy reoccupancy effort. When the site manager is in charge of all vacancies, he or she must have the authority to quickly contract with such parties or to requisition their services under an existing contract, in order to coordinate their work with that of authority employees.

Model One — Site Responsibility for Reoccupancy

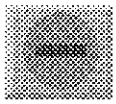


One final strategy that some LHAs use is to create an authority-wide vacancy crew. In this case, the site manager must call the supervisor of this crew when a vacancy occurs and negotiate for the earliest possible date when the crew can be assigned to his or her site. Again, when such a crew is assigned to a particular site, they work under the supervision of the site manager with regard to standards of work, schedule and priorities. A manager should not use the centralized vacancy crew to undertake other work while they are on the site without clearing that additional assignment with the supervisor of the crew.



Advantages of the Site Control Approach

The primary advantage of this model of vacancy refurbishment is that it reinforces the notion that the site manager is in charge of everything at his or her development. Good managers should be aggressive in turning vacancies around. Giving them the resources to get this work done allows the senior administration of your LHA to legitimately hold them accountable for this work. Additionally, coordination and oversight of the entire process of vacancy reoccupancy is best accomplished at the site, since that is where the vacancy exists. Identifying vacancies (in the case of no notification), assuring that work is proceeding actively, showing apartments and signing leases are all tasks that work best at the particular site.



Disadvantages of the Site Control Approach

The single disadvantage to organizing the vacancy effort this way is that managers have a very complex job. When other pressing matters occur, vacancies can slip down the priority list.

NOTE

To small LHAs:

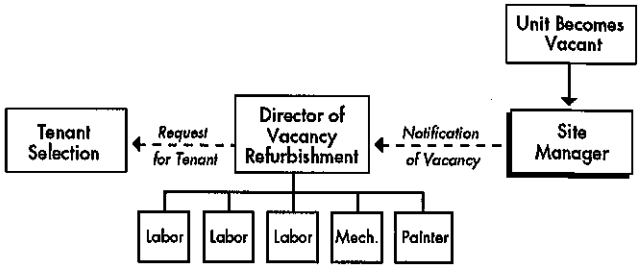
These distinctions of roles and approach may seem of little relevance to you at present, but as your agency grows, a more structured approach to vacancy reoccupancy will be necessary.

MODEL TWO — CENTRAL RESPONSIBILITY FOR REOCCUPANCY OF VACANCIES

Another approach to vacancies is to assign a single staff member to be responsible for all work in this area. This vacancy coordinator would report directly to the Director of Management or the Executive Director and would have the authority to assign staff and materials as necessary to any of the LHA's stock. This might be a full-time job or it might be a responsibility carried along with other assignments.

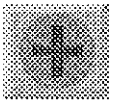
In either case, the vacancy coordinator should be contacted immediately in the case of a notice of departure or upon the discovery of an unannounced vacancy. He or she would conduct the vacancy inspection along with the site manager and would develop a schedule for the completion of work necessary to reoccupy the apartment.

Model Two — Central Responsibility for Reoccupancy



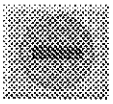
In most cases, when this approach is used, the vacancy coordinator oversees a separate crew that can be assigned wherever they are needed. In addition, if site staff are needed, or if contractors are to be used, the coordinator should have the authority to negotiate directly for those resources. Once commitments are made to the vacancy coordinator for all staff necessary to complete the work, he or she should serve as the supervisor for the work, negotiating adjustments as necessary.

When the original schedule is negotiated with all parties, the coordinator has the responsibility of notifying the staff in charge of tenant selection and placement of the date when a new resident will be able to move in. As the work proceeds, the coordinator must keep all parties notified of any changes in the schedule that will effect the move-in date. Additionally, the coordinator should be responsible for arranging the work so that the apartment can be shown at appropriate times.



Advantages of the Central Control Approach

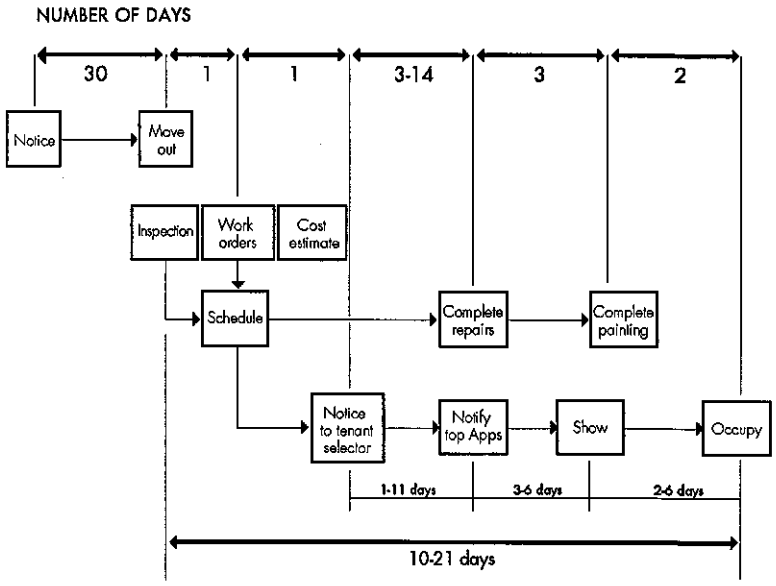
The primary advantages of this model are that a single person has sole responsibility for coordinating the vacancy turnaround effort at your LHA. Particularly when this is a full time position, the person has few other distractions. Performance accountability is clear: the buck stops with the person identified to coordinate the process.



Disadvantages of the Central Control Approach

The negative aspects of this strategy are the difficulty a centrally based person has in coordinating activities at distant locations. Problems may also arise when some workers on a site are supervised by a second supervisor who is not responsible for or aware of other work assignments at the development.

A Model Vacancy Reoccupancy Process



IMPORTANT

Signs of an unannounced vacancy:

- Extra trash or household furnishings discarded
- Residents bringing in an unusual number of boxes
- Windows with no curtains and/or lights
- Shades continuously drawn
- Delinquent rent and no occupant contact

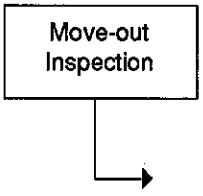
NOTIFICATION

Your LHA should do everything possible to encourage residents to notify you when they plan to leave. Your lease should include a requirement for a 30 day notice from the tenant regarding move-out. Your tenant orientation should emphasize this requirement. Posters and reminders on rent notices should reinforce the idea that this is responsible resident behavior.

Managers and other site staff should develop a daily routine of walking the site. This will maximize the possibility of identifying any unannounced vacancies as soon as possible after they are vacated. Your staff should learn to look for the signs of unannounced vacancy — extra trash on Monday, people bringing boxes into their units, apartments with no curtains, etc. Staff should knock on doors in cases where residents have not been seen for a few days. You should also speak with residents regularly about the bad effects of vacancies, and indicate the LHA's need to know about them as quickly as possible. Residents often know about vacancies before the staff discovers them. If tenants can be encouraged to report vacancies, the LHA may gain some days in its reoccupancy process. Tenant councils may be especially helpful in this area.

INSPECTIONS

As soon as notice is given or the vacancy is discovered, a work order must be prepared for an inspection and the inspection should be conducted immediately. If any notice has been given, the departing residents should be present for the exit inspection. This assures that they will understand any charges to their account for excessive damage to the apartment. This inspection will also allow the tenant to tell the manager about problems in the unit that have not been reported, and which may not be obvious during the inspection.



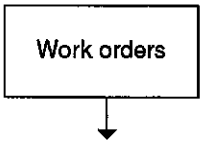
NOTE

Consider using a camera to document special conditions.

The inspection can be completed on a standard dwelling unit inspection form. You might want to use an instant developing camera (such as a Polaroid or equivalent) to document special conditions. Special note should be taken of the fact that the repairs will be made in an empty apartment, thereby allowing slightly more extensive work than might ordinarily be the case. Inspections of vacancies should be conducted by the site manager and anyone else who will have responsibility for coordinating the refurbishment effort.

PREPARATION OF WORK ORDERS

Upon completion of the inspection, work orders should be prepared for all tasks that need to be accomplished. Some standard assignments will be appropriate for every vacancy — clean and sweep, change locks, and paint are typical examples. Other work orders will depend on what is uncovered in the inspection. Some LHAs use vacancies as opportunities to undertake particular apartment improvements that are not urgent, but should be done and are difficult to undertake with residents in place. Examples might include the upgrading of electrical service, the replacement of heating pipes, the installation of hard-wired heat and



IMPORTANT

The important elements of the vacancy reoccupancy schedule are as follows:

- Inspection
- Completion of work orders
- Scheduling
- Requisition of materials, supplies and equipment on hand, or purchase from outside service
- Timely delivery of materials, supplies and equipment to site
- Insurance review (if necessary — typical for fire cases)
- Solicitation of bids or quotes from contractors (see Chapter 6)
- Contracting with outside organizations
- Repair work
- Cleaning and sweeping
- Lock change
- Showing of apartment
- Painting
- Inspection by local or state agencies (if necessary - typically around safety, environmental or building code issues)
- Final inspection and occupancy (with new resident)

smoke detectors. Of special note currently, is the issue of lead-paint detection and abatement. Where you have the opportunity and the funding available, lead paint inspection and removal are tasks which are particularly appropriate for the period when an apartment is vacant. The technology is changing rapidly in this area, as are the state and federal regulations. Your agency should keep abreast of these changes. You are particularly reminded to contact EOCD regarding the latest state regulations, policy changes and funding availability.

Vacancy related work orders, under the system of maintenance suggested here, have the highest priority for work assignment after emergency conditions.

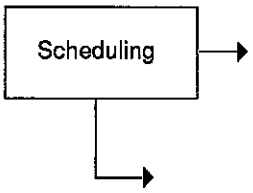
COST ESTIMATING

In order to complete the work orders, the supervisor should estimate the time and materials that will be necessary to complete the refurbishment. This will be useful for giving workers an idea of what is expected of them, and will also be important in the evaluation of maintenance work and the development of work plans for the future.

Cost Estimating

SCHEDULING

The scheduling of the various refurbishment tasks is critically important. This is particularly true if some of your workers have narrowly defined job descriptions. For example, the laborer must arrive to complete the demolition before the plumber can begin working on the bathroom pipes that need to be replaced. And the plumber must finish rough-in work before the carpenter can begin rebuilding the wall. If any of these assignments are not properly scheduled or executed, workers will be left waiting to begin work, thus making the effort more costly and delaying the time for completion.



NOTICE TO TENANT SELECTOR

Once the initial schedule is complete, those in charge of tenant selection should be notified so that they can plan to have an applicant ready when the apartment is ready. Frequent updates and any schedule change should promptly be given to staff involved in the tenant selection and assignment process.

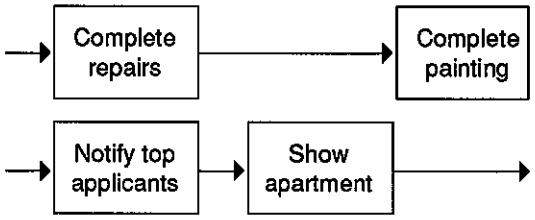
NOTE

On marketing:

Just because your units rent at affordable cost levels, do *not* assume that marketing is something only private building owners have to do. Applicants may feel that they have several options to choose among (a real problem for many LHAs, particularly where non-profit groups have built elderly housing). Effective marketing requires good planning, scheduling, and personable outreach by you and your staff.

SHOWING OF APARTMENT

This task should not be allowed to slow down the reoccupancy process. While it is not appropriate to show an apartment when substantial work remains incomplete, some LHAs feel there is no reason why apartments

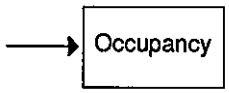


cannot be shown once painting is under way. Other LHAs prefer to use drawings or models to show prospective residents what the apartments are like, and still others prevail on generous residents to allow the LHA to use their homes as "models" of similar apartments to show applicants what the units can look like when they are occupied. Whatever strategy you adopt, it should be one which does not, in and of itself, add days to the reoccupancy calendar. Rather, this task should be conducted simultaneously with other refurbishment activities.

Available for notes

OCCUPANCY

Upon completion of the painting work and any other final tasks, the manager conducts a final inspection. Any unfinished tasks are assigned for immediate completion. The manager notifies tenant selection that the apartment is ready, and the selected resident begins moving in. On move-in day, ideally the day after the final inspection, the manager conducts another inspection along with the new tenant, so that the condition of the refurbished apartment can be formally and jointly documented. The new tenant signs the inspection form along with the manager, and each should keep a copy. This completes the vacancy reoccupancy process.



RECORD KEEPING

As with other areas of maintenance activities, the completed work orders from vacancy work should be filed both by address and by type of work. It will be extremely useful to collect data regarding the frequency and type of vacancies, conditions in which the units were left, time it takes to complete the work on them, and costs involved. Data from these work orders should flow to the maintenance scheduler, budget and fiscal staff, tenant selection employees, purchasing and inventory people and Executive Director. While vacancies are never precisely predictable, you can learn a great deal about the likely incidence in the future by looking at the occurrence in the present.

WHEN VACANCIES ARE A CRISIS — THE RAPID REOCCUPANCY PROGRAM

In some isolated cases, an LHA is faced with a large number of vacancies that prove difficult to reduce. You may find that your number of vacancies is growing each month, rather than shrinking or staying steady. Vacancies may be taking a very long time to reoccupy. Any time your vacancy rate is over 5%, you should review your reoccupancy program and notify EOCD so that we can assist you. In this situation, EOCD recommends the use of a Rapid Reoccupancy Program with a series of special policies. The Rapid Reoccupancy Coordinator is a centralized staff member who has wide authority to schedule workers for the refurbishment of vacancies. His or her only function and priority is to reduce the number of vacancies to a reasonable level and to do so quickly. Some of the policies that might be used in this urgent situation include:

IMPORTANT

Indicators of need for rapid reoccupancy program:

- The number of vacancies is growing
- Your vacancy rate exceeds 10% (excluding "special case" vacancies)
- Most vacancies are taking over 21 days to reoccupy

1. Complete the most recent vacancies (not the oldest ones) first.
2. Give the simplest vacancies a higher priority than those that will be more complex and time consuming to refurbish.
3. Give the vacancies that are easier to rent a higher priority for refurbishment.
4. Modify some standards (e.g. delay painting units; replace only the missing individual floor tiles, not the entire floor; postpone installation of new outlets).
5. Include in the Rapid Reoccupancy Program only units which are in compliance with the State Sanitary Code and need only cleaning and cosmetic work.

Each of these policies has troublesome elements, but when there is a true crisis in the number of vacancies, this is a way to get the situation under control. Such policies should be eliminated as soon as the situation is reasonable and the postponed repairs should be completed as soon as possible. Most important, you should discuss these matters with EOCD. The department can help analyze the problem and suggest solutions.

PREVENTIVE MAINTENANCE

DEFINITION

Maintenance which is required in order to preserve and extend the useful life of materials, equipment, fixtures and other elements of a housing development.

KEY

Every LHA must have a preventive maintenance program which deals with all elements of its physical property and is strictly followed.

D CATEGORY III — PREVENTIVE MAINTENANCE

Preventive maintenance is that set of tasks which must be done if your LHA is to be responsible about the long term viability of physical property that you own. These tasks are not frills to be undertaken only if there is time available. They are the basic obligations of any owner. Preventive maintenance is also an investment. The return on this investment is longer life for the components that are serviced and the avoidance of emergency situations that threaten your budget and the health and safety of your staff and residents.

While this chapter will suggest some of the most important categories of preventive maintenance, you will finally be responsible for developing your own program. The primary sources for information about such a program are:

1. The Manufacturer of Your Property Components

Whenever you install new equipment, facilities or fixtures, you should consult the manufacturer's information packets regarding servicing. These recommendations should immediately be scheduled as a part of your Preventive Maintenance Program. If the material is not provided or is not clear, you should notify the manufacturer and determine what maintenance is needed to keep the component functioning efficiently.

2. Industry Standards

In the case of standard materials and even some equipment and fixtures, there will be a large body of experience regarding effective maintenance of these components. Examples might include the frequency of waxing linoleum tile, best kind of fertilizer to use for new grass or ideal cycle for extermination services. This information can typically be found in publications of the industry professional organizations and should be built into your LHA's Preventive Maintenance Program from the beginning.

IMPORTANT

Sources of preventive maintenance information:

1. Manufacturer's guidelines
2. Industry standards
3. Technical consultants

3. Technical Consultants

In some cases, neither manufacturer recommendations nor industry standards will be available or will apply to your particular situation. In these cases, you may need to consult a specialist professional who can help design the best preventive maintenance strategy for your components. In these situations it is wise to combine the advice of several people, including those who design, manufacture, service or use the item in question. Each of these has a particular point of view and you will benefit the most from consulting them all.

CREATING A PREVENTIVE MAINTENANCE SCHEDULE

Once you have identified all of the tasks which must be included in your Preventive Maintenance Program, it is vital to develop a schedule for the performance of these tasks. This is important particularly because many of the elements of a good Preventive Maintenance Program will be work tasks that need to be undertaken, even when it does not appear that anything is wrong. The tasks, therefore, will not bring themselves to your staff's attention. Changing a filter that appears only slightly dusty may seem unnecessary but if the maximum efficiency of the boiler in question depends on a 98% clear filter, then the filter must be changed. If the battery on the emergency lighting system still tests adequate, but long experience shows that it is probably at the end of its life, then it should be changed in order to avoid what might be a tragedy if it fails next week. The only way these and similar tasks will be accomplished is if they are scheduled, placed on work orders and completed in a timely manner.

IMPORTANT

Scheduling the tasks and generating the work orders are critical parts of any preventive maintenance program.

You should create a Master Preventive Maintenance Schedule. This should include, as a basic element, lists of tasks that need to be performed annually, seasonally, quarterly, monthly, weekly and daily. These lists can easily be updated whenever new components are installed or new procedures are decided upon. From these lists, annual and monthly calendars can be developed. Finally, a weekly schedule can be assembled and converted into a daily set of work orders.

NOTE

On twelve month schedules:

Initially, do not expect to be able to develop 12 month schedules which apply to all of your properties. Working together, management and maintenance staff for each site should be able to prepare fairly accurate schedules for their individual properties. Practice and experience will eventually result in your ability to develop master schedules and plans that cover your entire system.

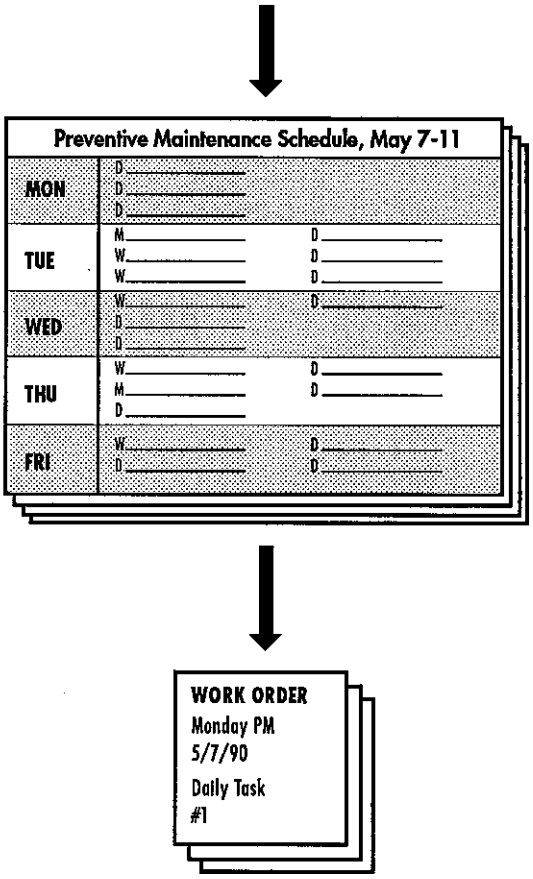
Sample forms which may be customized for use at your LHA or for individual department sites are in Chapter 8. The following diagrams show which reporting instruments support each phase in the preparation of a Preventive Maintenance schedule.

Master Preventive Maintenance Task List				
ANNUAL	QUARTERLY	MONTHLY	WEEKLY	DAILY

Annual Preventive Maintenance Calendar												
	J	F	M	A	M	J	J	A	S	O	N	D
ANNUAL												
QUARTERLY												
MONTHLY												
WEEKLY												
DAILY												

May, 1990 Preventive Maintenance Calendar

		1 M W D D D	2 W W D D D	3 M W D D D	4 W D D D	5
6	7 D D D	8 M W W D D D	9 W D D D	10 M W D D D	11 W D D D	12
13	14 D D D	15 W W D D D	16 M W A D D D	17 M W D D D	18 M W D D D	19
20	21 D D D	22 M W W D D D	23 W D D D	24 M W D D D	25 W D D D	26
27	28 HOLIDAY	29 Q W W D D D	30 M W D D D	31 W D D D		



NOTE

Hints for scheduling preventive maintenance:

- Spread this work among the staff
- Don't schedule all on one day or week
- Don't schedule on Mondays
- Group for efficiency where you can

Several principles should guide your scheduling of preventive maintenance tasks. First, all workers should undertake some of this work. This will give them a sense of how the equipment and fixtures work and a respect for the necessity of good preventive maintenance. Note that some of your workers may need training in order to perform some of the preventive maintenance tasks.

Second, it is wise to group the work for efficiency, but not to concentrate it on one day of the week or one week of the month. This avoids the problem of what to do when an emergency or vacancy occurs on the scheduled "preventive maintenance day". There is a danger of forgetting to reschedule the preventive maintenance work when it is necessarily "bumped" in such a situation.

If you do not now have a Preventive Maintenance Program and Schedule, you should prepare one as soon as possible. Some suggested guidelines are included later in this chapter and in Chapter 8. Note that you do not need to inspect any of your components in order to create this program and schedule. You need to consult the manufacturer's materials, the industry literature, and possibly some technical consultants. Once you have such a program, it should be updated on a regular basis as new materials, equipment, fixtures and facilities are installed. Additionally, you should undertake an annual general review of your documents in this area, modifying them as necessary based on your LHA's experience.

IMPORTANT

Four areas of preventive maintenance

1. Dwelling units
2. Building and grounds
3. Mechanical and electrical systems
4. Vehicles

EXAMPLES OF PREVENTIVE MAINTENANCE ACTIVITIES

Every LHA has a different configuration of structures, equipment, fixtures, grounds and materials. This means each authority needs a unique Preventive Maintenance Program. Although LHAs share some common building types and building systems, others vary widely among LHAs and must receive preventive maintenance attention, regardless of their type or manufacturer. The following charts can serve as an initial checklist for your authority. Determine whether you have a particular item, and if so, whether the suggested schedule for preventive maintenance is appropriate. Add other tasks to this Preventive Maintenance Program and Schedule as appropriate so that these documents are customized for your agency and become active working tools for your staff.

Dwelling Unit Preventive Maintenance	
ITEM	**FREQUENCY**
Heat and smoke detectors	
- Change batteries	Annually
- Clean	Monthly
- Test hard-wired detectors	Monthly
Pest control	
- Resident notification	Monthly
- Installation of chemicals	Monthly
Floors	
- Refinish	Every 3yrs.(wood)
Ceilings	
- Refinish	Every 5yrs.
Walls	
- Refinish	Every 5yrs.
- Recaulking (kitchen and bath)	Every 2yrs.
Kitchen fixtures	
- Freon refill (refrigerator)	Every 5yrs.
- Valve and line cleaning (stove)	Annually
HVAC fixtures	
- Filter changing or cleaning	Annually
Inspection	
- All elements	Annually

Buildings & Grounds Preventive Maintenance	
ITEM	**FREQUENCY**
Roof	
- Gutter and downspout cleaning	Monthly
- Recaulking at flashing	Every 2yrs.
- Patching	Inspect Annually
Heat and smoke detectors	
- Change batteries	Annually
- Clean	Monthly
- Test hard-wired detectors	Monthly
Emergency Lighting	
- Recharge batteries	Annually
- Test	Monthly
Fire Alarm system	
- Test	Annually
Fire Extinguishers	
- Test	Annually
- Recharge	Annually
- Replace	As Necessary
Sprinklers	
- Test	Annually
Emergency Generator	
- Test	Monthly
- Lubricate	Every 10hrs used
Pest Control	
- Notify residents	Monthly
- Install Chemicals	Monthly
Floors (common areas)	
- Refinish	Every 3yrs.(wood)
Ceilings (common areas)	
- Refinish	Every 5yrs.
Walls (common areas)	
- Refinish	Every 5yrs.
- Recaulking (kitchen and bath)	Every 2yrs.
Kitchen fixtures (common areas)	
- Freon refill (refrigerator)	Every 5yrs.
- Valve and line cleaning (stove)	Annually
HVAC fixtures (common areas)	
- Filter changing or cleaning	Annually
Exterior surfaces and fixtures	
- Refinish	Every 10yrs.
Grounds	
- Fertilize	Semi-annually
- Prune	Twice per season
- Water	Daily in season
- Aerate	Twice per season
- Protect	Seasonally
Inspections	Various times

Mechanical and Electrical Systems Preventive Maintenance	
ITEM	**FREQUENCY**
HVAC system	
- Lubricate	Semi-annually
- Change filters	Semi-annually
- Clean	Weekly
- Purge	Weekly
- Test	Weekly
Water system	
- Lubricate valves and pumps	Semi-annually
- Clean	Annually
- Test pressure	Weekly
- Test system integrity	Annually
- Change washers	Annually
Sanitary system	
- Clean	Semi-annually
- Lubricate valves and pumps	Semi-annually
- Replace toilet mechanism	Every 5yrs.
- Test system integrity	Annually
Storm drain system	
- Clean	Semi-annually
- Lubricate valves and pumps	Semi-annually
- Test system integrity	Annually
Electrical system	
- Tighten connections in transformers and junctions	Annually
- Clean	Annually
- Check security	Weekly
- Test	Monthly
Emergency systems	
- Change batteries	Annually
- Clean	Monthly
- Test	Monthly
Security systems	
- Test	Monthly
Elevator system	
- Clean	Cabs-Daily
- Test	Monthly
Solid waste disposal system	
- Clean compactors	Monthly
- Lubricate compactor machinery	Monthly
- Lubricate trash chute doors	Semi-annually
- Clean trash chutes	Weekly
- Clean dumpster areas	Twice a week
Inspections	Various times

Vehicles Preventive Maintenance	
ITEM	**FREQUENCY**
- Lubricate	Every 3months or 3000miles
- Change filters	Various times
- Change tires	Rotate annually
- Replace brakes, other fixed life parts	As recommended
- Sharpen mower blades	Monthly
- Change brushes on sweepers	Annually
- Seasonal cleaning	Start & end of season
- Inspections	Various times

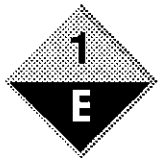
IMPORTANT

Minimum Acceptable Maintenance Program:

1. Emergency response program
2. Vacancy reoccupancy program
3. Preventive maintenance program

Note that the final item in each category is inspection. While most preventive maintenance tasks are pre-set and should be performed regardless of the apparent condition of the component, inspections are also a part of this work. The manufacturer may advise, for example, that a part be examined and lubricated if necessary. In this case the inspection is the first preventive maintenance task, and the lubrication is performed only if necessary. Scheduling is difficult here, because you do not know whether to allow time only for the inspection, or to also leave time for the lubrication. Experience will prove the best teacher in this respect, along with good record keeping. Once you know the percentage of times that inspections show the need for lubrication, you will be able to make a reasonable estimate about how much time to allot to each such work order.

Your Preventive Maintenance, Vacancy Reoccupancy, and Emergency Response Programs constitute the minimum requirements for an acceptable maintenance effort at a Massachusetts housing authority. These programs cover the minimum work that must be done each week, to fulfill your responsibilities to residents and to EOCD. The following sections deal with lower priority work which should be undertaken once preventive maintenance goals have been reached.



PROGRAMMED MAINTENANCE

KEY

All routine, non-preventive maintenance work, as well as all tasks generated through the various inspection programs, should be made a part of a programmed maintenance effort that ensures their performance in a timely and efficient manner.

E CATEGORY IV — PROGRAMMED MAINTENANCE

This is the most difficult category of maintenance to describe. This work is performed after you have addressed higher priority emergency, vacancy, and preventive maintenance tasks. It may be the largest category of work for your agency. The completion of these tasks should be constrained only by your budget and the hours available in the week.

These tasks are called "Programmed" maintenance because they can be grouped and scheduled in such a way as to make their completion very efficient. Emergencies and vacancies occur irregularly, but they must be responded to immediately, even if such a response is inefficient. Preventive maintenance can be programmed to some extent, but maximum efficiency is often hampered by the various manufacturers' requirements.

The work in this fourth priority category, however, can be planned in such a way that the work is timely, but also costs the least and is performed with the greatest skill. For example, glazing requires a special set of tools and equipment and is a skill that is enhanced with practice. Much staff time would be wasted if a worker were assigned to respond to each request for glazing as soon as it was submitted. To do so would reguire excessive travel and repeated start-ups. Since glazing requests are not typically emergencies (except in some situations in the winter or where security is involved), these requests can be postponed until a day's worth of tasks are on hand. In this case the worker would need to search for tools and equipment only once for several work order assignments. Additionally, by repeating the task several times, your employee's skill at the task would improve in the course of a single day.

THE SOURCES OF PROGRAMMED MAINTENANCE

Programmed maintenance comes from two primary sources: routine work and inspection generated work requests.

IMPORTANT

Sources of programmed maintenance:

- Routine work
- Inspections

Routine Work

Routine work includes those tasks that need to be done on a regular basis, but do not fall into one of the other categories. They are not emergencies, nor are they related to vacancies. They cannot be called preventive because they are not undertaken for the purpose of preserving equipment, fixtures or materials and they are rarely requested directly by residents. They are simply the basics of keeping physical property in good shape. The following is a list of typical tasks in this category:

1. Picking up litter
2. Sweeping public spaces
3. Cleaning and sharpening tools
4. Attending training sessions
5. Attending staff meetings
6. Shoveling snow and plowing
7. Raking leaves
8. Maintaining the inventory
9. Washing windows in public spaces
10. Replacing burned out common area light bulbs

NOTE

See Chapter 3 for an in-depth explanation of good inspection procedures.

Inspection Generated Work Requests

The other primary source for programmed maintenance is the work which is discovered as a result of inspections (see Chapter 3 for in depth explanation of good inspection procedures). Any inspection can uncover work in dwelling units, buildings, grounds or mechanical and electrical systems. The tasks may result from premature failure of parts, damage due to extra wear and tear or vandalism, secondary effects of other problems (e.g. failing plaster in walls as a result of a roof leak), natural disasters or other reasons. Some work first noted during an inspection will fit into other categories. Any item discovered in the inspection of a vacancy, for example, would be treated as part of the scope of work to ready the unit and, as such, this work would be done as part of the higher Vacancy Refurbishment priority. All other tasks belong in this category and should be saved for grouping and scheduling. Examples include the following:

1. Broken windows
2. Dripping faucets
3. Broken or raised tiles
4. Repainting
5. Damaged trees, shrubs, lawns
6. Graffitti on walls
7. Broken site furniture (benches, fences, play equipment)
8. Damaged cabinetry
9. Wind damage from a storm
10. Rusted pipes in boiler room

IMPORTANT

Travel among job sites is the single most inefficient legitimate task that your staff performs.

Tips for good work scheduling:

1. Group tasks by location
2. Group similar tasks together
3. Group tasks by employees
4. Group tasks around timing issues
5. Group new tasks with similar tasks from other categories

SCHEDULING PROGRAMMED MAINTENANCE

There are several general principles for efficient scheduling of programmed maintenance. The selection of the appropriate strategy for your LHA will depend on the size and configuration of your units and the capacity of your staff.

1. Group the work according to location

In authorities with scattered sites, this means saving non-emergency work orders for a particular development or portion of the community until there are enough to justify sending a worker for a full day or at least a half day. In LHAs with tightly clustered locations or on large sites, you should group the work orders by portion of the site where the work is located. In single buildings, it may be appropriate to collect work orders for particular floors, public areas or apartments. Travel between job sites is the single most inefficient legitimate task that your maintenance staff performs. It should be minimized.

2. Group the work according to particular tasks

This is especially appropriate for tasks that require particular tools, equipment or materials. As noted in the glazing example above, the time saved in gathering and replacing the special equipment once rather that numerous times, and the improvement in quality of work through repetition easily justify briefly delaying the assignment of a particular work order until other similar ones are received. The following tasks might be grouped for efficient scheduling:

- Glazing
- Rodding or snaking drain lines
- Light roof repairs
- Tile setting
- Asphalt work
- Concrete work
- Painting
- Landscape repair work
- Extermination

Available for notes

3. Group the work according to particular employees or contractors

This strategy is closely related to grouping by task but is slightly different. In this case, the idea is to identify the particular skills of your workers and to use them as often as possible on the tasks they perform best and most quickly. This might mean holding a work order for a few days until the most appropriate worker is free to do it, even though another staff person is doing lower priority assignments. This strategy is even more important when outside contractors are involved. In most cases, these companies will have minimum charges, set-up fees or other billing rules that make it much less expensive to have them perform three tasks on the same day, rather than on three separate dates.

4. Group the work according to seasonal or other timing considerations

Certain tasks that fall in this category of maintenance should be done at a particular time of the year, month or week. Gathering together all of these for completion at the same time may help you to avoid emergencies later in the year. Examples include landscape repair tasks and work on the heating system.

5. Group the work with similar tasks from other categories

You should maintain a clear idea at all times of the work orders waiting to be assigned from the programmed maintenance category. Take opportunities to add one or more of these tasks to an emergency, vacancy or preventive assignment. For example, when a toilet backup emergency is called in, check to see if there are any plumbing related work orders in the same general location awaiting assignment from the programmed maintenance file. If so, they could be grouped with the emergency work order, and you can gain some immediate efficiency for your maintenance operation.

NOTE

You should schedule all programmed maintenance so that a task is completed within two weeks once it is identified.

It is likely that you will use several of these systems simultaneously. Different situations will call for different strategies. The following principles can guide your decision making.

■ Complete requests within two weeks

In general, you should group and assign work in a manner that assures repairs will be performed within two weeks of their discovery. Some tasks will be exceptions to this rule but it is a reasonable target. In particular, this principle should shape the pace of your inspection program, which generates many of the work orders in this priority. If your inspection schedule is generating more work orders than you can possible complete in a two week cycle, then you may want to slow down the inspection pace.

■ Use documented past experience as a guide

Keeping good records can help a great deal. These records can help you predict the frequency of certain repairs. This enables you to project whether it will be worth waiting for another work order of a certain type to show up or whether you can send the worker out with the few you already have in hand. It can help you guess intelligently about whether to adopt a location, task or employee based assignment strategy.

■ Use a computer to track workload

Computerizing this scheduling can be helpful. The task of scheduling priority four work orders is exactly the sort of work that computers do best. Computers can sort a lot of small bits of information into an orderly presentation based on rules developed by you. Once entered in your computer, work orders are less likely to get lost, as well.

IMPORTANT

Key factors in preparing a programmed maintenance schedule:

1. Set aside time for high priority work.
2. Schedule programmed maintenance tasks.
3. Schedule time to respond to resident requests.
4. Use flexibility
5. Use different staff to work currently on different work priorities.
6. Use outstanding work requests for future planning.

PREPARING THE SCHEDULE FOR PROGRAMMED MAINTENANCE

Conducting programmed maintenance activities in an orderly and efficient manner will require good planning skills. EOCD recommends that you actually create, either manually or on a computer, a calendar that will allow you to assign tasks to particular time slots. The following is an example of such a calendar:

Programmed Maintenance Schedule

	MON	TUE	WED	THU	FRI
AM	Emergency	Vacancy Preventive	Vacancy Preventive	Programmed	Programmed
PM	Vacancy	Vacancy	Vacancy Preventive	Emergency Programmed Requested	Programmed

Preparation of the initial schedule and your subsequent revisions to the calendar will be easier if you follow some basic principles:

■ Determine time needed for high priority work

To develop such a calender, you must first estimate the time needed for the higher priority tasks that are bound to occur. While you can never tell when an emergency will arise, you can know, based on careful examination of well-kept records, how many hours have been spent on emergencies each week for the last six months. Then you can plan for a similar number of hours to be available for such tasks in the coming week. If emergencies do occur, you will be ready. If they do not occur, then staff can get an early start on some of next week's work. This "head start" is important because there may be two weeks worth of emergencies next week. This means that at the end of two weeks, you will be on schedule if you have kept your priorities in order.

Available for notes

■ Schedule programmed maintenance work

Once times have been set aside for high priority work, you can see what blocks of time in the week remain for programmed maintenance. Then the grouping strategies can be used to determine which work will be scheduled for which times, places and workers. This draft schedule for the coming week or two allows you to notify residents and give them some advance warning as to when you will be in their apartments, hallways or grounds. If you are entering apartments, 48 hour notice is required by law, but additional warning will always be preferable.

■ Schedule time for resident requests in each week

Though resident requests may be a lower priority than programmed maintenance, some time should be regularly allocated for this work.

■ Use flexibility in scheduling to keep program realistic

Note that you do not need to schedule work in a rigid priority-driven manner, as long as the spirit of the system is maintained. For example, with the exception of emergencies, nearly every other task to be accomplished can move by a day or so. Therefore, it may make good sense to do litter pick-up on Monday morning right after a weekend when trash has accumulated. The fact that this is a week for a particular preventive maintenance task does not mean that maintenance staff must do the preventive maintenance assignment on Monday morning before they can pick up any litter. It does mean that the preventive maintenance work order must be completed before the week is over. By scheduling the preventive work for Tuesday and leaving time for emergencies and vacancies in the schedule, you can get the sites cleaned on Monday when it is important and also assure that preventive work is accomplished in a timely fashion.

Available for notes

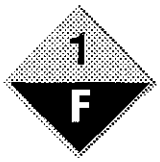
■ Use different personnel for different work priorities

Another dimension to this planning process is the number of workers you have. If you have more than one person on your maintenance staff, several tasks can be underway at once in most cases. Therefore, it may be possible to have some workers pick up litter, while others undertake preventive maintenance assignments.

■ Use outstanding work requests for future planning

Finally, it is important to acknowledge that some programmed maintenance tasks may not be accomplished. Unlike the first three priority categories, this work does not absolutely have to be done in order to achieve the minimum acceptable levels of LHA performance. Budget, staff and time limitations may keep you from getting every task done. The value of careful record keeping, thoughtful scheduling and adherence to the priority categories is that a great deal of your programmed work can be accomplished more efficiently.

The uncompleted work requests become your documentation of the need for capital improvements (modernization) and/or personnel. These requests should be closely monitored for trends in type of work, location of problems and volume of demand. The monthly reporting system on maintenance activity should include an accounting of hours expended on each type of maintenance activity.



REQUESTED MAINTENANCE

KEY

Requests from residents or others for maintenance work which does not fall into one of the other categories should have the lowest priority for staff assignment, but should ideally be attended to within three to seven days.

F CATEGORY V — REQUESTED MAINTENANCE

Some calls from residents or others are about emergency work and those work orders should be appropriately prioritized and addressed. Others are about tasks that fall into the preventive or programmed categories of work. Occasionally, a call will be about something related to a vacancy. Only when a resident notifies you about something that does not fit into any of these categories should it be placed in this group of tasks.

There are items that fit here and nowhere else. If a teenager playing baseball throws a ball through a second floor window, the resident should call and request a repair. This is not an emergency, a vacancy or a preventive maintenance task. Had the broken window been discovered during an inspection it would have been put on the programmed maintenance list. Because the damage occurred since the last inspection, it falls into a separate category. In an ideal situation, this work would be grouped and scheduled like the programmed tasks. This may not be possible given the scheduling of other work. However, every effort should be made to correct the problem within three to five days of the request.

NOTE

On communications:

The success of these efforts and therefore the efficiency of your agency is directly tied to the amount and quality of information sharing that is done by you with residents and Board members. You will have to openly explain and demonstrate the nature and success of this approach to maintenance delivery. It will be worth it!

HOW TO REDUCE THE NEED FOR ROUTINE REQUESTED MAINTENANCE SERVICES

Note that reducing the number of calls from residents and others is not a strategy for providing less service. On the contrary, the fewer times a resident needs to call for maintenance work, the better the service he or she is receiving. Fewer calls means you are doing your job better. One LHA that monitors maintenance performance quite closely has determined that they are functioning at their maximum efficiency when their staff does not spend over 15% of its time responding to resident requests.

The most important steps in reducing the necessity for resident calls are as follows:

1. Conduct careful inspections at least once a year

These inspections will catch many potential problems at an early stage when they can be repaired before the resident needs to call.

2. Follow your preventive maintenance program rigorously

When you perform these tasks in a timely and professional fashion, you will avoid many of the problems that create the need for residents to call.

3. Program all needed repairs discovered during inspection visits for completion within two weeks

This avoids the problem of unacceptable conditions growing worse and the resident becoming concerned and feeling a need to call.

Available for notes

4. Do very thorough vacancy preparation work

The period when an apartment is vacant is one of the best times to make repairs. Take advantage of this opportunity to return the apartment to attractive, full operating condition so that residents will have a problem-free home for as long as possible.

5. Explain the system to your residents

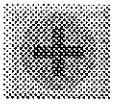
Many residents feel as though the maintenance staff is supposed to wait by the telephone for calls and then respond immediately. Tenants may not understand the idea of a prioritized system with the discipline of preventive and programmed maintenance. It may be difficult for them to conceive of how many emergencies and other breakdowns can be avoided through some of the systems discussed here. It is very helpful to explain the system to people. This makes it easier to respond to a telephone call by saying that a request cannot be completed today because certain preventive maintenance tasks are being performed.

Residents and others will only develop comfort and confidence with this approach when they see maintenance work performed in their unit or building without being initiated by a call from them. Their initial skepticism and resistance to this approach of service delivery will diminish with time, if you *demonstrate* improved overall maintenance of the property.

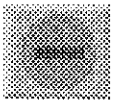
HOW TO DEAL WITH REQUESTS

As noted elsewhere in this Guide, you are required by law to have a system that allows a resident to notify you of maintenance needs 24 hours a day. For most LHAs, using an answering service is the best solution when the staff is not in the office. During working hours, residents, staff or others requesting services could have their calls directed to either the central office or to the specific site. Each system has distinct advantages and disadvantages which you will have to consider.

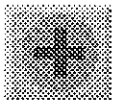
■ Service Requests Taken by Central Office

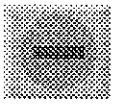


The advantage of this system is that all requests go through a single (or small set) of hands. Some consistency of work order completion is assured, and the monitoring process is easier. If you have a centralized maintenance delivery system, this procedure makes particular sense. But even if you have the preferred decentralized arrangement, the central office person who receives the calls can transmit the requests, work orders and other information to the individual sites by telephone, computer, hand delivered mail, or any number of other systems. This still allows for good record keeping and monitoring in the central office.



The main drawback of this arrangement is that a person with no familiarity with the site or apartments is taking requests. Unless well trained, he or she may not know the best probing questions to ask to determine the seriousness of the condition. If scheduling decisions are also being made at the site level, another problem with this model is that the person who takes the call may not be able to give the resident much of an idea about when the requested service can be delivered.





IMPORTANT

The basics of requested maintenance procedures:

1. Requests can only be accepted at the office.
2. All requests are recorded on work orders.
3. Residents should be given time estimates for task completion.
4. Only trained staff should receive calls.

■ Service Requests Taken by Site Office

Some LHAs prefer to take work order requests right at the site office. There is familiarity and convenience to recommend this system. Responsiveness can be very quick and coordination of schedules is easily facilitated.

There are two significant problems here. The first is the temptation to be too responsive. When a resident requests in person an immediate maintenance response it is difficult to deny the request even though higher priority work is scheduled for that day. The other difficulty is that of record-keeping and monitoring. It is harder to do this when requests are being taken by different office personnel under many conditions.

Whichever system you choose, there are several important principles in dealing with requested maintenance items.

1. The resident must call or visit the office in order to make an official request for work

This must be enforced. Nothing is more disruptive to an efficient maintenance operation than resident's stopping workers on the site and asking them to come and make a repair. Because the best maintenance workers understand that they are there to serve residents, they are tempted to comply with such an informal request. This means other work is not being done and it means that some work is not being recorded on work orders. It also encourages the resident to believe this sort of arrangement will work in the future. The supervisor and scheduler cannot conduct sound planning when this model is allowed to operate.

2. All requests must go on work orders

This is a constant theme of this Guide and should be adhered to in this area of maintenance work as well as any other. The person who takes the calls should assign a priority to the work and forward it to the appropriate location for assignment to a worker.

Available for notes

3. Residents should be given an idea of when the work can be done

If the request cannot be honored immediately, the receiver of the calls should explain what other work is taking precedence. The more this is done, the more residents will understand the LHA's approach.

4. Staff members who receive resident and other calls should be carefully trained

This training should include information on good telephone techniques, resident relations, questions to determine the exact nature of the problem, completion of work orders, clear definitions of the various priority categories, and ways of estimating when the request might be honored. All of these are important for sensitively dealing with resident requests.

Once the request has been received, it should be handled in much the same way as a programmed repair. If it can be reasonably grouped with other work in order to create an efficient package, that should be done. If the work needs to wait to be grouped with the results from a new round of inspections, that will have to be acceptable. In short, these requests must fit in where they can in a way that responds to the resident in the best way possible, without seriously compromising your efforts to create an efficient maintenance operation.

WORK ORDERS

TABLE OF CONTENTS

WORK ORDERS

KEY CONCEPTS IN THIS CHAPTER:

- 100% of all maintenance work done at an LHA should be recorded on work orders. (page 2-2)
- All living unit and other inspections should result in work orders for needed improvements. (page 2-8)
- Work orders, properly prioritized, should be used to assign and schedule all work. (page 2-9)
- Workers should respond to work order requests with materials and/or equipment necessary to complete the identified task. (page 2-11)
- The work order system should be integrated with the purchasing, inventory, budgeting and staff evaluation systems. (page 2-15)

DEFINITION OF A WORK ORDER SYSTEM

DEFINITION

An LHA work order is a document for reporting a maintenance task that needs to be done and for recording what it took to get it done.

A work order *system* is a set of procedures that uses work orders to prioritize and schedule assignments. This system should also provide information that helps many of your other operations work more efficiently.

KEY

100% of all maintenance work done at your LHA should be recorded on work orders.

A DEFINITION OF A WORK ORDER SYSTEM

A work order is an information document that has two distinct parts. The first is a request for work to be done. This part states what work needs to be accomplished, where the work is located and what priority it should be given. The request may come from several sources — the results of an inspection, a routine maintenance assignment, the preventive maintenance program or a resident. In most cases, this same source will describe what work needs to be done and at what location. A priority is assigned according to a set of LHA policies developed by the senior administrators of your LHA and approved by your Board of Commissioners.

The second part of the work order is a report of what was done. This part documents the work that was accomplished, who did it, and what time and materials were used. Specifying the exact format of the work order and its manual or computerized nature is not important. Ensuring that information is recorded consistently across all work performed *is* important.

A work order is also a planning and monitoring tool for management. Properly structured and implemented, a work order system documents needs and quantifies personnel and material use. If you record 100% of all maintenance work on work orders, this system will provide a data base for projecting staff and material needs. It can also be used to schedule your workers in a rational and efficient manner.

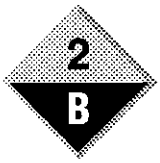
IMPORTANT

Your work order system should allow you to provide the following information about your maintenance operation:

- Vacancy turn-around time
- Average staff hours/work order
- Average calendar time to complete work order
- Staff productivity
- Candidate work items for modernization
- Equipment needs and timing
- Timing for purchasing actions
- Current inventory status
- Origination of work requests
- Staff skills required
- Historical record of repairs by address
- Cost of maintenance by priority, category type & location

There are several important principles for implementing an effective work order program which will insure the maximum return to your LHA for the effort invested:

1. Every maintenance task at the LHA should be recorded on a work order.
2. All maintenance staff time and materials should be accounted for on work orders.
3. Work orders, properly prioritized, should be used to assign and schedule all work. This means that work orders should be completed for non-repair functions such as training, staff meetings and travel.
4. All paperwork and forms should be simple, minimizing writing and avoiding redundant and costly efforts for all who use them such as workers, clerks, managers and supervisors.
5. The work order system should be fully integrated with your budgeting, purchasing, inventory, staff evaluation, inspection and modernization planning systems.
6. Work orders should be filed by location, type of repair and worker.



THE ADVANTAGES OF USING WORK ORDERS

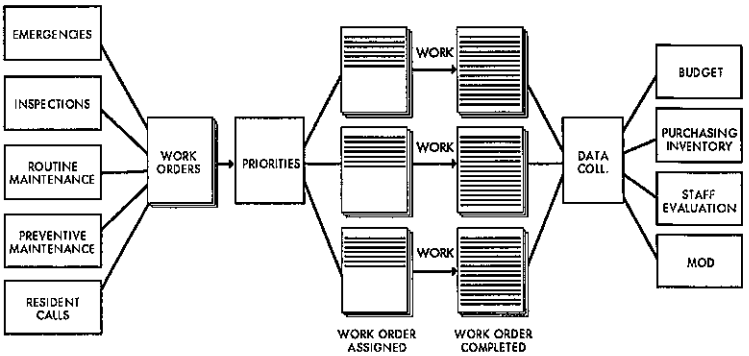
B THE ADVANTAGES OF USING WORK ORDERS

When a maintenance program is fully developed and conducted exclusively through work orders, you will realize the following benefits:

1. Efficient and timely service to residents through good scheduling, accurate task description and economical assignment of work force and materials.
2. Effective personnel administration through documentation of work assignments and the generation of a data base which will support sound personnel decisions.
3. Accountability of task performance for person requesting work, and for supervisors and actual workers.
4. The generation of data that supports a careful and cost effective inventory and purchasing system.
5. Accurate information regarding costs that may be collectible from other parties because of identified misuse, neglect or vandalism, e.g. tenant damage billing.
6. Data for updating the Capital Improvements Inventory System (CIIS) and generally planning for short and long range modernization activities.

Full use of an integrated work order system requires discipline and commitment by all of your staff. Accurate documentation of maintenance needs and performance in your LHA can only occur when work orders are routinely used for all tasks at your LHA.

An Integrated Work Order System



2
C

THE MINIMUM ITEMS ON A WORK ORDER

NOTE

How to use:

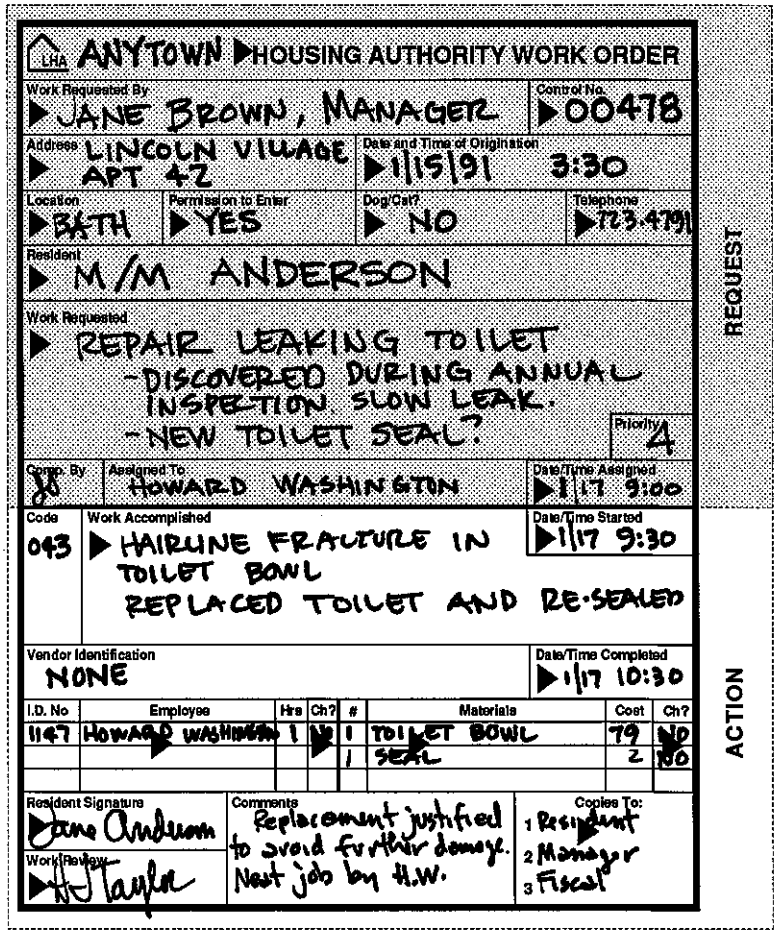
The items in the shaded area have to do with the request for the work to be done. These items are completed by the initiator of the work order or by the person who receives a call or request. The assignment time is entered by the supervisor who assigns the work.

The entries on the bottom of the form are completed by the worker to describe what work was accomplished. The "Work Review" item is the signature of the supervisor indicating his or her actual review of the work or the fact that the work order has been returned and the work completed according to the employee.

The Resident Signature should be obtained when possible. However, residents are frequently not present when work is complete. Copy distribution should be pre-printed on the work order form so that copies are distributed to the correct place.

C THE MINIMUM ITEMS ON A WORK ORDER

Your work orders should contain the following items at a minimum in order to achieve the goals of a good maintenance work order system. The arrows indicate where each item is recorded on one of the model work order forms that are included in this Guide in Chapter 8.



ANYTOWN ▶HOUSING AUTHORITY WORK ORDER

REQUEST

Work Requested By: ▶JANE BROWN, MANAGER
Control No.: ▶00478
Address: ▶LINCOLN VILLAGE APT 42
Date and Time of Origination: ▶1/15/91 3:30
Location: ▶BATH
Permission to Enter: ▶YES
Dog/Cat?: ▶NO
Telephone: ▶723-4791
Resident: ▶M/M ANDERSON
Work Requested: ▶REPAIR LEAKING TOILET
-DISCOVERED DURING ANNUAL INSPECTION. SLOW LEAK.
-NEW TOILET SEAL?
Priority: 4
Comp. By: JB
Assigned To: HOWARD WASHINGTON
Date/Time Assigned: ▶1/17 9:00

ACTION

Code: 043
Work Accomplished: ▶HAIRLINE FRACTURE IN TOILET BOWL
REPLACED TOILET AND RE-SEALED
Date/Time Started: ▶1/17 9:30
Vendor Identification: NONE
Date/Time Completed: ▶1/17 10:30

I.D. No	Employee	Hrs	Ch?	#	Materials	Cost	Ch?
1147	HOWARD WASHINGTON	1	NO	1	TOILET BOWL	79	NO
				1	SEAL	2	NO

Resident Signature: Jane Anderson
Work Review: HJ Taylor
Comments: Replacement justified to avoid further damage. Next job by H.W.
Copies To: 1 Resident 2 Manager 3 Fiscal

IMPORTANT

Optional work order items:

LHAs customize their work order forms in order to integrate the information data with functions in other divisions of housing authority operation.

WORK ORDER EXTRAS

Optional items that some LHAs include on their work orders include the following:

HOUSING AUTHORITY WORK ORDER

Work Requested By			Control No.
Address		Date and Time of Origination	
Location	Permission to Enter	Dog/Cat?	Telephone
Resident			
Work Requested			Priority
Comp. By	Assigned To		Date/Time Assigned
Code	Work Accomplished		Date/Time Started
Vendor Identification			Date/Time Completed

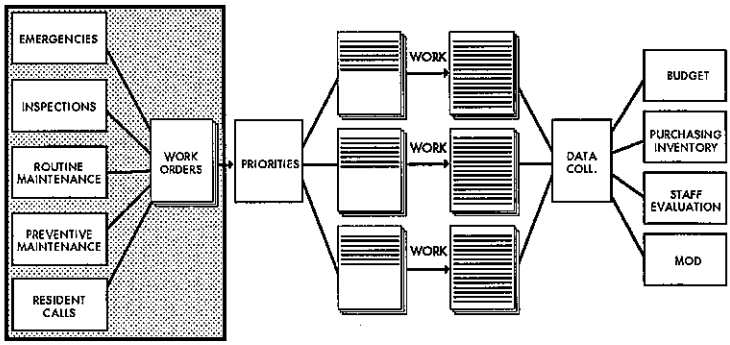
I.D. No	Employee	Hrs	Ch?	#	Materials	Cost	Ch?

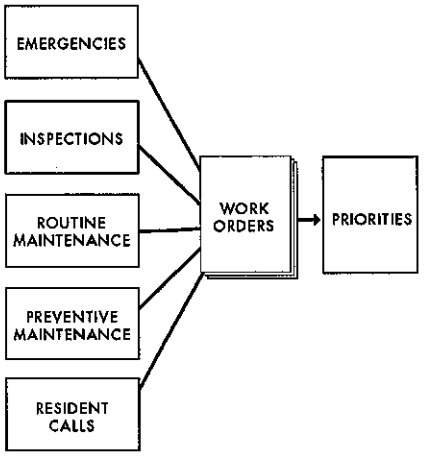
Resident Signature	Comments	Copies To: 1
Work Review		2
		3

USING WORK ORDERS

D USING WORK ORDERS

1. INITIATION





Work orders can typically be initiated in one of five ways:

■ From Emergency Requests

Work orders should be prepared and completed for all emergencies. Once the emergency condition is abated, the work order ensures that any follow-up work will be scheduled and completed.

KEY

All living unit and other inspections should result in work orders for needed improvements.

■ From the Results of Inspections

The annual living unit inspection, the vacant unit inspection and each of the other inspections you conduct during the year (see Chapter 3) should result in work orders for all tasks that are required based on the results of the inspections. These work items can be grouped for efficient performance depending on the priority of the work items discovered. An inspection should also be completed and work orders generated to make the apartment ready for reoccupancy whenever a vacancy occurs.

■ From Routine Maintenance Needs

Work orders should be completed for all regular maintenance activities necessary to keep your developments in good shape and routine work that must be accomplished to help the developments look good. Routine janitorial cleaning, and grounds pick-up work, and washing glass in public spaces are tasks in this category of work.

■ From the Preventive Maintenance Program

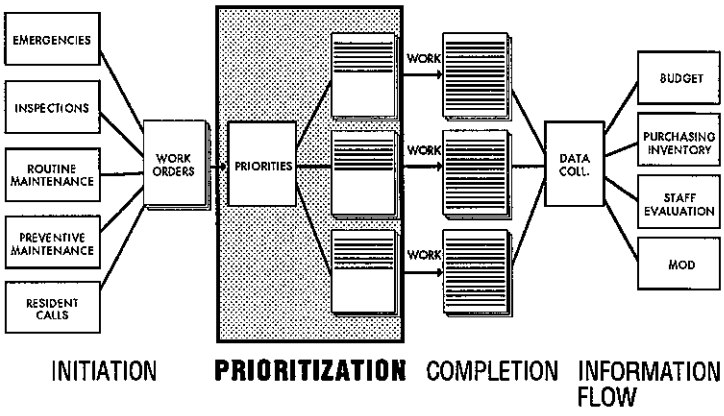
Some tasks address the basic responsibilities of preserving and extending the useful life of equipment, fixtures, materials and other elements of a housing development. Included here are the manufacturer's recommended servicing of equipment.

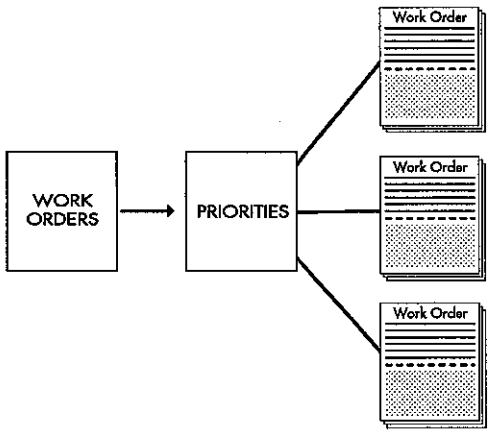
■ From a Resident or Other Caller

Between annual inspections emergencies will occur, items will wear out and components will break even at the most efficient LHAs. When this happens requests for repairs or maintenance will come from residents and other interested parties. These requests should be converted to work orders. When the other components of a good maintenance program are working well, these calls should account for only a small portion of all maintenance work.

When a work order is generated by any of these sources, the first half of the form should be fully completed and a priority assigned. The work order number and its origination time and date should be entered on a work order log so progress on the task can be monitored.

2. PRIORITIZATION AND ASSIGNMENT





KEY

Work orders, properly prioritized, should be used to assign and schedule all work.

Some housing authorities assign maintenance work on a chronological basis. Others allow supervisors or workers to decide which tasks seem most important at the time. These methods of work order scheduling are not acceptable. They do not lend themselves to scheduling work in a timely or cost effective manner. These approaches mean that your service delivery is dependent on worker interest, supervisor's sense of good will, and/or squeaky wheels. There is no assurance of a comprehensive or systematic approach to maintenance activities. As a result, workers could repair leaky faucets for days on end in response to phone calls, while a small flaw in the roof that should have been caught in a regular preventive maintenance inspection broadens into a very costly and time consuming repair.

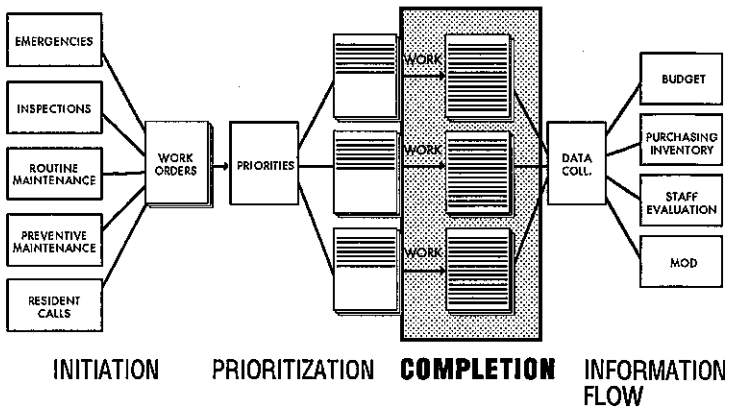
Available for notes

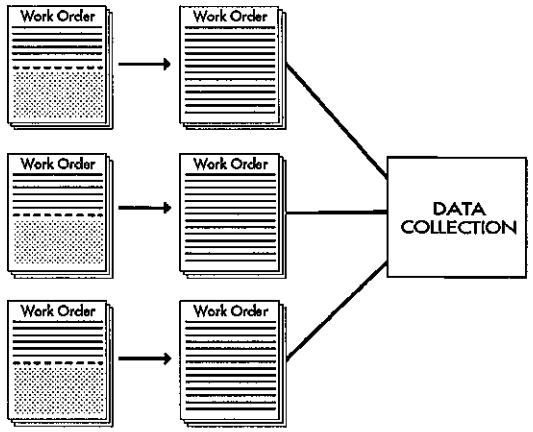
You should adopt a set of priorities as a means of controlling your maintenance operations. These priorities should be developed by the Executive Director with the support of the Board of Commissioners. The system will determine the order of task assignments. The influence of individual staff or residents will be nearly eliminated in deciding what work will be done and when. In order to implement an effective priority system, the policy makers and the senior staff of your LHA need to state and reinforce their commitment to this sort of planned approach to maintenance delivery. This means a system that is management driven rather than request driven.

The priority system of your LHA should demonstrate the agency's recognition of its obligation to provide safe, decent and sanitary housing in the most cost effective manner possible. It should be a system that minimizes liabilities, maximizes income and occupancy, and anticipates needs. Chapter 1 defines approaches to priority setting that you may find helpful at your LHA.

Once the priority is determined, the work order can be assigned to a particular employee or held for assignment at a more appropriate time. The time and date of the assignment should be entered on the work order log.

3. COMPLETION





KEY

Workers should respond to work order requests with materials and/or equipment necessary to complete the identified task.

Upon receipt of a work order, your staff should obtain all necessary supplies and equipment to complete the needed work. These materials may be stored in a truck, central storeroom, site-based storeroom or may need to be purchased. Any difficulty an employee has in securing the necessary materials or supplies should be discussed with the assigning supervisor. The employee should not go to the site without the proper supplies in order to check out the job. If the supplies cannot be obtained, the worker should return the work order and get another one.

Available for notes

Upon arriving at the site, your staff should examine the task to be accomplished and make certain that it is as described. If any additional materials or supplies are required, the employee should call and have them delivered to the site. Workers should not leave the job to go get equipment but should begin preparatory work. The task should be undertaken in the most efficient manner possible, while maintaining high standards of quality.

Upon completion of the work, the employee should fill out the second portion of the work order. Work order completion is most accurate if done while still on the site and while the work performed and the materials used are still fresh in the mind of the worker. At a minimum the worker should record information about the following:

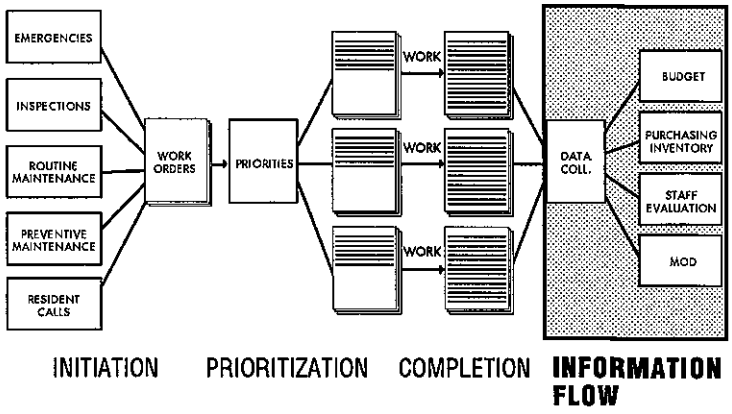
- Work completed
- Materials used
- Date and time started
- Date and time finished
- All employees involved in the work
- Resident signature (if possible & reasonable)
- Tenant charge recommendation

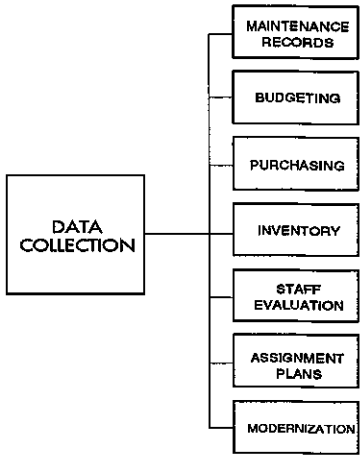
In addition, there may be a need to supply the following:

- Contractor's name and identification
- Any purchase orders used
- Employee identification number(s)
- Activity or materials code numbers
- Comments

Available for notes

4. INFORMATION FLOW





After the work order is completed, the employee should leave a copy with the resident (if applicable) and return the other copies to a designated location or person for recording.

Copies of completed work orders (or at least some of its data) should be distributed to each department that has responsibility for monitoring some aspect of the maintenance work of the agency. This may include staff responsible for the maintenance, management, purchasing, inventory, budgeting, planning, modernization, personnel and/or accounting functions of your agency. To minimize paperwork, determine whether each of your departments really will use the information contained in the full work order or if it is more appropriate to send data regarding only one or two items listed on the work order form.

A work order is considered complete when the work is finished and approved (if necessary) and the work order has been completely filled out. It is also possible that a work order will be voided by the supervisor if some extenuating circumstances require its replacement by a different work order or its elimination because the work no longer needs to be done.

The information contained in the completed work order provides critical *experience* data that you can use to improve the efficiency of your LHA. Specifically, the work order information can help you increase your effectiveness in the following areas:

■ Maintenance Records

A completed work order should be placed in the development or address history file by unit, system or property location that was serviced. You can use this history to prepare work plans for the development for both normal maintenance and capital improvements. These work plans, when based on accurate records of the past, allow for a very reasonable projection of needs for materials, supplies, staff and equipment in the future. This sort of projecting on the basis of actual data produces the most cost effective maintenance delivery systems.

■ Budgeting

You can make very accurate budget projections for future years by using information on hours worked by various types of workers and on materials and supplies used. This is particularly true of trends, and sharp changes in the status of developments. For example, when you see an annual 10% increase in no-heat calls at a development with an old boiler, you can project continued increases in heating system repair costs of about this level. Ultimately, when a new boiler is installed, you will know what portion of the maintenance budget can be reduced substantially, since that sort of call will now nearly disappear.

NOTE

Budgeting is one of the areas of the LHA's operation that is best served if work orders cover all work undertaken. Partial information may not be particularly helpful, since it is not clear what the relationship is of the unreported work to the documented effort.

Full compilation of work order data can also assist your agency in determining the optimal size of your staff. If the average documented time between receipt of work orders from any source and the supervisors' ability to assign that work to an employee is unacceptable, this is clear evidence that additional staff are needed. If the assignment time is acceptable, but the performance time is slow, the problem is a different one. The data can even show that you need a different configuration of staff, if the mechanics are falling further behind, while the laborers are not fully used.

■ Purchasing

The purchasing program needs to be sensitive and adjusted regularly based upon experience and on-going needs. If certain items are being used more rapidly than normal, your purchasing person needs to know that so he or she can increase the procurement of the needed supplies. If certain brand names are being replaced more frequently than others in the same equipment area, then the purchasing officer needs to alter his or her purchasing selections. The work orders can provide this information in an accurate and regular manner. The report may be an informal tallying of the work order information so that purchasing can be accomplished efficiently by the same person that supervises the maintenance work. A more formal alternative is a computerized system that automatically subtracts items used on a maintenance job from the stock on hand and warns the purchasing agent when supplies are unusually low. It is important that the information flow in this fashion so that a purchasing program is based in reality and operates efficiently.

KEY

The work order system should be integrated with your purchasing, inventory budgeting systems, staff evaluation systems.

■ Inventory

As stated above, the work order supplies critical information needed to monitor supplies available to the LHA. In the ideal situation, when each task is begun, the worker takes from the storeroom the supplies, materials and equipment he or she needs for the work. These are deducted from the record of stock on hand. At the completion of the work, the employee fills out the second portion of the work order and records all supplies and

Available for notes

equipment actually used on the job. Unused materials are returned to the storeroom and the stock records are adjusted appropriately.

Some authorities use a system which keeps an employee's vehicle or supply box full constantly. Work is performed with material on hand and the work order report is used to replenish the supplies maintained by the worker. For example, a roving mechanic might begin the day with a truck full of a certain number of light switches, plumbing traps, drywall sheets and other general supplies. In the course of the day, he or she would complete various assignments, noting on the work order at the completion of each job the material used from the truck. At the end of the day, the employee would return to the central storeroom, turn in the completed work orders and replenish the material that was recorded on the work orders. The truck is now full again and ready to begin the next day.

Regardless of the manner in which information flows from the work orders to the inventory monitor, if this practice is followed you will always be current in your knowledge about what stock is available. Shortfalls can be predicted and responded to in a timely fashion. Patterns of use can be observed so that your purchasing procedures can be altered. It is particularly important for integration with the inventory system that work orders be used for all work. Your inventory will not be accurate if the plumbing supplies used to make resident requested repairs are deducted from the inventory but those same supplies used to make preventive maintenance repairs in the boiler room are not counted. If the paint used for apartments is tallied but the paint used for the office and the hallways is not, then there really is no effective continual updating of the inventory. A complete system of work orders integrated with the inventory can make this a smooth and efficient part of any LHA operation.

Available for notes

■ Staff Evaluation

Evaluation of staff performance involves measuring both the quality and quantity of work as it relates to nationally accepted norms, manufacturer suggested targets or your LHA's standards. Work orders do not serve to measure quality of work but are of great value in measuring work productivity. No two tasks ever take exactly the same amount of time to repair. The joint may come loose immediately on one leaky faucet, while on the next, an extra twenty minutes is spent loosening a tightly bonded joint. In one apartment, the residents are away and the worker can concentrate only on the task at hand, while in the next, a friendly and talkative tenant may distract the employee, thus delaying the work. However, when a summary of work order data reports the average time to complete the repair of a leaky faucet is 30 minutes, based on 25 such assignments, you can feel comfortable that this is a reasonable average time for the task.

Additionally, the same information may tell you that the shortest time it took to make this repair was 10 minutes, and the longest was one hour. Knowing this you may wish to praise an employee who is averaging 25 minutes for faucet repairs. The staff member who averages 50 minutes may need additional training or some other form of assistance to improve the quantity of work performed. Without work orders of some variety, this sort of assessment can only be subjective and the measurement of productivity is defined by such factors as friendliness or compatability with residents.

The integration of work order reporting with a systematic staff evaluation program can cause anxiety for employees. They may come to feel that this is a way of checking up on them. It is important for your senior LHA staff to make clear that the purpose of the evaluation program is to help employees improve their skills and productivity, not to catch them at failures. If the staff fails, the authority fails. Conversely, the better the staff performs, the more credit the senior administrators and the Board of Commissioners get for doing a good job.

Available for notes

The more precisely your supervisory staff can assess the performance of the workers, the more they can help with the training, additional support or reassignment of staff personnel. It is important to let the staff know that you are aware that work orders measure only quantity of work and not quality. Some of your best workers may take more time to perform at a very high level of quality. It will be up to you to find the right mix of these qualities and others in your evaluation system. Clearly the data from work orders can help with important parts of the assessment of employees.

■ Staff Assignment Plans

A staff assignment plan is the schedule of maintenance services that are necessary to preserve and extend the normal useful life of all components of your LHA's physical property. When carefully prepared, your assignment plan should incorporate the Preventive Maintenance and Programmed Maintenance activities that can be scheduled well ahead of time, and can anticipate your normal levels of Emergencies, Vacancies and Routine Requests.

Data from work orders is critical for anticipating normal work levels. This data can tell you how frequently which demands are placed on the staff and how much time it takes when they do occur. You can never be certain when the next vacancy will occur but if you know from monitoring the past twelve months, that the average is one per week and that it typically takes 20 hours of staff time to make that vacancy ready for renting to the next resident, then your assignment plan for next week needs to assume that 20 hours of time will go to that task. If there is no vacancy next week, then 20 additional hours will be available to do extra work on a lower priority item such as some additional Preventive, Programmed or Requested work. You should take advantage of the opportunity to conduct this work because there may be two vacancies the following week that keep you from performing some other work.

Available for notes

Some LHAs complete only daily work plans while others keep weekly, monthly or even very general annual ones. You should work at the level that feels appropriate for your agency. However, all of these documents will be much more accurate and useful when work order data is used to compile them.

■ Modernization

The goal of a good maintenance program is to extend the useful life of the LHA's physical property. Modernization (or capital improvement) is the replacement of those components of the property which have finally out-lived their useful life or whose maintenance can be significantly improved by replacement with new materials or systems.

When tallied in routinely generated summary reports the information from work orders can help to identify the systems that are most distressed and are using an unusually large portion of the LHA's maintenance resources. These components can then be added to your modernization agenda with the appropriate priority.

BASIC INFORMATION WORK ORDERS CAN PROVIDE

E BASIC INFORMATION WORK ORDERS CAN PROVIDE

To make the priorities established by the Board of Commissioners and the senior administration of your LHA operational, you should formulate a Work Plan for the staff of the agency that is predicated on the documented results of the maintenance effort to date. In addition, for purposes of making reports to the Board of Commissioners, the residents, local public officials, EOCD and other interested parties, documented information is crucial. Regardless of the particular form of the work order program you develop, the following pieces of information should be available from a well documented maintenance program:

1. Vacancy turnover time and cost
2. Average work hours to complete work order activities
3. Average calendar time from request to completion
4. Productivity of staff
5. Distressed physical components that need to be added to the modernization program
6. Equipment needs and timing
7. Timing of purchasing requirements
8. Current inventory status
9. Origination of work requests (i.e. Emergencies, Inspections, Routine Maintenance, Preventive Maintenance Program, Requests)
10. Staff skills needed
11. Historical record of repairs by address
12. The cost of maintenance services by priority category (e.g. Emergency, Preventive, Request), type (e.g. plumbing, landscaping, painting) and location (e.g. unit, grounds, mechanical space)

LHAs may use a wide variety of systems to generate this information, from handwritten tallies on lined pads to highly integrated computerized record keeping systems. But some program of record keeping is vital to maintain and improve the productivity and efficiency of the public housing enterprise.

SPECIAL CONSIDERATIONS FOR LHA SIZES

SPECIAL CONSIDERATIONS FOR SMALL AUTHORITIES

NOTE

Partial records are more likely to be unhelpful than partially helpful.

F SPECIAL CONSIDERATIONS FOR LHA SIZES

SMALL HOUSING AUTHORITIES

The most significant differences in a small authority's work order system and that of a large LHA relate to the form of the record keeping. At a small agency, for example, you may find it possible to record all of the important pieces of information regarding maintenance work on simple hand-written forms kept in a loose-leaf binder. The summarizing of these records may be accomplished by spending an hour at the end of the week adding the numbers from the various columns. Integration with purchasing, inventory and staff evaluation programs can be accomplished through personal conversations in very small staffs (where one person may be maintenance supervisor, purchasing agent, and personnel specialist at the same time). In slightly larger staffs, simple memo-writing can take care of the communications issues. An example of a Maintenance Work Order Log, when used as an alternative to actual work orders, is included in Chapter 8.

It is important to note several things that should not change just because you are a small authority. First, the minimum pieces of information that should be reported do not change. The agency still needs to know what was done, by whom, using what materials and how long it took. Even though this record-keeping may not save you as many dollars as it does a larger LHA, you are working with fewer dollars. In the final analysis, each LHA must make the most efficient use possible of its funds and a good work order system helps make that possible. Another thing which does not change is the importance of recording all work on the work order system. Partial records are more likely to be unhelpful than partially helpful. In a small agency, recording 100% of the work on work orders should be relatively easy because of the reduced size of the staff and number of units.

Finally, there is no difference in the sources of work requests or the priorities. Small agencies still need an inspection program that generates work orders, as well as a Preventive Maintenance Program. And vacancies should still have a high priority, even if you have only one of them per month. The damage that one vacancy left unfilled, can do to a small LHA is no less significant than the damage done by a dozen a month at a larger authority.

SPECIAL CONSIDERATIONS FOR MEDIUM SIZED AUTHORITIES

MEDIUM SIZED HOUSING AUTHORITIES

The options in this size category have to do with the type of forms to be used, the information to be collected and the technical resources. Medium sized LHAs can choose a log system as noted above, but are strongly urged to use actual separate work order forms for each piece of work. The log is easy and reduces printing costs. However, in a medium sized agency you will probably need several logs, perhaps at different locations and more than one person has to learn to complete them. This variety of users or data recorders will detract from the consistency of your information. Separate work order forms allow information to be entered at the job site, thus improving accuracy. This style of reporting has more room to accommodate information that the worker wants to provide.

Managing more units often means the need to collect and report on more pieces of information. For example, you might want to monitor the various steps in the vacancy rehabilitation process (e.g. discovery, inspection, assignment, completion, showing, lease-up). If there is any problem, it may not be immediately obvious and this detailed information may help with the analysis and correction. Similarly, with more developments and more varieties of equipment, it may be useful to chart the maintenance record of various mechanical components against each other to see which is providing the best service.

Available for notes

You may be interested in other questions depending on the nature of your stock. Decide which issues to pursue by holding occasional review sessions with your maintenance workers and supervisors where you discuss aspects of the maintenance efforts that need more refinement or attention. In all probability these questions can be answered from the work orders or the work orders can be adjusted so that the answers can be determined in that fashion.

As a middle-sized LHA, you have the widest range of reasonable choices regarding computers and other types of administrative tools. Many middle-sized agencies continue to carry out much of their administration with primarily manual record-keeping. You may, for example, feel little need for computerization if you are still using fee accountants. Initially, financial functions will be the most easily converted to computer applications. The maintenance related uses come much later.

Computerization does involve a major commitment of time. As noted earlier, a computer is really a very fast adding machine that has the capacity to store a great deal of information in a small space. Someone must supply the computer with the information that it is to store. For example, a computer can add 1000 pairs of numbers in only a few seconds and it produces accurate answers in every case. However, it requires that someone spend several hours typing pairs of numbers into the computer, programming the computer to add them and further programming the computer to report the results. If this person makes any errors when entering data, the results will be flawed because the computer does not have the intelligence to know that the data are incorrect.

In short, you should carefully study the process of computerization, be aware of the advantages and disadvantages and know just why you want to move in that direction if that is your choice. You should be prepared to make the commitment of time to enter information and programs into the computer, the commitment of funds to purchase an adequate system and the commitment to use

NOTE

Procurement laws and EOCD computer procurement policies require LHAs to advertise and request bids for computer equipment, with particular rules for varying levels of anticipated expenditures.

the reports that begin to flow once the computer is in full operation. These are especially hard commitments for medium sized authorities to make, particularly ones that are growing from small agencies into medium sized ones. When everything has worked well on an informal basis, there is a temptation to believe that will always be the case.

As your LHA grows you should consult with other LHAs and with EOCD for advice on when to consider making the shift to computers. Consider converting to computer use when you begin to feel that your scheduling and planning are falling behind or when you know that your budgeting, purchasing and modernization decisions are based on guesses and not solid data.

After issuing an RFP and studying many options, EOCD has selected three companies and their associated computer software systems for recommendation to the housing authorities of Massachusetts. They are as follows:

- MCS
- Data Directions
- HABCo., Hawkins, Ash, Baptie Inc.

Each of these companies' systems runs on a variety of computer hardware. Each has many applications (General Ledger, Tenant Accounting, Accounts Receivable, Vacancy Log, etc.). Each has a work order application and with minimal effort this system can be integrated with the other functions in your LHA that we have discussed. EOCD strongly recommends that as you make the decision to computerize, you choose one of these systems in order to maintain compatible records with each other and with the EOCD system of data collection.

Computer purchases should be carried out in conjunction with the terms of EOCD's December 17, 1990 memo from Geoffry Forrest to all Executive Directors.

SPECIAL CONSIDERATIONS FOR LARGE AUTHORITIES

LARGE HOUSING AUTHORITIES

The number of units, workers and work requests in a large authority justifies computerization at some level. As noted above, the real advantages to computerization come when you have large amounts of data to manipulate and when there is an advantage to using single pieces of data in various applications. A larger agency, which may have information from 2500 work orders rather than 25, will benefit significantly from this method of administrative record keeping and analysis.

However, perhaps the best additional element that can be added is the integration feature. With a fully integrated system, an employee need only once type into the data base the fact that worker Jones used three new filters to perform the routine preventive maintenance on Boiler Number Three at Washington Terrace. That one entry may result in any or all of the following:

1. Another case added to the previous 47 preventive maintenance tasks on boilers over the last three years which updates the average number of filters used in such assignments.
2. An automatic subtraction of 3 filters from the inventory.
3. Another case added to the previous 36 uses of this type of filter updating the file on the average length of effective life for this brand.
4. Another case added to the previous 28 boiler preventive maintenance assignments that worker Jones has had, updating the average number of filters he has installed on each task and the average length of time it takes him to complete this type of task.
5. Another case added to the previous 55 filter change tasks for Boiler Number Three at Washington Terrace updating the file on how long filters are lasting in that boiler.

Available for notes

6. An entry into the files on number of Preventive Maintenance work orders performed.

7. An entry into a tickler file which will automatically send a signal (or even print a work order) at the point in the future where the filter should probably be changed again.

It is important to emphasize that EOCD does not recommend generating unnecessary reports. However, where more information will help the authority make better decisions and function more effectively and efficiently, then the computer might well be used to generate that information. You should be aggressive in asking for help in these areas from other LHAs who have experimented with the computer or from your Management Representative who can help you take the next steps in computerization for your agency.

INSPECTIONS

TABLE OF CONTENTS

INSPECTIONS

KEY CONCEPTS IN THIS CHAPTER:

- All elements of your property should be regularly inspected at least once a year. (page 3-2)
- All inspections should be completed by well-oriented inspectors. (page 3-4)
- All inspections should be recorded on appropriate maintenance or CIIS inspection forms. (page 3-5)
- All inspections should result in work orders for all items identified as needing repair. (page 3-6)
- An inspection program is a tool used to get information needed to monitor and maintain your property. (page 3-12)
- Every dwelling unit must be inspected by management staff at least once a year. (page 3-14)

INSPECTION: THE CORE OF THE MAINTENANCE DELIVERY SYSTEM

DEFINITION

Inspections are visual and operational examinations of parts of your property to determine their condition.

An inspection *program* is a systematic effort to assure that all components are inspected at the correct time, the results of the inspection are recorded and all work necessary to maintain and extend the useful life of the component is requested and completed in a timely manner.

KEY

All elements of your property should be regularly inspected at least once a year.

INSPECTION: THE CORE OF THE MAINTENANCE DELIVERY SYSTEM

The basic foundation for your entire maintenance program is your inspection effort. In order to take the best care of your property, you need to have trained eyes observe its condition on a regular basis. Some LHAs make the mistake of allowing their maintenance effort to be driven by requests from residents and others, rather than by the results of their inspections. When this is the practice, it means that untrained eyes are doing the observing and requests for work are coming to you in a sporadic and unprioritized manner. If this is your only source of information, you may spend a great deal of time repairing minor problems, while more significant issues escalate to become large and expensive repairs.

A good example is a slow toilet leak that goes unobserved by the resident. If inspections are not routinely conducted to identify that problem, it will not be noticed until staining occurs or a ceiling or wall are seriously damaged. What was once a minor leak, is also now a major ceiling repair. Inspections are vital if you seek to administer a truly professional maintenance program.

The basic goals of an inspection program are to improve the effectiveness and efficiency of your maintenance effort. This will be achieved when you have a thorough program of inspections where you observe all parts of the LHA's physical property, document the results of the inspections thoroughly, and convert the findings into work orders so that the work effort can be scheduled and organized. Inspections are the systematic observation of conditions and provide the foundation for capital improvements and long range planning, as well as a record of present maintenance needs.

A dwelling unit inspection has another purpose besides simply the physical examination of property. EOCD recommends that managerial staff conduct these inspections to learn about the needs of the residents. Your managers should engage family members in brief conversations while they are conducting inspections. They should listen and look for evidence of the need for any social services. At the conclusion of the visit, the man-

IMPORTANT

During your annual dwelling unit inspection you should look for signs of other family needs which might be met by your LHA.

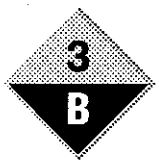
ager may request both maintenance services and other services that can be of help to the family.

It is important to emphasize that an inspection program is not just a chance to make site observations. At least 50% of any inspection is the documentation of what you see. To gain the maximum benefit from your inspections, you will need to assure that the observation is carefully made and that the recording of information and the assignment of work are carefully and consistently completed.

Any good inspection program has both a formal and an informal component to it. This chapter will deal primarily with the formal, scheduled and officially recorded inspection effort. However, the best maintenance workers, managers and administrators are always inspecting. They leave their offices or shops frequently and tour their sites for various reasons. As they walk, they observe all aspects of the development. When something is amiss, it is converted to a request for a more formal inspection or a work order as soon as the staff person is back at the desk. This constant site observation, though not an adequate substitute for a formal inspection program, is an important informal complement that assures timely knowledge of how your property is doing.

Recognizing the critical link between regular inspections, and capital improvement planning, EOCD has developed a tool to assist LHAs in this area. It is the Capital Improvement Inventory System (CIIS) which you should use to assess the current and future modernization needs of each of your developments.

CIIS forms, when used for a thorough inspection of all of your properties, will provide you with a current status report on the capital improvement needs of your housing stock. The status report will allow you to set priorities and make estimates of the costs of undertaking the work. These pieces of information will facilitate the preparation of a Comprehensive Long Range Capital Improvement Plan for your authority. Completing your Modernization applications will be greatly eased by the existence of such a plan.



PRINCIPLES OF A GOOD INSPECTION PROGRAM

IMPORTANT

You should:

1. Develop an orientation program for inspectors
2. Determine a reasonable inspection schedule
3. Develop a clear and simple inspection form

KEY

All inspections should be completed by well-oriented inspectors.

B PRINCIPLES OF A GOOD INSPECTION PROGRAM

There are a number of different types of inspections that should be conducted at your LHA. Each of these has some particular elements which are described below. However, there are some basic fundamentals which should be followed for any inspection. These are the starting points for designing or improving your inspection effort.

USE ONLY WELL-ORIENTED INSPECTORS

It is very important that all inspections be performed by individuals who have been specifically trained by your LHA in the procedures and standards of your agency. Even very experienced managers and maintenance people cannot look for the things that are important to you or record them in the ways that are useful for your system unless they have been prepared by you to do so. More information about how to undertake this training is included later in this Chapter.

ADOPT CLEAR STANDARDS

In the Commonwealth of Massachusetts, all dwelling units must meet the conditions described in Title II of the State Sanitary Code. This is the standard that EOCD uses. Your own community or your authority may wish to set a higher standard in one or more areas of physical property condition.

If you have units financed by the federal government (HUD) you will find they have their own standards embodied in their Housing Quality Standards (HQS). These are generally rather low standards. It is possible to pass the HQS standards without passing a Title II inspection, so your standards should at least equal those of Title II. In adopting a specific set of standards you should be clear about them, train your inspectors to understand and apply them and design your inspection forms to reflect them.

SCHEDULE INSPECTIONS WITH BOTH PROPERTY NEEDS AND MAINTENANCE CAPACITY IN MIND

Each inspection needs to be done at a particular interval. This interval depends on the natural life cycles of the components of the element being inspected. These scheduling needs should be met as a minimum requirement of a good inspection program. However, it is also very important that the resulting routine maintenance work generated by what is found in the inspections can be accomplished in a reasonable amount of time.

IMPORTANT

All elements of your property should be inspected at the intervals called for by manufacturers or industry standards.

As a general rule, inspections should be conducted on a schedule that allows for the work generated by the inspections to be completed in two weeks. One reason for this is to assure that residents do not feel the LHA is unresponsive when you find problems and then take months to repair them. In addition, postponing work for over two weeks may frequently mean that the conditions have changed. Different tools or kinds or amounts of equipment may be required. It is preferable to slow down the inspection effort when it is outstripping the capacity to perform work. This finding may also tell you something about the staffing levels or patterns at your agency.

The Capital Improvements Inventory System (CIIS) inspections should be integrated into this effort. There should be one master schedule for each building or site that identifies the timing of CIIS inspections as well.

KEY

All inspections should be recorded on appropriate maintenance or CIIS inspection forms.

WRITE DOWN THE RESULTS OF EVERY INSPECTION

To insure comprehensive accountability and efficient maintenance work scheduling, every inspection should result in a written report that documents, by specific location, the condition of every component that you inspected. The report will reflect the existing condition of a component so that it will be easy to determine over time when the component began to fail. For example, a roof may have been fine until 1989 since all previous inspections reported it to be in satisfactory condition.

KEY

All inspections should result in work orders for all items identified as needing repair.

NOTE

The informal 8 hour-a-day inspection:

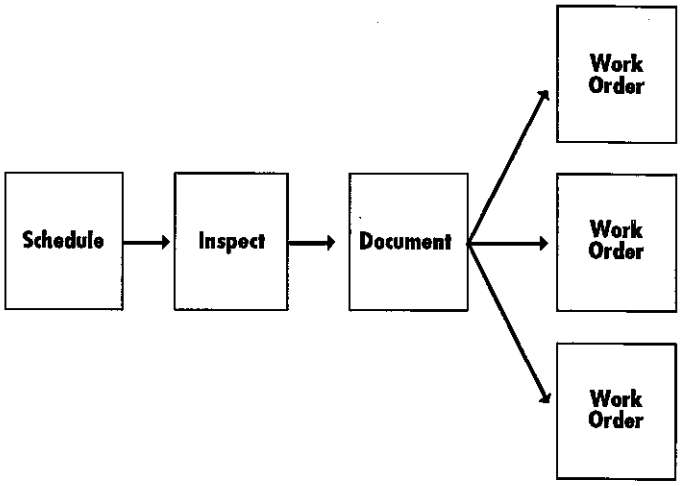
Inspection is a full time job. Part of that job is formal, officially scheduled, and should be fully reported. But each of your staff should view their job as including a constant responsibility to walk their sites, observing as they go, and identifying problems and potential problems with various components of the property. While this effort does not need to be totally systematic, your staff should generally plan to walk in different paths, and through different parts of the buildings so that they have the fullest opportunity to walk past something that might need to be noted. Your staff should also learn to always have paper and pencil with them so that they can make notes about observations as they walk. Since inspecting is primarily looking and recording, your employees should always be prepared to do both.

The 1990 inspection reported two small leaks that were subsequently patched. Now the 1991 inspection reports several significant problems. Can we recover any repair costs from the warranty since we can show clearly that the failures began in 1990? Are the leaks significant enough that we should replace the roof? What has been the inspection report pattern on similar roofs in our other developments? Model maintenance inspection forms are included in Chapter 8.

The CIIS forms are inspection reports that should also be completed at appropriate intervals — probably every three years. These will serve to continually update your long range capital improvement plan.

PREPARE WORK ORDERS

Once the inspection results have been recorded, prepare work orders for all necessary tasks. As explained in Chapter 2, work orders should detail for the worker what work needs to be done and where it is located. The work order should also carry some priority so that the worker knows its importance. These documents then go to the hands of the scheduler so that they can be grouped appropriately and assigned to workers in an efficient manner.



Available for notes

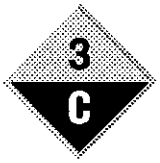
PREPARE CIIS FORMS

These documents contain a consistent approach to examining your housing stock for the purpose of formulating long range capital improvement plans. Your property is divided into several groups of components by the CIIS forms:

- Site Systems
- Building Architectural
- Building Mechanical and Electrical
- Mechanical Room
- Dwelling Unit

For each group, there are standard categories of systems, with codes for components, ages, types, sizes and other descriptors, and definitions of what is meant for that system by the actions of major repair, replacement, add or preventive maintenance.

These materials are used by you or your modernization staff to document the capital needs of your LHA. They are a critical element in quantifying the needs of your agency and all other public housing authorities in the state.



GOOD INSPECTION FORMS

C GOOD INSPECTION FORMS

In order to insure uniformity and accountability, each inspection report should have sufficient space to quickly and easily record at least the following information:

- The exact location of the inspection
- The date of the inspection
- An assessment of the condition of each element of the apartment or other place being inspected
- A space to record work order numbers for identified repairs
- The name of the inspector

Below is one example of a dwelling unit inspection report. Note the code for conditions which appears in the box in the lower right hand corner. The "code #" box on the form is marked with one of these codes. Other key items, as noted above, are called for on this model. A full size copy appears in Chapter 8.

Inspection Form Format — Dwelling Units

_____ **HOUSING AUTHORITY**
Living Unit Inspection Report

Address: _____ Unit #: _____ Specified Location: _____

Location: LIVING ROOM DINING ROOM BEDROOM HALL STAIRWAY ENTRY HALL MISC.(SPECIFY) _____
Circle one

ITEM	CODE	WORK REQUEST DESCRIPTION	WORK ORDER #
Entry door and hardware			
Floor/floor covering			
Walls			
Interior decoration			
Trim			
Ceiling			
Doors			
Windows			
Screens			
Switches			
Lighting			
Receptacles			
Heating unit			
Closet			
Thermostat			
Stairs			
Handrails			
Intercom - doorbell			
Mailbox			
Sprinkler head			
Smoke detector			
Emergency call switch			

Remarks:

Code Reporting Key
1 = Acceptable
2 = Repair
3 = Clean
4 = Replace
5 = Paint
6 = Not applicable
7 = Other (specify)

Inspected by: _____ Date: _____

Available for notes

For all location items it is particularly important to be as specific and as consistent as possible. Compass directions (e.g. north, east) are not helpful as locators because inspectors rarely carry compasses and not everybody has an accurate internal compass. Locate rooms or spaces in relation to other rooms or spaces that are least likely to change or move. Consistency from inspection to inspection is important so that changes in the condition of elements of your property can be measured over time.

Having a space for indicating work order numbers is a good method for reminding your inspectors that work orders must be created for every deficiency found during the inspection. These spaces should be large enough to write the numbers legibly.

The "Remarks" section can be used by your managers to request non-maintenance services when they observe such needs during inspection visits.

When something other than a dwelling unit is being inspected, you may find a different form useful. Below is an example of a generic inspection form that can be used for many different types of inspection: Chapter 8 includes a full size version of this form with suggestions for column headings for a variety of inspections.

Inspection Form Format — Generic

HOUSING AUTHORITY

Report of inspection of

Development	Date	Inspector

1	2	3	4	5

Reviewed By _____ Date _____

HAND HELD COMPUTERS FOR INSPECTIONS

D HAND HELD COMPUTERS FOR INSPECTION

An alternative to the manual completion of inspection forms is the use of a hand held computer. This technology has been developed by several companies for a variety of purposes (e.g. meter reading, inventory control) and software has been developed specifically for the purpose of conducting public housing inspections. You may want to consider this alternative if it makes sense for your agency.

The hand held computer is a programmable device that is the size of a portable telephone and weighs about one pound. It can be carried comfortably in one hand. The software preprogrammed into the computer leads the inspector through the inspection by listing the items that are to be observed. By either punching buttons on the instrument, or by scanning a bar code with a light wand, the inspector indicates the condition and the required action, if any. While the actual inspection may not require noticeably less time, the real advantage is in the completion of the inspection documentation. At the end of a day of inspections, the hand held computer is plugged into a normal personal computer and it then automatically prints an inspection report and the necessary work orders. This can be completed overnight so that the appropriate documents are ready for checking and distribution the next morning at the start of business. More information about this innovation is included on page 10-11 with other reference materials.

CATEGORIES OF CONDITION

DEFINITION

The inspection report should identify the condition of the building elements as requiring:

- No immediate action (acceptable)
- Cleaning
- Minor repair
- Major repair
- Replacement
- Initial painting

CATEGORIES OF CONDITION

Various LHAs have different ways of recording the information they observe during an inspection. In general, we believe your system should evaluate conditions according to the following categories of maintenance need:

NO IMMEDIATE ACTION REQUIRED (ACCEPTABLE)

The element is in the condition you would expect for its age and use. It is safe, functioning adequately, reasonably efficient and acceptable in appearance. Normal wear and tear is present and routine maintenance is required, but nothing more.

CLEAN

The element is in an acceptable condition except that it needs a thorough cleaning. This category in not meant to include routine cleaning which should be scheduled as a regular part of your preventive or programmed maintenance activities.

MAKE MINOR REPAIRS

The element needs some small repairs in order to reach acceptable status. Typically, this category is applied to deficiencies that appear to require modest levels of skill, time and expense to complete.

MAKE MAJOR REPAIRS

The element needs significant repair work in order to reach acceptable status. This category should reflect problems that appear to require substantial skills, time and money to complete. Major additions (e.g. installation of a new zone valve, or planting of new trees) that can be accomplished within the maintenance budget are included here, also.

KEY

An inspection program is a tool used to get the information needed to monitor and maintain your property.

REPLACE

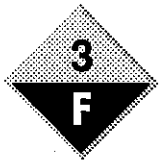
The element has out-lived its economic usefulness and should not be further repaired or maintained, but replaced. As with several other categories, this one requires judgement. At what point is a particular component no longer economically sensible to maintain? If we make this repair, will it last for three more years or will we have another problem in three months? Only experience and expertise can help with these decisions and your LHA should attempt to have as much of that available as possible when decisions of this nature must be made.

PAINT (FIRST TIME ONLY)

This category is not meant to identify routine painting assignments, which should be part of the regular preventive maintenance program. Rather, it is a way of noting the need to paint an item for the first time after it has been installed or significantly renovated.

You may choose to call these categories by other names, but it is important to cover each of these conditions with one of your categories. It is not advisable to have more categories than listed here, because subtle distinctions between levels of repair are not useful for planning, budgeting or scheduling purposes. On the contrary, it may be advisable, in certain situations, to collapse the Minor and Major repair categories into one in order to simplify the inspection process. The goal is to develop a set of categories that can be easily understood by a wide range of people and easily applied by the inspectors. The categories also need to be as mutually exclusive as possible so that it is clear to a wide range of people which description fits which condition.

It is important to remember that, as a tool, inspections are a means to an end rather than the end themselves. You undertake inspections *in order to provide the information needed to monitor and maintain your property.* You should not waste any money or time collecting data that does not serve those ends.



WHAT TO INSPECT

- Dwelling Units
- Buildings and Grounds
- Mechanical & Electrical Systems

NOTE

You should inspect to at least the standards of Title II of the State Sanitary Code.

WHAT TO INSPECT

Your physical property can be divided into three broad categories, each of which has its own inspection needs. In the following paragraphs, we will describe each of the three elements and outline the important parts of an inspection program for that portion of your property. One key element in the design or redesign of your inspection programs is their integration with EOCD's Capital Improvement Inventory System (CIIS). This is the system adopted by EOCD for the assessment of modernization needs by each LHA in the Commonwealth. The more your system is able to parallel the CIIS vocabulary, categories and action descriptions, the more easily you will be able to: update your CIIS information for EOCD; have comparable data over time: and minimize duplication of inspection efforts.

DWELLING UNITS

The core of your inspection program should be the annual dwelling unit inspection. At least once a year every LHA dwelling unit should be systematically observed by carefully oriented inspectors. In addition, every time a unit becomes vacant it should be inspected so that the necessary repairs can be made to prepare the unit for the next resident. There are several important principles for dwelling unit inspections:

■ Have a clear standard against which you are inspecting.

The goal of the annual living unit inspection is to insure that every unit you own meets the minimum standards for safe, decent and sanitary housing that your authority has adopted. In Massachusetts, this means the unit must at least conform to the standards of Title II of the State Sanitary Code.

DEFINITION

A dwelling unit inspection is the observation of all the elements of your property that are included within the walls of the private living area for a single household.

KEY

Every dwelling unit must be inspected by management staff at least once a year.

Dwelling Unit Inspection Calendar

- Annually
  + every dwelling unit
- Upon occurrence
  + every vacancy

■ Use only well-oriented inspectors.

It is very important that the staff who will undertake the inspections be carefully oriented. Even an experienced inspector needs to learn about the individual quirks of your housing units, as well as any unusual standards adopted by your agency. In order to be certified by your LHA to conduct dwelling unit inspections, each of your managers and other staff who will perform this task should complete this orientation process.

■ Use management staff to conduct inspections.

EOCD believes it is very important that members of your management staff conduct the dwelling unit inspections. There are two reasons for this policy. The first is the general idea of checks and balances. If the workers who will have to actually perform the work do the inspections, they may tend to overlook some tasks they know won't be pleasant or easy to do. In order to avoid this temptation, the management staff should inspect and identify the work to be done, and the maintenance staff should carry out the work. Secondly, as noted earlier in this chapter, the annual visit to each of your resident's homes should be used to look and listen for other information about family needs in addition to maintenance related matters. In general, management staff is likely to be more able to make these observations than other staff. If your LHA does not have site managers, you should think about who among your staff can fulfill this role most appropriately.

IMPORTANT

Dwelling unit inspections should be conducted by:

Your *management* staff who have been oriented, trained and "certified" by you to inspect at your LHA.

Dwelling unit inspections are *not* meant to be highly technical and they do not have to be carried out by technical experts.

■ Inspect all elements of the dwelling unit.

Your workers should systematically observe the condition of all elements of each unit, record the condition of each and complete work orders for any work necessary to bring the unit into compliance with your LHA standards. EOCD urges every authority to move toward a condition where a substantial proportion of your work orders are generated through the inspection program. When this occurs, potential emergencies are headed off before they become emergencies and resident calls drop off significantly since you are finding the work before the residents notice it. In general, if the inspection and work order program is fully in place, your professionals are in charge of the maintenance program at your authority and this is the goal of every quality maintenance program.

Adequate time should be allowed to conduct each dwelling unit inspection. Our experience indicates that it takes 15 to 30 minutes to conduct a thorough inspection in an occupied apartment at a prearranged appointment with the occupant present to comment on equipment that does not work in the unit. It takes another 15 to 30 minutes to complete the inspection report and to convert any deficiencies into work orders that include estimates of time and materials.

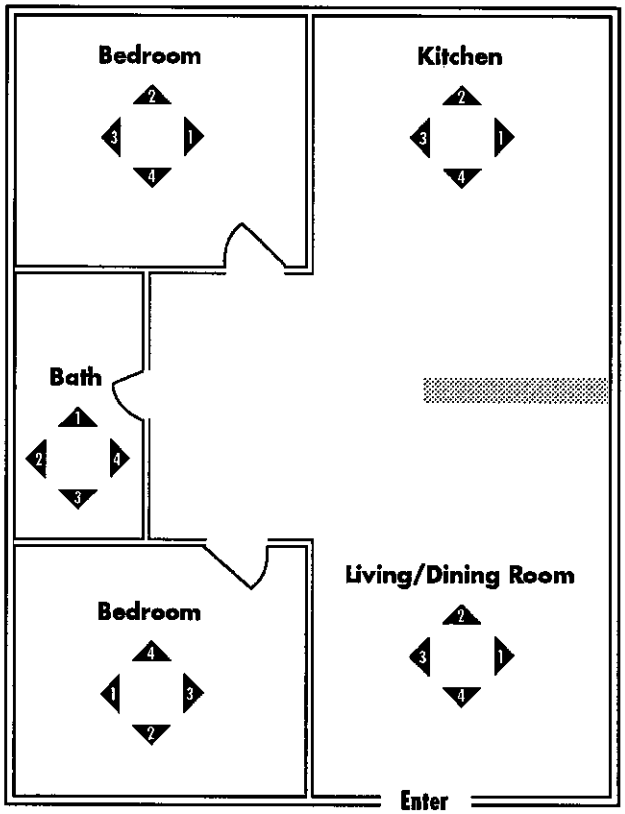
■ Develop a systematic approach to each dwelling unit visit.

A key to good dwelling unit inspections is a systematic approach to the tour through each apartment. Start each visit in the same room (e.g. the living room or the kitchen) and systematically look at certain elements in a specified order (e.g. ceiling, wall to the right as you enter the room, wall straight ahead, wall to the left, wall behind you, floor, electrical outlets, etc.). Then move on to another specified room and complete the observations in the same order. As this routine becomes familiar to inspectors they will be better able to focus their full attention on observing and recording rather than on deciding where to go or look next.

Available for notes

The system illustrated below (one of many possible approaches) uses the rule of entering a room from the primary door, turning to the right to examine that wall and proceeding counterclockwise around the room. Additional items such as ceilings and floors can be observed once initial wall inspections have been completed.

Order of Observations



■ Schedule inspection visits with adequate lead time.

Regulations require that residents be given notice 48 hours prior to an inspection. This time period is referred to in your lease and should be carefully honored. Giving adequate notice will often mean the apartment has been cleaned before you arrive, thus making the inspection easier. In addition, having the residents present usually helps things move along, since they can tell you if they

Available for notes

have been having trouble with any building component or equipment. Some residents also consider the inspection a social occasion where conversations are in order. Workers should be trained to move efficiently through the apartment while being polite and answering questions as they are able.

■ Use inspection forms that allow for full reporting of the findings of the inspection.

A sample of a condensed dwelling unit inspection form is included in Chapter 8. Here are the most important elements of the living unit that should be examined:

- Ceilings
- Walls
- Windows
- Floors
- Doors (exterior and interior)
- Cabinetry
- Fire and smoke detection
- Appliances
- HVAC fixtures
- Domestic water fixtures
- Electrical fixtures

Clearly, not every room will have all of these elements. The best inspection forms include a page for each room, though these are bulky to store. When a room does not have a particular element (e.g. domestic water fixtures) the inspector can simply mark N/P for Not Present. But your inspectors should observe and record information about every aspect of every room that is present in order to conduct a complete survey. For completeness and consistency, it is important that an element inspected and found to be in good condition be recorded as "Acceptable" in order to build a good historical record for that element and to ensure that the inspector has observed everything he or she was sent to inspect.

IMPORTANT

Inspection reports should note that each room and building element has been checked, even if no deficiencies are observed.

BUILDINGS AND GROUNDS

There are two important components to this category of inspections. The first is the elements of your developments that are a part of the residential buildings but are not in a unit. Examples include the roof, public interior spaces, basement mechanical and storage rooms and exterior surfaces of the buildings. The second component of this category is the elements of the site that are not a part of the utility systems. This includes sidewalks, parking areas, benches, fences, trees and shrubs.

Many of the principles that apply to the dwelling unit inspections should be followed here, as well.

■ Develop clear standards

Establish a clear set of standards and train all staff in how to use these standards. Of the three inspection areas, this is the one with the least clear standards from other sources. You may have to develop your own criteria for acceptable conditions for many of the components within this category.

■ Use only well oriented inspectors

For these inspections, the management staff may need to bring maintenance staff with them. Although these are not meant to be highly technical observations, some maintenance presence may be helpful for interpreting particular conditions. The orientation process is particularly important for all inspectors because the standards are less common from LHA to LHA in the area of buildings and grounds.

■ Inspect all elements of the component

This set of inspections includes many items which are replicated throughout buildings and sites. It is important to use enough reporting forms that an accurate picture of each part of the development is presented. For example it

DEFINITION

Buildings and grounds inspections are those which examine elements of your property that are not within private dwelling units and are not a part of the mechanical and electrical systems.

Buildings and Grounds Inspection Calendar

- Semi-annually
  + exterior surfaces
- Quarterly
  + roofs
- Monthly
  + interior public space, built site improvements
- Weekly
  + natural elements

is not adequate to examine the roof only near the penthouse access area and then rate the entire roof as acceptable. Nor is it adequate to observe poor lawns in one area of the development and describe the entire grass situation as disastrous. Your inspectors may need four forms for reporting on the grass situation in four different quadrants of the development, or a site plan may be helpful. An analysis of the best way to record the findings of your inspection of buildings and grounds is an important element in planning your inspection program.

■ Schedule thoughtfully

It is important to allow enough time for these inspections. Since they cover the widest physical area of all the inspection components, walking time must be included in the total time estimates. Requiring an employee to complete these inspections too quickly only invites the sort of incomplete inspection that you want to avoid. It is also important to schedule these inspections appropriately within the day, week or month in which they are supposed to occur. Conducting a grounds inspection on Friday afternoon does not make a great deal of sense because by the time someone can be assigned to making corrections on Monday, things may have changed. Similarly, it is helpful to conduct roof inspections just after significant rainstorms in order to check most accurately for pooling and leaks. Good planning will assure schedules that make sense.

■ Use a systematic approach

By examining the site maps and building plans that you should use to label the components of your property (Catch Basin #24, Smoke Detector JV-14 in Johnson Village, or the Front Yard), you can design an efficient inspection path that will take you by the items that need to be observed with the fewest steps.

Available for notes

■ Examples

The components in the Buildings and Grounds category can be broken down into a number of subcategories. The following are examples of some of these elements and notes about how to conduct inspections for them.

1. Roofs

You should inspect your roofs quarterly for cracks, bubbles, missing shingles, weakened parapets, clogged drains, excessive puddles and other problems that are related to particular types of roofs. This category also includes any structures on the roof, such as penthouses, roof decks, mechanical equipment enclosures or storage sheds.

2. Interior public spaces

You should observe the interior public spaces within your structures on at least a monthly basis, with some heavily used areas like halls and lobbies requiring more frequent inspection. This group of elements includes all corridors, lobbies, stairways, offices, community spaces, laundry rooms, common basements and other places that are inside the building, but not inside an apartment. Each of these spaces should be inspected systematically with the same routine in each room as is the case in dwelling unit inspections. Where some of these rooms contain fixtures, appliances or cabinetry, they should be included in the inspection of the room itself.

3. Exterior building surfaces

The outside of your building should be inspected semi-annually. This group of observations includes the exterior walls of the building, storm windows and screens, storm doors and screens, exterior building doors and vestibules and any building appurtenances (decks, porches, greenhouses, garages, etc.)

NOTE

Buildings and grounds inspections should be carried out by managers accompanied by laborers. These are mostly non-technical inspections, but may benefit from some maintenance knowledge being present.

4. Built site improvements

This subcategory of buildings and grounds includes all elements of the site that have been constructed there. As with the natural site elements, informal inspections of these physical aspects of your developments occur on an almost daily basis. However, such informal inspections do not typically get recorded. Regular monthly inspections should be formally scheduled and conducted to assure that needed work is accomplished and that a historical record is kept of the maintenance needs of each of these items. Special events, such as large rain or snow storms, outdoor parties or major maintenance work on some other part of the development may create the need for additional "special" formal inspections.

Built Site Improvement Checklist	
Development:	
Roadways	
Parking areas	
Curbs	
Sidewalks	
Stoops	
Benches	
Lighting	
Fences	
Fountains	
Signs	
Play equipment	
Retaining walls	
Dumpster enclosures	
Drying yards/clotheslines	

Available for notes

5. Natural site elements

This subcategory includes all natural elements that are present on the site such as grass and other ground cover areas, flowers, shrubs, hedges, trees, and water. You should have an as-built site plan for each of your developments which should identify and dimension the large open areas of the site, and locate the important trees and shrubs. Using this plan, the inspector should check the condition and maintenance needs of the natural elements of the site on a weekly basis. Intensive inspections and additional work will be needed at the seasonal points in the year when plants need special attention.

DEFINITION

Inspections of the mechanical and electrical systems are those which make observations of the systems that bring utilities and other critical services to the dwelling units of the LHA's properties. These inspections include examinations of the supply lines and controls and, in some instances, the generating points and/or the final distribution points.

MECHANICAL AND ELECTRICAL SYSTEMS

It is important to understand the mechanical and electrical elements of a housing development as systems. If any one part fails, it can compromise the entire network. The more your employees can think of these complex, technical components as single entities, the easier it will be for them to conduct well coordinated and thorough inspections. Many of the same rules noted above apply to these, more complicated inspections.

■ Inspect to a clear standard.

Often these standards will be established by the codes of your community or the Commonwealth. In other cases, the manufacturer or a professional organization will have set standards to which you will want to adhere. Determine exactly which standards are most important and make certain that the inspecting staff understands those criteria. In all cases, the inspector must ask the following questions:

- Is the system component safe?
- Is the system component functioning?
- Is the system component working efficiently?
- Is the system component attractive?

These questions are listed in hierarchical order. If the system is not safe, it must be fixed. There is no choice. If the component is safe but not functioning, it may have to be fixed if it is an important component, but in some cases (e.g. a valve frozen open which rarely needs to be shut, or a hinge broken so that a trash chute door stays open) the repair can be postponed if no resources are available. Inefficient systems and unattractive systems can wait for repairs if other matters have higher priorities.

Mechanical and Electrical Systems Inspection Calendar

- Annually
  + water systems, sanitary drains, utility lines
- Semi-annually
  + public space utilities, exhaust fans, heating plant components, catch basins
- Quarterly
  + emergency lighting
- Monthly,
  + electrical transformers, building level utilities, elevators, emergency and security systems, heating plant components, water system
- Weekly
  + refuse chute openings, heating plant components, water system, condensate pumps, mechanical room safety equipment, compactors, site electrical distribution
- Daily
  + heating plant components, water system

■ Use only qualified inspectors

It is important to have qualified technical expertise involved in the inspections of service systems. You may decide to have the management staff conduct the observations along with the staff, but unless they have had special training, they should not attempt to complete these inspections alone. The task can be delegated. If you are concerned about the importance of checks and balances, you can contract for the inspection work with outside technical experts — engineers, or service professionals. Whatever method you use, it is important to bring the appropriate expertise to these inspections.

■ Inspect all components of the system

As noted above, a system has many parts. They all have to work for the system to work. This means the routine inspection of all components and their continual maintenance is very important.

■ Schedule inspections appropriately

Manufacturer's suggested schedules for inspection and maintenance are the most helpful guidelines for timing in these areas. We have suggested general guidelines for some components later in this chapter, but use the manufacturer's literature for your systems and the help of professionals on your staff to set up the schedules for these inspections.

■ Use a systematic approach

Using a systematic approach makes particular sense when conducting inspections of a system. Some systems are best inspected from the source, through the controls and the distribution links, to the final appliance or fixture. Others work best when checked in the other direction. In still other cases, it does not matter. Arrange your scheduling of activities to take advantage of the appropriate choice for each system. Then follow that approach each time you inspect that system and its components.

Available for notes

■ Examples

The following components are items that are likely to need inspecting as a part of your mechanical and electrical systems inspection program. This list is a good starting point, although it is not exhaustive, and your LHA may not have some of the components, or it may have some items not listed here.

1. The heating, ventilating, and air conditioning system (HVAC)

The heat generating plant (usually thought of as the boiler) and its associated mechanical elements are probably the single most important and complex piece of equipment that you will have to inspect and maintain. This equipment generates the heat that you are legally required to provide, whether centralized in one large mechanical room for an entire development or individualized so that each building or apartment has its own small unit. As fuel prices have risen over the last decade, the heating industry has developed more and more sophisticated devices to maximize the efficient use of those fuels. Heating systems, unlike many other utilities, need to be constantly fine-tuned to respond to external conditions over which you have no control. All of this makes the Heating Plant Inspection Program a particularly important part of your HVAC inspections.

Once the heat generation plant inspection has been scheduled, the remaining parts of the HVAC system can be added to your routine. This includes the facilities for fuel storage and transfer, devices for sensing the outside temperature and calling for heat, pipes and valves that bring the fuel to the boiler and distribute the heat to the apartments, controls that regulate the flow of heat, pumps that return condensate to the heating plant and fans for exhausting excess heat. Some of the components will be in the same space as the heat generating plant itself while others will be inspected through manholes on the site or found in individual buildings where the heat is being redistributed from the central system into the individual

IMPORTANT

Mechanical and electrical systems inspections should be conducted by management staff with mechanics or technicians present. These are technical inspections and require specific, skilled observation. Management staff should feel free to ask questions of technicians during the inspection.

apartment systems. Within common and public spaces in the apartment structures themselves, inspect the space heating devices (e.g. radiators) that are the end of the distribution system.

In many cases, your heating, ventilating and air conditioning components will be one integrated system. Where this is not the situation, you will need to identify the components that are independent of the main heating system and schedule appropriate inspections for them. See your manufacturer's literature for suggestions.

See Chapter 8 for a model generic inspection form that can be tailored to fit your particular equipment and a recommended schedule for inspection and maintenance.

2. Water system

Most developments will be tied into municipal water systems except for some LHAs that use wells (and need to create a well inspection routine). This means the inspection program begins at the valve where the LHA system is linked to the town's system.

As with the heating system, some of these elements will occur in a central mechanical room, while others can be observed in manholes throughout the site, individual building mechanical rooms or chase spaces. Tracing the system throughout your site is important so that you understand how all the components are linked. The manufacturer's recommendations for inspection and servicing frequency should be followed.

3. Sanitary system

This system is a collector, rather than a distributor. As a result, the inspections may work best from the building level through the inlets, pipes, valves, lift stations and pumps to the municipal system tie-in, on-site packaged treatment plant or septic field.

Available for notes

4. Storm drain system

Depending on the nature of your sites and the presence in your community of a storm drain system, you may have a network of catch basins and piping at your developments. It is advisable to inspect and, if necessary, clean each catch basin at each site on a semiannual basis. This will prevent flooding conditions and also insure a sanitary site. Catch basin locations and numerical designations should be shown on the site plan noted above so that inspection information can be recorded accurately and attributed to the correct basin. These inspections can be particularly important in avoiding expensive and time consuming blockages and breaks in the entire site drainage system. Many LHAs use a contractor for this work. See Chapter 6 for guidance on contracting procedures.

5. Electrical system

Electricity typically is supplied to you by a municipal agency or by a private utility company. Your responsibilities and inspection program should begin with the transformers that convert high voltages to appropriate levels for your buildings and individual units. Transformers can be on the site, in the mechanical room or elsewhere in the building. Each transformer should be identified and located on an appropriate plan. The manhole, vault or enclosure should be inspected monthly to assure that it is clean, dry, well lit, free of storage material and secure from unauthorized entry. The transformer enclosure should be opened, entered and thoroughly observed by a qualified inspector. It is important to follow through with the inspection of the other components of the system once this critical piece of the electrical system is inspected. These include the wiring to the buildings, electrical control panels, building level transformers, meters and wiring to the individual apartments.

Available for notes

6. Emergency systems

The Emergency System is comprised of several components. The first is the smoke and heat detecting devices. These come in a wide variety and their inspection should strictly follow the manufacturer's recommendations. This is particularly true of the battery operated types although the hard wired devices will also require frequent cleaning in order to function properly. Regular inspections will reveal whether the recommended maintenance schedule is adequate to ensure the safety of your residents.

Emergency lighting devices constitute the next part of this system. These units, located in all public and mechanical spaces should be inspected and serviced on a quarterly schedule. They should be identified and numbered on a building plan. Test each unit for correct operation, adjust the lamps and check the batteries as part of the required inspection and service. Inspect lighted exit signs monthly as a part of this program.

The fire control system is the final component of the emergency system. It is comprised of sprinklers, fire extinguishers, and hoses. Use manufacturer's recommendations to guide the frequency of these inspections. Your local fire department can assist in this procedure. They may also require an inspection and testing procedure of their own.

7. Security systems

Regularly inspect any alarm devices, television monitors, locks and door buzzers as called for by the manufacturer. These systems help people to feel safe and to actually be safe. If the systems are not functioning properly, neither objective can be met.

Available for notes

8. Elevator system

Each elevator and the related equipment should be inspected by a licensed contractor not less than once a month. Routine servicing should be accomplished at the same time and any other necessary, non-emergency maintenance should be performed within two weeks. In addition to checking for basic safety and operational condition, it is important that the inspection review the cab, elevator shaft, shaftway door, controls and elevator mechanical room for cleanliness, lighting and smooth operation. Managers and site staff can complete the cosmetic inspection of the elevator cab but all mechanical aspects of the elevator must, by law, be examined by licensed inspectors.

9. Solid waste disposal system

These systems take many forms. If you have chosen dumpsters, these must be inspected as a part of your buildings and grounds inspection. The same is true of trash cans and other traditional approaches. However, if incinerators or compactors are a part of your methodology, they fit more neatly into this part of the inspection program.

Refuse chutes, whether inside the building or outside, are the means for getting the solid waste to its final on-site destination. These chutes should be inspected weekly to insure that they are operating safely and adequately, the area around them is well lit and free of improper storage and any sprinkler system installed in the chute is working properly.

If you have an incinerator it must be monitored closely to assure that you are not in violation of any environmental laws. Check your manufacturer's advice for inspection and maintenance and follow it closely.

In the case of all solid waste compactors, you should inspect, clean and service each unit according to the manufacturer's recommendations (probably weekly). A specifically trained worker should be assigned to this task.

WHEN TO INSPECT

SAMPLE CHECKLIST

G WHEN TO INSPECT

The table below summarizes the information presented earlier in this chapter. It gives a general indication of the frequency at which various components and subcomponents of your property should be inspected. It is an example of a method for preparing an annual inspection plan. Your manufacturer's recommendations or direct experience should assist you in tailoring such a calendar for your own agency. EOCD recommends developing such a calendar and scheduling actual inspections through the issuance of work orders for each inspection task.

Calendar

INSPECTION CHECKLIST	ANNUALLY	SEMI ANNUALLY	QUARTERLY	MONTHLY	WEEKLY	DAILY	UPON OCCURRANCE
Dwelling Units	✓						VAC
Building & Grounds							
Roofs		✓	✓				
Interior Public Space				✓			
External Surfaces		✓					
Built Site Improvements				✓			
Natural Site Elements					✓		
Mechanical & Electrical Systems							
Heating, Ventilation and Air Conditioning	✓	✓		✓	✓	✓	
Water	✓	✓		✓	✓	✓	
Sanitary	✓	✓					
Electrical	✓	✓		✓	✓		
Emergency			✓	✓	✓		
Security				✓			
Elevator				✓			
Solid Waste					✓		
CIIS	*As needed — not less than 3 years*						

THE TRAINING OF GOOD INSPECTIORS

THE TRAINING OF GOOD INSPECTORS

Maintenance inspections should be carried out primarily by your trained staff. These inspectors can come from any part of the authority's organization as long as the same personnel will not be performing the actual maintenance work generated by the inspection findings. Most LHA inspectors are from the managerial staff and many administrators feel that conducting inspections brings them closer to the physical conditions, staff and residents.

Inspectors must be observant, attentive to detail and diligent in their follow through. A good training program will include an orientation to your developments and to the following topics:

1. The minimum standards which must be met by the elements being inspected (e.g. Title II of the Massachu setts State Sanitary Code)
2. Deficiency definition and recognition (e.g., Acceptable, Clean, Minor Repair, Major Repair, Replace, Paint, etc.)
3. Labor and materials estimating
4. The basis for resident charges
5. Use of your own forms for documenting inspection findings
6. Work order completion

The best forms of training programs use a combination of teaching methods, including lectures, discussions, case studies and actual practice inspections. You will want to assemble all of the following material in order to run a good training program: written inspection procedures, reporting forms, work orders, manufacturer's recommendations, cost estimating data, job descriptions, collective bargaining agreements and personnel policies.

Available for notes

Some LHAs have staff available who are excellent trainers by nature and can provide these courses for new inspectors. In other cases, the LHA may have a person who is a wonderful mechanic but not a very good teacher. We recommend strongly that if you do not have a very good teacher on the staff, you look outside for a training consultant. A poor training program can actually do more damage than good. Therefore, LHAs are advised to thoroughly prepare their training curriculum and to choose good teachers who also know something about maintenance. This combination will result in well trained inspectors. These inspectors will, in turn, produce sound inspection reports based on good observation skills which will allow you to plan an efficient and effective maintenance program.

SPECIAL CONSIDERATIONS FOR LHA SIZES

IMPORTANT

Inspections should always be performed by someone other than the person who will do the work.

At small LHAs, the executive director may have to be the inspector.

SPECIAL CONSIDERATIONS FOR LHA SIZES

The nature of an inspection program is often a function of the LHA size. Basic principles remain the same but task performance may vary.

SMALL HOUSING AUTHORITIES

For small LHAs, the primary issue with inspections is who will conduct them and how they will be trained. EOCD considers it important that the inspector not be the person to ultimately perform the maintenance work. In many cases the Executive Director is the only reasonable choice for this task in a small authority. While this may seem to be a menial task for the Director, it should not be seen that way. The inspection program, after all, drives the entire maintenance program when done correctly. If the Executive Director completes all the inspections, he or she will have a thorough understanding of the condition of physical property at the LHA.

However, the ability to obtain good inspection training can be difficult in such a situation. An experienced skilled employee may be able to train a new person on a one-to-one basis. It is hard to mount a good training program if the senior person in the agency does not have a good understanding of inspections. In such a circumstance, your LHA should turn to other educational sources. These include larger authorities or groups of small agencies, community colleges in your area, technical schools, professional organizations and special private programs. This training is essential if you are to conduct thorough and accurate inspections leading to a sound maintenance effort.

Otherwise, small authorities should follow the same fundamental principles that are outlined in Section A of this Chapter. You may have fewer buildings, living units or mechanical rooms to inspect, but those you do have should be given the same thorough treatment as those in a large, well staffed agency. The time frequencies for inspections of small LHAs are the same as for any LHA, since they are dictated by the equipment and not by the owner of the equipment.

SPECIAL CONSIDERATIONS FOR MEDIUM SIZED AUTHORITIES

IMPORTANT

Medium sized authorities should consider whether computerization of inspections programs is cost effective.

MEDIUM SIZED HOUSING AUTHORITIES

At a medium sized LHA, there are more possibilities for who might conduct the inspections. Although management staff are still the best candidates, there may be alternates that make particular sense in each case. Medium sized LHAs may be large enough to generate an in-house training program using a staff trainer who has this task, in addition to others, in his or her job description.

A significant option comes in the recording of the information from the inspection forms. At a medium sized LHA, it may still be possible to log this information in by hand. Alternatively, volume may be great enough to justify entering the information into a computer. This allows much greater manipulation of the data once it is entered. Since one function of the inspection program is to help define project staffing and budgeting needs, it may be helpful to use computer technology to speed calculations regarding budgeting, staffing and purchasing.

Scheduling of the inspections themselves, may be somewhat more complex at this size LHA. With fewer than 200 units, inspections can be grouped easily and in a variety of ways. On the other hand, with 1600 units the scheduling and coordination of the effort becomes more complex. Careful manual systems and computer scheduling simulations can both be used effectively for this task. Many options are available at this stage.

All other matters stay constant at this size. The items that must be inspected remain the same, as do the mandates for thorough, systematic observation and for documentation.

SPECIAL CONSIDERATIONS FOR LARGE AUTHORITIES

IMPORTANT

Large LHAs should computerize their inspections.

LARGE HOUSING AUTHORITIES

Large LHAs are in a position to have either in-house or outside consultant trainers for their inspectors.

The scheduling of inspections for a large authority can become quite complex, as can the continual training of an adequate number of inspectors. While recommended decentralization helps with this issue at large LHAs it will not eliminate it. Inspections will generate a great deal of data which must be tabulated and provided to various people in the LHA. Computerization of the inspection system or some of its parts is very helpful for large agencies. Basic spreadsheet programs can be modified to provide just the data the LHA decides it wants (e.g. How long are our built-up roofs lasting before the inspection reports begin to show negative observations? How many carpenter hours do we need next year, based on a projection from the last six months worth of inspections.) We encourage LHAs to decide what questions they need to have answered from the results of the inspections, and to explore the possibility of having a custom program written that would provide this sort of data.

At large authorities, the development of a formal work plan makes good sense. There are always a large number of work orders generated in a large agency that can be efficiently grouped into categories of work. A work plan is generated by looking at three to six months of inspections or work orders and by tallying the staff hours needed and the materials used. In the best systems, these data are further categorized by type of work such as: vacancy refurbishment, plumbing call, or carpentry call. For example, if you look back over the past six months and find that one of your laborers regularly puts in 10 hours a week doing glazing, you might determine that it makes sense in the future to assign your best glazer one day a week to do glazing. This would be more efficient in terms of carrying tools to the site and the employee would probably get better and better at the task as he or she practiced more and more that day. The tallying would also allow the LHA to make certain that it always had enough material on hand to allow the laborer/glazer to complete their work in a timely fashion.

Some technological advancements in the final stages of development will soon be available to LHAs. Most intriguing of these is the hand-held computer programmed to lead you through an inspection. Once the data is punched in at the site, the computer can be brought back to headquarters and plugged into a parent computer that records all the data and prints inspection reports and work orders. This work is completed overnight so that these documents can be on the administrator's desk the following morning. The availability of these labor saving technological advances should be closely watched. It is likely that the larger agencies will have more resources in the initial periods to experiment with such tools. Because of the volume of inspections for a large LHA, such technical advances can be helpful in allowing analysis to occur quickly.

STAFFING AND PERSONNEL

TABLE OF CONTENTS

Chapter 4: Staffing and Personnel

STAFFING AND PERSONNEL

KEY CONCEPTS IN THIS CHAPTER:

- Maintenance operations can be organized using either a centralized or decentralized approach. (page 4-2)

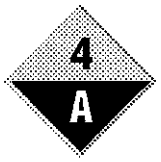
- There must be a clear, routine daily procedure for accumulating maintenance tasks and assigning them to workers. (page 4-14)

- Identify, develop, and reward good supervisory skills in your staff. (page 4-16)

- A strong personnel system should include at least the following components:
  - Complete, accurate, current job descriptions
  - Recruitment strategy
  - Instruction and training program
  - Consistent evaluation procedure

  (page 4-18)

- Outside contractors should be used when the task requires equipment or technical skills your staff does not have or when there is a short term need for an intensive work effort that is beyond your staff capacity. (page 4-27)



ORGANIZING YOUR MAINTENANCE STAFF

KEY

Maintenance operations can be organized using either a centralized or decentralized approach.

IMPORTANT

The structuring of your maintenance operation is not as important as a commitment to clear priorities, consistent supervision and thorough documentation.

ORGANIZING YOUR MAINTENANCE STAFF

On a day to day basis in any LHA, the Executive Director is ultimately responsible for the maintenance of the agency's housing stock. How the Director arranges the staff to carry out that responsibility is the subject of this chapter.

The overall maintenance operation can be organized using either a centralized or a decentralized approach. Although there is no single best strategy for all LHA's, EOCD generally believes, after many years of experience with over 250 housing authorities, that decentralization makes the most sense wherever possible. However, the structure of your maintenance operation is not as important as a firm commitment to clear priorities, consistent supervision and thorough documentation.

The two major options for consideration are discussed briefly below. They are probably not equivalent choices for each LHA. The factors that are likely to point you in one direction or the other are discussed later in this chapter. Combinations of the strategies are also possible. You should decide which approach or combination of approaches is the most appropriate for your housing stock, staff, senior administration and Board of Commissioners.

IMPORTANT

A centralized approach should be chosen by:

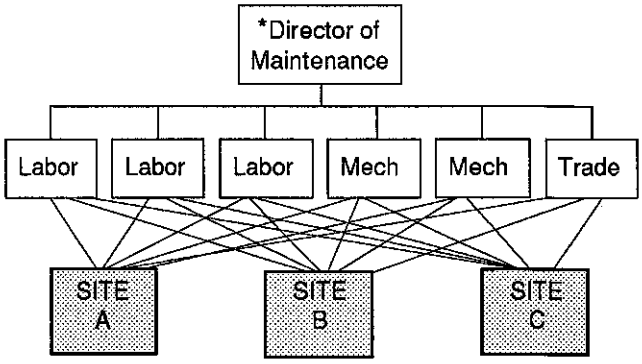
- Small authorities
- Authorities whose sites are close together
- Authorities where senior staff have strong administrative skills
- Authorities with narrow job descriptions

CENTRALIZED OPERATIONS

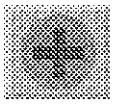
One option is to choose a single high-ranking administrator, such as your Executive Director or Director of Operations to manage all maintenance services. All laborers, mechanics, mechanic's aides or other general maintenance employees would report to this person daily for their assignments. Assignments would be made anywhere within the authority's stock based upon need. Generally, this person also directly supervises any skilled tradespeople who are on the LHA payroll, such as carpenters, plumbers, electricians, etc. Staff assigned permanently to one site, if any, are limited to one or two janitors per development. Technical work assignments are handled by staff sent from this central supervisor or, in some cases, by outside contractors.

Typical Organizational Chart

Centralized Operations



* This person's title may be Director of Maintenance, Director of Management, Director of Operations, Assistant Director of Management for Maintenance or even Executive Director, depending on the size of the authority and the skills of the staff.



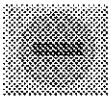
THE ADVANTAGES OF CENTRALIZED OPERATIONS

■ Efficient use of staff

This system allows for maximum efficiency of staff assignments for both maintenance staff and skilled tradespeople.

■ Consistent priorities & standards

The program and work priorities of your authority can be continually reinforced by the manner in which personnel and resources from the central supervisor are made available to individual sites and to programs. For example, if your LHA has determined that vacancies are the number one priority for maintenance work after emergencies, then the sites with the vacancies will get the workers under a centralized system. No site-based supervisor will be able to reallocate workers and thus redirect the agency's priorities.



THE DISADVANTAGES OF CENTRALIZED OPERATIONS

■ Requires strong organizational skills

A centralized maintenance system requires very strong organizational and supervisory skills in the central office, if the system is to realize its intended efficiencies. Staff accountability is difficult to manage because workers will often be assigned to tasks far from their immediate supervisor and will most likely be working at a site where other supervisory personnel (i.e. superintendents, managers) have no authority to monitor, direct or correct their actions.

■ Difficult to enforce consistent priorities at the site level

It is also difficult to coordinate priority work at each development, since the allocation of staff and other resources is being determined centrally rather than locally.

■ Knowledge of site sacrificed

Generally, site specific knowledge and expertise are sacrificed since your workers move constantly from site to site as need dictates.

IMPORTANT

A decentralized approach should be used by:

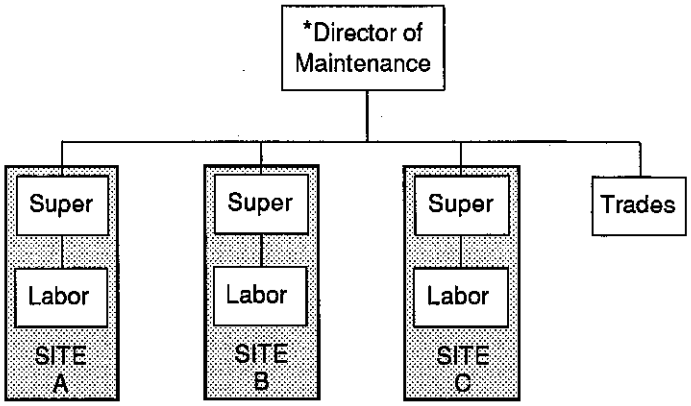
- Medium-sized and large authorities
- Authorities with scattered sites
- Authorities with good administrative skills in site level supervisors
- Authorities with broad job descriptions

DECENTRALIZED OPERATIONS

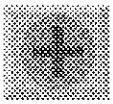
This model of staff organization has strong on-site property managers or maintenance superintendents who oversee all activities at their developments. Most of your maintenance crew is assigned to a particular location and works under the direction of the on-site supervisor to accomplish all routine maintenance tasks. Typically, even in the most decentralized authorities, there remains a central maintenance crew which includes all of the skilled trades personnel. Their services are requested from their supervisor in the central office or maintenance shop.

Typical Organizational Chart

Decentralized Operations



* This person may carry any of the titles referred to on page 4-3.



THE ADVANTAGES OF DECENTRALIZED OPERATIONS

■ Efficient management at site level

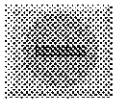
A decentralized system allows you to create the most efficient management of a comprehensive maintenance program at the site level. Staff accountability is clear. Because workers spend the vast majority of their time at one development, they become very familiar with its technical aspects. Everyone working at a site is under the direction and supervision of your site managers and/or their senior maintenance superintendents.

■ Fewer people supervised

Generally, your supervisors will oversee fewer people in a decentralized system. This means your managers or other site level administrators do not need advanced supervisory skills. There are also more opportunities for staff to gradually gain those skills with progressive promotions.

■ Greater accessibility for residents

Since decisions are made at the site level, residents can understand how communications work and to whom they need to speak when they have a problem.



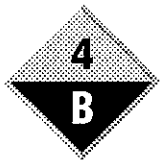
THE DISADVANTAGES OF DECENTRALIZED OPERATIONS

■ Less efficient for LHA in the short term

The negative side of a decentralized system is that it may be less efficient for your LHA as a whole over short time periods. For example, on a particular day, staff at one development may be working on low priority tasks, while at another site, the workers are having a difficult time completing a high priority job such as vacancy reoccupancy. However, this should balance out and not be a problem over a month or a year if the site staff teams are well constructed.

■ Familiarity can create apathy

Familiarity can create patterns of comfort or apathy and result in less efficient work when staff stay many years at a single site. This can be overcome by rotating staff every 2-3 years, though a preferable approach would be to address the issue in individual staff evaluations.



THE ROLE OF THE PROPERTY MANAGER IN MAINTENANCE

IMPORTANT

Property Managers in either system of administration should have:

- Site accountability
- Broad range of skills
- Ability to deal with a wide range of tenant issues
- Good supervisory skills

THE ROLE OF THE PROPERTY MANAGER IN MAINTENANCE

EOCD recommends that LHAs use Property Managers as a part of their administrative team, whenever possible. A Property Manager's job description typically includes a number of administrative tasks such as rent collection, budgeting, planning, showing apartments, enforcing the lease and resolving resident disputes. This is true regardless of how the maintenance operation is structured. However, there is wide disparity in the role of the property manager in relation to maintenance. There are two primary models from which you might choose: parallel or hierarchical administration.

NOTE

ADVANTAGES OF APPROACH:

- People do what they do best
- Less resources spent on training staff about work of personnel in other trade/skill areas

DISADVANTAGES OF APPROACH:

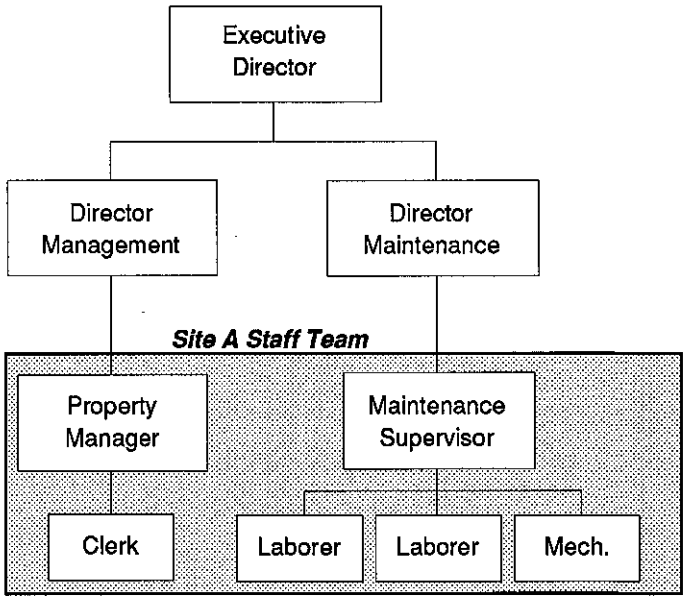
- Lack of clarity for residents
- Lack of coordination at the site level
- Conflicting priorities at the site level

PARALLEL ADMINISTRATION

In this model, the property manager and the maintenance staff carry out their respective duties and neither has any authority over the other. This model may have parallel chains of command all the way to the Executive Director (e.g. an Assistant Director for Management and an Assistant Director for Maintenance) or the two areas of responsibility may come together lower on the organizational chart (e.g. an Assistant Director for Operations to whom both types of employees report). The central element of this model is that at the site level, maintenance and management are two functions supervised separately. The advantage of this arrangement is that each part of your staff focuses on its own specialty. The disadvantage is a lack of central coordination regarding a commonly understood set of needs and priorities for the site. This system is also somewhat more confusing for residents who are not always sure who is in charge of what.

Typical Organizational Chart

Parallel Administration



NOTE

ADVANTAGES OF APPROACH:

- Clarity of priorities at site level
- Ease of coordination at site level
- Clear accountability
- Possibly fewer staff people
- Easier for residents to understand and communicate

DISADVANTAGES OF APPROACH:

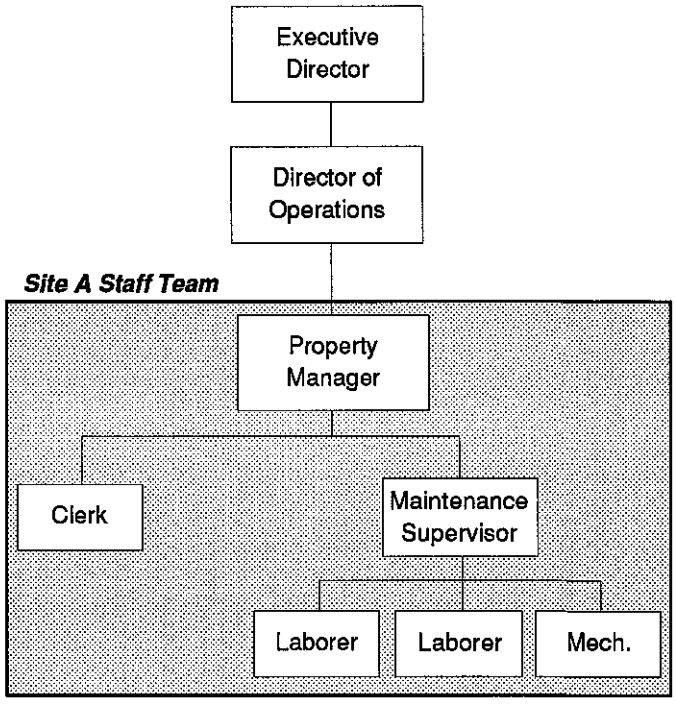
- Potentially, an unknowledgable person overseeing technical workers

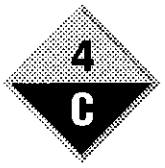
HIERARCHICAL ADMINISTRATION

In this system, your property manager directly supervises the maintenance staff at his or her site and assigns them their daily tasks. This provides good coordination and a well focussed set of priorities at each site. Residents' questions about maintenance issues are more easily answered by your site manager, since he or she is in charge of that function. The inherent difficulty in this model is the problem of having management personnel who are not technically knowledgeable overseeing the work of the maintenance staff. This problem can be reduced by training and experience.

Typical Organizational Chart

Hierarchical Administration





HOW TO DECIDE WHICH SYSTEM TO USE

IMPORTANT

Factors affecting selection of centralized or decentralized management:

- Size of your LHA
- Size and location of sites
- Management style of director
- Capacity of on-site staff
- Labor agreements
- Job descriptions

C HOW TO DECIDE WHICH SYSTEM TO USE

The factors that might effect your selection of a centralized or decentralized system and how to use your managers include the issues cited above as well as the following:

SIZE OF YOUR LHA

If you have a small staff (under 7), it is likely that you will want to choose a centralized model for maximum overall efficiency. This option may also be chosen simply because there are not enough employees to create layers of supervision. Studies have shown that the maximum number of staff that a person can effectively supervise is about 7-10. Therefore it makes sense for medium sized and larger agencies to create some form of decentralization.

SIZE AND LOCATION OF SITES

A centralized system may work well for LHAs with only a few sites or with sites close together, because supervision is easy to accomplish and your employees gain a familiarity with the sites very quickly. With a larger number of sites or widely scattered locations, you are probably best served by some form of decentralization to minimize travel during the work day and to make supervision easier.

MANAGEMENT STYLE OF DIRECTOR

Some senior administrators function best in a structure where virtually everything goes through their hands. This gives them maximum knowledge of what is going on within the maintenance operation and allows them to bring their own sense of quality control to bear. If you are one of these people, a centralized system is very likely to work best for you. To attempt to force this kind of administrator to run a decentralized operation will be frustrating and probably unsuccessful. Other administrators prefer to plan work operations, delegate authority and then monitor and evaluate the work during and after its performance. If this is your style, a decentralized system makes sense, even in smaller agencies.

Available for notes

CAPACITY OF ON-SITE STAFF

To run a centralized system you will need a very high level of organizing and supervisory skill in one or more staff in the central office. On the other hand, a decentralized system can work well if only a moderate level of this skill exists in a number of your people who will be in charge at each of the decentralized locations. If these abilities do not exist, but other conditions point toward a decentralized style of operations, you can take advantage of the numerous training programs that increase supervisory skills.

LABOR AGREEMENTS

In some cases, labor agreements will dictate or influence the decision about organizational style. Job descriptions may have been negotiated to include specific locations, thus making it hard to move staff among sites as needs dictate. You may face prohibitions or waiting periods when you want to change job assignments. If these problems exist, then they should be addressed during contract bargaining sessions. Most labor agreements contain a Management Rights clause which gives you the right to organize and administer the work of the organization. It is this clause which provides the grounds for your right to determine organizational arrangements and job descriptions terms.

JOB DESCRIPTIONS

Narrow, specific job descriptions tend to push you toward a centralized maintenance organization. Only by having the ability to send such specialists anywhere within the LHA's stock can you use them most efficiently. Broad, generalist job descriptions can work well in either system, because they provide you and your supervisors, whether centrally located or site-based, with maximum flexibility.

Finally, it is important to note that you may want to choose a combination of these systems. One frequently used arrangement is to have all staff, including tradespeople, assigned to and supervised by, site-based personnel. There is no core team of tradespeople in a central maintenance shop. If you were to choose this hybrid arrangement you would probably need at least one centrally based person with authority to pull people from one location and send them to another after consulting with the site supervisors. Alternatively, you might elect to have workers assigned by a central supervisor for longer periods of time (i.e. two weeks to a month) and to have them supervised by on-site staff during that time period.

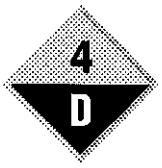
As with many areas of maintenance, the right choice of an overall maintenance organizational model requires a thoughtful analysis of conditions and needs at your LHA. You should consider all reasonable alternatives and make a clear decision that is communicated to all parties and carried out conscientiously.

NOTE

Decide where your LHA fits on each scale. This may help you determine which form of organization makes the most sense for you.

GUIDE FOR SETTING ADMINISTRATIVE STYLE						
Few Units	0-100	101-200	201-350	350-500	500 +	**Many Units**
Few Sites	1-2	3-4	5-6	7-8	9 +	**Many Sites**
Clustered Sites	0-1mi	1-2mi	2-3mi	3-4mi	4mi +	**Scattered Sites**
Hands-On Director	VERY	FAIRLY	MIXED	FAIRLY	VERY	**Delegating Director**
Inexperienced Site Staff	0-1yr	1-2yr	2-4yr	4-6yr	6yr +	**Experienced Site Staff**
Closed Contract	TIGHT	FAIRLY	AVG.	FAIRLY	NONE	**Open Contract**
Narrow Job Description	NARROW	FAIRLY	AVG.	FAIRLY	BROAD	**General Job Description**
CENTRALIZE	←	●	→			**DECENTRALIZE**

EXAMPLE: If your LHA has 400 units on 6 sites spread over a 3.5 mile area, and you have a fairly delegating Director as well as site staff with an average of 5 years experience, you should probably be moving toward a decentralized operation.



EFFICIENT SCHEDULING OF STAFF

D EFFICIENT SCHEDULING OF STAFF

Efficient scheduling of your staff can be achieved and sustained by sticking to a few basic principles. The first step is to recognize and confirm with staff that the definition of *what* work needs to be done at your LHA will come only from work orders which, in turn, come from certain sources.

STEP ONE: WORK IDENTIFICATION

■ Emergencies

Emergencies may be called to your attention by residents, staff, or other citizens. Emergencies cannot be scheduled, but based upon previous experience an appropriate estimate of time that may be required for emergencies can be made.

■ Inspections

Inspections (See Chapter 3) identify work that needs to be done based on observation — repair, replacement, cleaning, etc. You should have an inspection program for Dwelling Units, Buildings and Grounds, and Mechanical and Electrical Systems. Inspections may reveal work that falls under the Emergency or Vacancy priority. But most work orders generated from inspections will be Programmed Maintenance.

■ Routine Maintenance Activities

Regular janitorial and grounds work in common or public areas of your LHA's properties, such as mowing lawns and cleaning windows is defined as part of the Programmed Maintenance workload.

■ Preventive Maintenance Program

The Preventive Maintenance Program (See Chapter 1) should include tasks that can be pre-scheduled as much as a year in advance — filter changes, lubrication, prunings, etc. You need to accomplish these tasks routinely in order to assure and extend the maximum economic life of all the elements of your stock.

IMPORTANT

Steps to maximum efficiency in staff scheduling:

1. Recognize that *what* work is needed comes from:
   - Emergencies
   - Inspections
   - Routine maintenance activities
   - Preventive maintenance program
   - Resident calls
2. Recognize that the *cost* of all work needed is defined on work orders
3. Recognize that the *order* in which all work is performed is determined by the priority system which you have adopted
4. Formalize the job assignment and staff supervision process.

KEY

There must be a clear, routine daily procedure for accumulating maintenance tasks and assigning them to workers.

■ Resident Calls

Telephone calls add work tasks that are less predictable and occur between inspections. Some resident calls will be Emergencies but most will fall into the Requested Maintenance category.

Using this information a good scheduler can group work assignments efficiently. For example, a worker might be able to spend two full days at one development and take care of a number of tasks (some preventive, some programmed, some requested) rather than travel between developments and lose work time. Another might be assigned eight glazing jobs in a row, thereby improving his or her performance level and efficiency through repetition.

STEP TWO: COST ESTIMATING

The second step in good scheduling is to recognize and confirm with staff that the definition of *cost* to complete a work task, in terms of time, materials and labor, will come from work orders. All information about maintenance deficiencies or problems should be recorded on work orders. Estimates should be included of *how long* it will take to accomplish the task, *what materials* are needed and *how many people* it will take. By reviewing previously completed work orders, your scheduler can be confident of assigning enough work to fill the time period involved, without hopelessly overloading the worker. Your maintenance worker and your scheduler should also be able to ensure that adequate materials and equipment are taken to the job site.

STEP THREE: PRIORITIZATION

The third step toward efficient scheduling is mastering a system to *order* work assignments. Once the tasks to be done are placed on work orders they should be prioritized according to LHA policy. EOCD recommends the priority system described in Chapter 1 of this Guide. Holding to the priorities will be difficult because vacancy work and preventive maintenance tasks do not have vocal

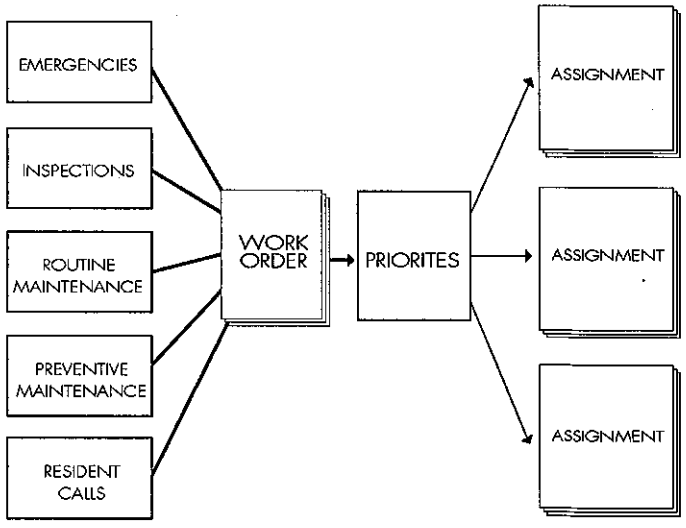
Available for notes

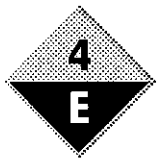
advocates as some other tasks do. If you are consistent in following the priorities, however, your maintenance operation will be efficient and your property will be in excellent condition. You will also avoid most crises.

STEP FOUR: STAFF ASSIGNMENTS

The final step in this effort is to formalize the job assignment and staff supervision process. You should require your maintenance workers to report to a particular place at the beginning of each work day to receive assignments for that day. This allows your scheduler or supervisor to be certain the worker understands the assignment. You may then ask your workers to check back in at the beginning of the afternoon for changes in assignment and/or at the end of the day to turn in completed work orders. Decisions about this procedure should be made on the basis of the most convenient way to ensure that your staff always has enough work to fill their time, receives clear instructions and travels as little as possible.

Work Order Assignment Procedure





STAFF SUPERVISION

KEY

Identify, develop, and reward good supervisory skills in your staff.

E STAFF SUPERVISION

Your maintenance employees should be directed by a supervisor who assigns and evaluates their work. That supervisor, depending on the scope of his or her responsibility, may be a Crew Chief, Working Foreman, Superintendent, Supervisor or even the Executive Director.

GOOD SUPERVISION

Good supervision uses leadership to accomplish common goals through the delegation of work. It requires delegation, direction, monitoring and critical evaluation. It also involves a strong component of teaching. The best language for describing good supervision is to think of it as good coaching. Supervisory skills can be acquired through experience and can also be improved and refined by programs of instruction and performance evaluation.

Good supervisors are people who have:

1. Communication skills

The willingness and verbal communication skills to explain and teach

2. Ability to delegate responsibilities

The discipline to delegate responsibilities and define specific task assignments

3. Confidence to let others do a task

The confidence to let others do a task for which the supervisor may be praised or blamed

4. Patience to coach others

The patience to encourage and tutor others even when their style is different from that of the supervisor

5. Time to give feedback & evaluate performance

The commitment to make time to give feedback and evaluate staff performance

IMPORTANT

Coaching rules:

- Feedback should come as close as possible to the action you want to reinforce or discourage.
- If possible, praise first, then correct.
- Speak about specific behavior and avoid general labels.
- Be specific about the behavior you want to see.
- Frequent, small scale comments are preferable to large annual reviews.

It is important to recognize that being a supervisor does not mean simply receiving a larger paycheck. It is an important task in itself. The main responsibilities of a supervisor are teaching, scheduling, coordinating and evaluating.

PERSONNEL ADMINISTRATION BASICS

KEY

A strong personnel system should include at least the following components:

- *Complete, accurate, current job descriptions*
- *Recruitment strategy*
- *Instruction and training program*
- *Consistent evaluation procedure*

DEFINITION

A job description is the written standard for each staff position at the LHA.

F PERSONNEL ADMINISTRATION BASICS

Your efforts to control the quality of both the management and the maintenance of your physical facilities should begin with recruiting, selecting, training and managing an excellent staff.

POSITION CLASSIFICATION

The job description is the basic product of a system of position classification. Every job at your LHA must have an up-to-date job description, including part time and special purpose positions. The job description is the written standard or specification for each group of positions. Accordingly, it serves to clearly provide information in three critically important areas:

- Responsibilities and duties of the position and tasks ordinarily assigned to the incumbent.
- Degrees of supervision under which the work is to be performed.
- Knowledge and skills necessary for adequate performance of the responsibilities and duties of the position.

The best way to develop job descriptions is to write down, as straightforwardly as possible, the tasks, supervisory relationships and qualifications involved in the job as now being performed or as envisioned. Interviews with persons now performing the job can help. It is also useful to review job descriptions from other LHAs for content and format. EOCD and the Department of Labor and Industries (DLI) have approved job descriptions which you can also use as models. In general, the responsibilities section of the job description should be as broad as possible, providing you with the maximum flexibility in daily assignments. The qualifications section should set the highest reasonable standards.

NOTE

A good job description includes:

- Responsibilities
- Degrees of supervision
- Knowledge & skills required

IMPORTANT

To develop a good job description, you should:

- Write the broadest list of responsibilities possible
- Talk to those who do the job now
- Request the appropriate standard job description from EOCD or DLI as a model
- Ask other LHA's for models
- Set high standards for qualifications

Often overlooked are several job requirements that can directly impact staff effectiveness in a position. The first is the possession of a valid local driver's license if the employee is expected to travel between sites or operate LHA vehicles as part of his or her job duties.

Another common omission concerns covering for another employee's leave time. Physical facility needs and service requirements do not cease for vacations, illness, holidays or any other absences of staff. Typically, when all absences are considered, you have only 75% of the actual on-the-job staff hours that you appear to have when counting employees. Therefore, a clause in your job description defining mandated personnel substitutions should be included as part of the Responsibilities and Duties of every job. This specification should require that the individual in the position being described also be informed about the duties of another specific position so that substitution can occur whenever required without diminishing the quality and quantity of services.

Finally, the ability to read and write basic English should be added to job descriptions where it is important. Even when LHAs can arrange to make certain agency documents easy to use and understand for staff members who do not read or write in English, the necessity to read manufacturer instructions, resident notes, information from supervisors, etc. makes it impractical to have employees who cannot communicate in English.

RECRUITMENT

The importance of an aggressive recruitment policy cannot be overstated. Timely, careful searching for required personnel (both new and promotional) is a very significant step toward maintaining your housing stock in a cost effective and efficient manner. Additional time and expense in the outreach phase can be more than made up for in reduced expenditures for training, supervision, inefficient work pace, or disciplinary actions.

Available for notes

In order to avoid delays or disruptions in the on-going delivery of maintenance services, your recruitment program should include established and implemented policies in the following areas:

- Provisions ensuring timeliness of notice of resignation or creation of new position, advertisement, interviewing, reference checking and selection
- Clearly understood job descriptions and qualifications
- Equal employment opportunity procedures
- Affirmative action outreach strategies to seek candidates from among groups not well represented in the LHA's staff including minorities, women, physically handicapped persons and residents of public housing
- Specified interviewing procedures as well as fair methods for demonstrating required skills when they are a part of the described qualifications. It may be reasonable to involve residents in some part of the interview process
- Special outreach strategies to public housing residents in order to comply with regulation 760 CMR 6.00 requiring preference to be given to *qualified* tenants for any LHA maintenance position
- A system for conducting rapid, thorough and reliable reference checks of past performance
- Where applicable, procedures for ensuring compliance with collective bargaining agreement stipulations, such as seniority rules, posting dates and career ladders

In addition to the important timeliness factor in an efficient recruitment policy, you may wish to require an acceptable demonstration of specified skills prior to employment or to advancement. As part of such a test, the candidates should demonstrate their skills by explaining, and then executing any randomly chosen routine assignment from the relevant job description under the direction of the employing supervisor. Where applicable, a union representative should be invited to observe the test.

NOTE

A good recruitment system includes:

- Rules for notice of departure
- Good job descriptions
- Equal employment opportunity procedures
- Affirmative action strategies
- Interviewing procedures
- Reference check procedures
- Labor agreement compliance procedures

Your system of recruitment should also have provisions for targeted outreach efforts. Your desire to have a diverse and balanced work force or to identify individuals with a special, needed skill will require a planned affirmative marketing effort to get an adequate pool of such applicants from which to finally select the new worker(s). In order to facilitate such an effort, develop a list of outreach contacts to be used for each kind of job you need to fill. Your list might include large employers in the area, schools and colleges that train such people, groups that represent particular types of potential employees, job placement services and any other contacts that might prove fruitful. Frequently, the best potential candidate for a particular job is not scanning want ads but is working productively at your agency or elsewhere. This list of contacts should make it easier to reach such people than by simply advertising in the paper.

INSTRUCTION AND TRAINING

In order to continuously improve the overall performance of the LHA, it is very important to provide your staff with training opportunities. These sessions help employees learn new policies and procedures, refine or develop technical skills and learn about performance standards for the LHA. This should not be a one-time program, but rather an on-going effort. The most efficient and cost effective way to achieve uniformity in staff performance and a constantly increasing skill level is to have a continuous program of instruction for all employees. Every individual should receive, at a minimum, instruction in the following topics:

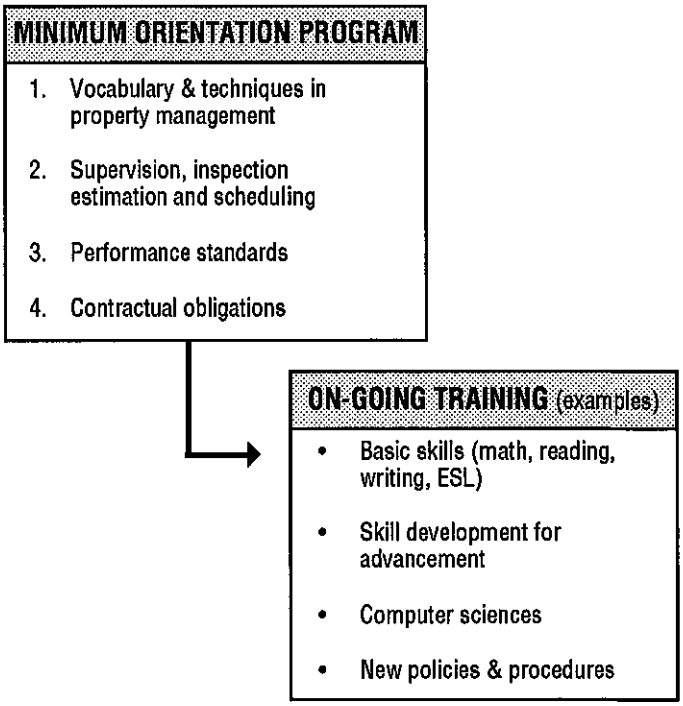
- Basic vocabulary and techniques in understanding housing's physical facilities.
- Techniques for supervising, inspecting, estimating and scheduling.
- Performance standards.
- Contractual obligations.

Available for notes

In addition, your technical employees (e.g. mechanics, computer operators) may require specific skill training oriented to their present jobs or to positions they may be seeking in the future. In this age of rapid technological change, it is particularly important to provide training opportunities so that your employees stay abreast of the latest developments in their fields.

Scheduled sessions of instruction for your staff will increase clear understanding and reliable implementation of all maintenance activities. Such sessions of instruction work best when guided by a written agenda, mandatory uninterrupted attendance, and active attendee participation through discussion, written exercises and, wherever appropriate, field work that can reinforce the classroom presentations.

Decide carefully who can best undertake this effort, since training is a skill in its own right. Sometimes in-house staff will be the best solution. They are usually the least



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expensive. However, if they are not good trainers, this may be a false economy. Other resources are good trainers from other LHAs, faculty from local educational institutions, and manufacturer representatives or union officials. In some cases, you may find that it is better to send employees to training programs being offered by other institutions. An arrangement that many authorities use is to share the cost of this training with the staff person. You might give the employee time off with pay to participate but ask him or her to pay the tuition. Alternatively, you might pay for the course and ask the employee to attend sessions on his or her own time.

The training effort in your authority should be a high profile program. Completion of courses should be formally recognized with modest ceremonies and certificates. When a course of instruction is the primary method used to establish and/or reinforce a uniform standard within maintenance operations, then successful completion of the course should be a prerequisite to performing a job. An example of this is the annual living unit inspection. Regardless of previous training or experience, only authority-trained inspectors should be permitted to perform this work. Previous experience may enhance inspector's technical skills, but they can only learn your standards through the specific training provided by you.

EVALUATION

An effective program of staff evaluation completes your personnel system. Every employee is entitled to a performance evaluation at least once a year. The best systems provide for much more constant feedback to the worker and a style of supervision and evaluation viewed as coaching. There are several purposes for a staff evaluation program. They include the following:

- To improve the employee's performance (and, as a result, the LHA's performance)
- To assess the employee's potential for promotion

IMPORTANT

Reasons for a good staff evaluation program:

- Improve employee's performance
- Assess promotion possibilities
- Set salaries
- Document performance

- To determine salaries
- To build a documented record of performance for reference-giving purposes and to support personnel actions of any kind

Several principles are important in designing a good evaluation system.

1. Make the standards clear

The standards against which the employee will be measured should be clearly understood at the beginning of the assessment period by both the employee and the supervisor. These standards may be found in the job description or in some other document used specifically for evaluation purposes.

2. Evaluate frequently

The more regular the feedback can be, the better for the employee and for the LHA. In this fashion, your employees are kept constantly informed of how they are doing in relation to the established standards. Such a program is oriented toward helping the worker *reach* the agreed upon goals, rather than simply taking stock at the end of the evaluation period.

3. Include objective measures of performance

It is imperative that the system includes some objective measures of performance as well as the traditional subjective judgements. For example, information on the percentage of call-backs on work orders performed by a particular employee would be a good measure of quality of work when combined with random spot checks and a subjective assessment by the supervisor. This objectivity is easier for some categories of jobs than for others.

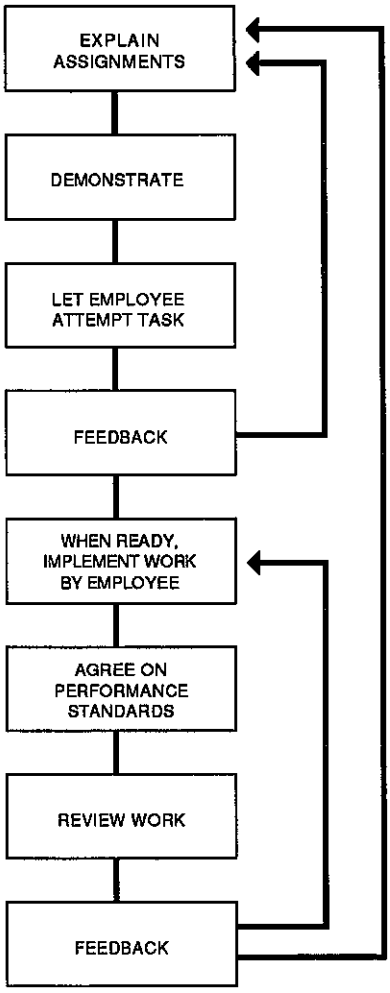
Available for notes

4. Make a written record

Evaluation systems work best when they include a written record of the evaluation. Many standard forms exist for this purpose (see Chapter 8 for one example). The best forms have boxes to check, room for narrative comments by evaluators, places for the worker, the evaluator and evaluator's supervisor to sign and a place for the employee to note comments. When a good evaluation program is integrated with good recruitment, training and supervision, the result is an efficient, well-functioning work force.

Available for notes

The Coaching Process: Training, Supervising and Evaluating



This flow chart shows how a good staff evaluation might work. When a new task is to be taken on by an employee, training always comes first. Then the task is demonstrated, after which the employee is asked to perform the assignment. If clear weaknesses exist, additional training may be necessary. When the employee is ready, he or she is given the work to do independently. Performance is reviewed regularly and constant feedback helps the employee to continue to improve. Additional refresher training may be needed occasionally.

CONTRACT SERVICES

KEY

Outside contractors should be used when the task requires equipment or technical skills your staff does not have, or when there is a short term need for an intensive work effort that is beyond your staff capacity.

G CONTRACT SERVICES

Hiring an outside contractor is an additional resource which you may use to complement whatever staffing pattern you adopt. The main reason for using a contractor is a lack of needed equipment, skills or licenses to complete a task. You may make the decision that a particular skill or piece of equipment is needed so rarely that it does not make sense to add that ability to the LHA. Examples of this include bucket trucks, elevator maintenance, design of computer hardware systems or legal services to settle a labor dispute. Another reason for outside contractors is a lack of adequate time to carry out certain tasks during a period of high need, even though these assignments could be done by your staff. Examples include vacancy repairs or painting during particularly intense periods of need.

Examples: Two Types of Contracts

SERVICE	MAJOR REPAIR
• Solid Waste Disposal • Fuel Oil Delivery • Pest Control • Roof Repair • Fire Alarm Testing & Service • Elevator Service & Repair • Vehicle Maintenance	• Electric Transformer and Switchgear Repair or Replacement • Boiler Reconstruction & Repair • Sewer Line Reconstruction

NOTE

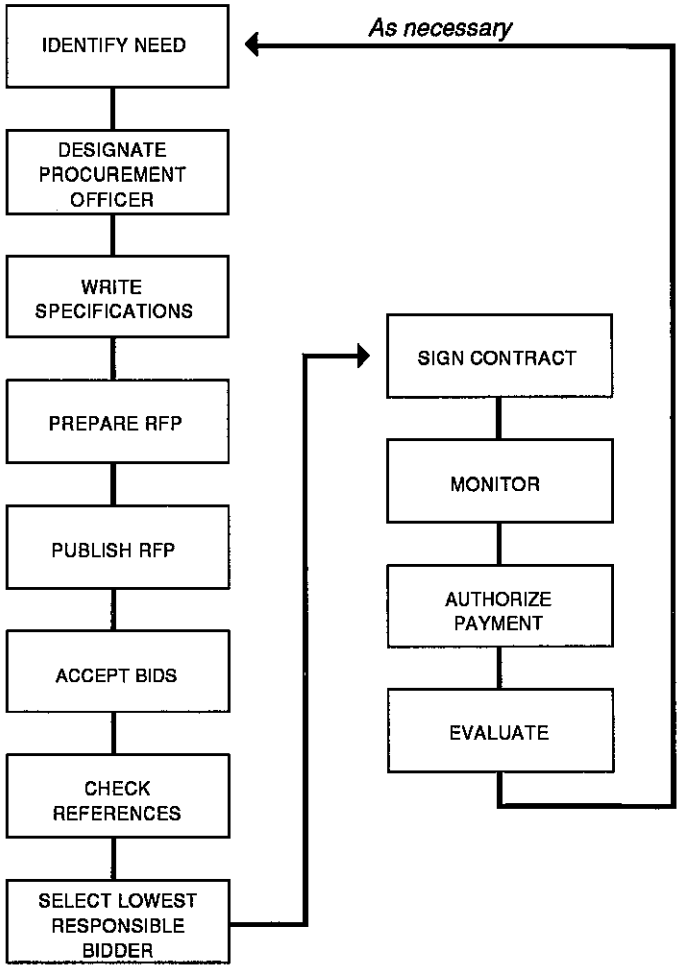
To contract effectively, you should:

- Define the nature of services precisely
- Select contractors carefully
- Check references in detail
- Monitor thoroughly

THE CONTRACTING PROCESS

The contracting process can be a complex one, requiring preparation of specifications, public bidding and contract management. For more information on these technical aspects of contracting for services and major repair work, see Chapter 6 and also Chapter 2, *Contract Administration and Fiscal Operations* in the *Modernization Manual.* From an organizational point of view, however, the most important issues are defining carefully the nature of the services for which you are contracting, carrying out a thoughtful selection process for the contractor and monitoring the performance thoroughly.

LHA Contracting Process



SPECIAL CONSIDERATIONS FOR LHA SIZES

NOTE

Small LHA's have 200 units or fewer

H SPECIAL CONSIDERATIONS FOR LHA SIZES

The appropriate and useful application of the staffing initiatives described in this chapter are influenced by the size of your LHA.

SMALL HOUSING AUTHORITIES

Informality is the primary special consideration for small authorities in the personnel area. This Guide recommends that, to the maximum extent practical, all of your policies, procedures and systems be documented. There should be a written record both of how things are supposed to be done and about what actually happened. However, there is much to be gained in the smaller authorities by creating an informal system of communication, checks and balances, and review where employees must work together as a small, close-knit team. To over-formalize matters may cause suspicion and waste time. Therefore, judgement is required in designing the system that works best for you.

Small LHAs typically choose a centralized system of maintenance organization. In a small organization, the Director is expected to know everything that is going on, and a centralized system makes it easier to achieve good information flow.

Contracting for services is more common in some small LHAs than others. When there is an excellent generalist maintenance employee on staff, many preventive and general repair services can be performed in-house. In other cases, you must rely on the network of local contractors to take care of a considerable amount of maintenance activity. When contracting does occur, the same principles of defining the nature of the work, selecting carefully and monitoring thoroughly, apply. State procurement laws must be followed as at any authority (see Chapter 6). You should keep good records of all service contracts on file.

IMPORTANT

Small authorities should:

- Establish clear priorities
- Supervise carefully
- Document thoroughly
- Probably use centralized administration
- Use contractors for services too complex or time consuming for your staff
- Have general job descriptions
- Use employees with beepers for after hour service if you insert this requirement in their job description

Personnel systems should have the same basic elements, but in simple format. Job descriptions should be developed and regularly updated for every job at your agency. Recruitment procedures should be written down and followed in order to assure the best possible staff is hired especially when you will be working closely with them. Each must be a contributor to your maintenance team. Training should be a part of your activities. Evaluations should probably be very informal, though some documentation should go into the employee's folder. This can be simple notes of regular conversations about how the employee is progressing, or formal semi-annual evaluation forms.

Emergency response systems can often be handled by having one maintenance employee carry a beeper or in other ways be reachable on a 24 hour basis. This employee may receive a small extra amount of compensation for undertaking this responsibility.

In short, smaller LHAs need to write down policies and procedures and document performance, but this task can be accomplished in a professional manner without using high technology.

MEDIUM HOUSING AUTHORITIES

Medium-sized LHAs have maximum flexibility in the personnel area. They are small enough to choose either a more informal organizational approach, relying on verbal communication and good team-work, or more formal administrative tools, based on forms and written instructions.

Choices between centralized and decentralized systems of maintenance organization often have to do with the configuration of the LHA's stock. In a few cases, a centralized system may still make sense for its advantages of clear communications and standards, and focused control of the maintenance effort. If your developments, are far apart, a decentralized operation will save extensive travel time and allow staff to develop real specialities at particular developments.

NOTE

Medium sized LHA's have between 200 and 499 Units

IMPORTANT

Medium-sized authorities should:

- Establish clear priorities
- Supervise carefully
- Document thoroughly
- Probably use a decentralized administrative system
- Use fewer contractors
- Have broad job descriptions where possible
- Use an answering service for after hours work
- Computerize where possible

Contracting for services may be more involved at medium sized LHAs, particularly where there is some level of decentralization. If a contracted service is to be used at several sites, each site manager should be involved in monitoring the product or service delivered.

All parts of a good personnel system should be well documented. Generalist job descriptions are preferred over specific and narrow ones. Avoid job descriptions that specify a location. This can result in difficulty in moving your staff from one site to another. Recruitment and training can be extensive and formalized in a medium sized agency. There are often enough staff to justify the time of a manufacturer's representative to come and deliver a training session. Since evaluations will be conducted by several people at a medium sized LHA, you should develop a formal evaluation system with training for supervisors in the process and forms to be used for evaluation.

Scheduling and emergency response systems can also vary widely. After hours response may rely on individuals who are regularly available by telephone or beeper, and perform emergency repairs themselves. EOCD recommends computerized systems which allow for easy tracking of emergency and other work order activities.

Available for notes

LARGE HOUSING AUTHORITIES

Large LHAs must introduce considerably more formality to their operations to insure consistency of standards across the operation, and to allow for much greater amounts of information to be collected and monitored by senior officials. A common and increasing theme of recommendations for efficient maintenance operations at larger authorities is, therefore, the use of the computer. While large LHAs are not required to computerize this or other parts of their operations, EOCD recommends large LHAs adopt computerized work order, scheduling, and tracking systems.

Large LHAs are strongly encouraged to decentralize their maintenance operation. Maintaining good written policies and procedures, documenting activities, using standardized forms, are very important to insure consistent standards and to enable reasonable assembly of data for monitoring purposes. Most authorities have found that the creation of organization hierarchy makes sense, with specific delegation of responsibilities to each level. For instance, delegating direct personnel supervisory responsibilities to regional or area maintenance superintendents will reduce the top maintenance director's workload. Therefore he or she will have more time for overall planning activities, coordination with other departments, and the development of training and evaluation programs.

In the case where all maintenance staff are assigned to specific sites and tradespeople are directed and assigned from a central maintenance shop, experience seems to indicate that once assigned to a particular site for the day, or for a particular task, tradespeople should be supervised and monitored by your local site personnel. Once again this ensures local priority setting and coordination are maintained at a high level.

NOTE

Large LHA's have more than 500 Units

Large authorities tend to do a significant amount of contracting, in part because they have complex housing stock (e.g. elevators, large boilers, complicated alarm systems, etc.) and because they often face heavy cyclical demands for certain tasks (e.g. vacancies, landscaping, painting). Many larger authorities find it appropriate to create a Contract Monitoring position on staff to administer contracts, monitor warranty deadlines and conduct the public bidding process. This person must have skills in bidding, reference checking, site monitoring, and evaluation. In some situations he or she may become a specification writer. This official develops an orderly set of files that allow for good planning and record keeping in the contract administration area. The use of a computer may help with the complex monitoring of these various contracts.

Personnel systems are critical in a large LHA. Job descriptions should be regularly updated to keep pace with employee growth and assumption of new responsibilities. Recruiting procedures need to be pursued aggressively because of what is typically a constant turnover of staff. Regular mailings to key personnel contacts are a good practice, even when a particular job opening is not currently available. Training programs should be scheduled regularly, with a curriculum that each employee is expected to complete over a given period of time. Offer Staff Orientation programs in order to bring new employees on board smoothly. The creation of explicit career ladders within the organization will allow employees to see themselves as having a career at your agency with advancement made possible through good evaluations and completion of training programs. Formalize this evaluation program with standard forms, well documented files, and appropriate training for all managers. In many larger LHAs, the position of Personnel Officer is created to deal with the creation and implementation of good personnel procedures.

IMPORTANT

Large authorities should:

- Establish clear priorities
- Supervise carefully
- Document thoroughly
- Use a decentralized administrative system
- Develop a contract monitoring position
- Have broad job descriptions where possible
- Use an answering service and offset shifts for after hours work
- Computerize fully

A substantial resident population at large LHAs make it likely that a high number of service calls will occur nearly every day. Many of these will occur after regular working hours. LHAs typically use an answering service with a list of people to contact upon receipt of such calls. It is possible to teach good answering services to make a number of decisions about emergency vs. non-emergency status for various calls. With training, they will know whether to tell the resident that someone will call on the next work day or to call a supervisor, worker or contractor. In other situations, the answering service will be instructed to call a supervisor who is responsible for making this decision. As noted earlier, larger LHAs may find it economically advantageous to use non-regular shifts to cover evening and weekend hours, rather than pay time and a half rates to employees to make repairs after hours. Maintaining good record keeping for several months can help you analyze this question and develop the policy that makes the most sense for you.

BUDGETING

TABLE OF CONTENTS

Chapter 5: Budgeting

BUDGETING

KEY CONCEPTS IN THIS CHAPTER:

- Budgets for maintenance are important policy documents and should be developed after careful research into LHA experience, needs, and plans. (page 5-2)

- EOCD recommends that all LHA's move toward a development-based system of budgeting for maintenance as well as other activities. (page 5-16)

- Spending authority for LHA maintenance dollars should be distributed in the same way as the responsibility for developing budgets for that spending. (page 5-18)

- EOCD encourages LHAs to involve the broadest possible range of people in the process of budget preparation. (page 5-20)

THE REASONS FOR PREPARING BUDGETS

KEY

Budgets for maintenance are important policy documents and should be developed after careful research into LHA experience, needs, and plans.

A THE REASONS FOR PREPARING BUDGETS

LHA administrators and supervisors correctly understand that the income they are going to receive from tenants, EOCD and, where applicable, HUD, is a relatively fixed sum, and there is little the LHA staff can do to increase it. In reality, the dollars available to carry out the maintenance initiatives described in earlier chapters are limited, and are not likely to be substantially more than are available in the current year's budget. Some conclude from this reasoning that budgeting is a waste of time. Quite to the contrary, the careful planning that is necessary to prepare good budgets can help you increase the efficiency of the dollars you do have, thus providing "new" funds for your own initiatives.

Creating realistic budgets is the first step you can take toward gaining the maximum benefit from new efficiencies in your maintenance operations. Following the recommendations on prioritizing work, using work orders to track all tasks, operating preventive and programmed maintenance programs, and doing careful record keeping will provide you with the means to monitor the cost effectiveness of your maintenance operation. Following these initiatives you will have the data necessary to measure your true costs *and* your demand for service and materials. You will also be able to identify what your savings have been and to where these dollars have been reallocated. This process will also allow you to quantify the unmet needs (i.e. capital improvements or uncompleted work orders) of the LHA.

Budgeting is the term used to describe the process which you, other staff, and the Commissioners go through to set the performance targets, expressed in dollars, for LHA staff for each year. The preparation of a realistic budget is dependent upon accurate information on staff and material needs of your maintenance operation. This chapter will provide some guidance on how to effectively integrate the maintenance data into your budgeting process.

IMPORTANT

Why make budgets?

1. It is a way to study your operation.
2. It assists you in setting priorities.
3. It helps you control spending.
4. It helps people understand how your LHA works.
5. EOCD requires it as a way of evaluating your agency's operations.

BUDGETING IS A WAY TO STUDY YOUR OPERATION

In order to prepare a meaningful budget, you must have information about previous spending patterns, current needs, future concerns and long range goals. If a budget is completed without this data, the document will not serve as an effective management tool. On the other hand, you can understand your agency operations better if you use the budget preparation schedule as a set of deadlines for data collection or analysis.

BUDGETING ASSISTS YOU IN SETTING PRIORITIES

There is never enough money to do everything you would like to do (or your residents, or your board, or your mayor would like you to do). To create a balanced budget, you must choose the goals that are most important for your LHA to accomplish in that fiscal year. In the maintenance area, this might mean concentrating on landscaping this year, and postponing cycle painting until next year. It might mean replacing only half the carpet this year so that you can afford to buy a carpet cleaning machine to reduce future contract costs and extend the life of the carpeting you will buy in the future. These trade-offs are often difficult to make but the value of the budget process is that it forces you to choose priorities and move ahead. It is vital that this priority setting be carried out by you and your staff, residents and Board of Commissioners. The task of prioritizing spending options belongs to the LHA even if you use a fee accountant to prepare the actual budget document.

BUDGETING HELPS YOU CONTROL SPENDING

The existence of a budget figure for spending in a particular category has the effect of capping costs somewhere in the vicinity of that number. A budget provides a tool which all parties can use to monitor spending so the intentions of the people who developed and approved the document will be carried out through the fiscal year. By closely monitoring the spending, the cost of work will also be maintained in a reasonable range.

Available for notes

BUDGETING HELPS PEOPLE UNDERSTAND HOW YOUR LHA WORKS

Good decision making requires that those involved share considerable amounts of information. The more residents, staff, local public officials and others understand the limitations on LHA financing and the nature of the budgeting process, the more efficient budget preparation and actual operations will be.

BUDGETING HELPS TO SATISFY EOCD'S REVIEW AND EVALUATION REQUIREMENTS

EOCD provides the money to build and operate your developments. To be responsible to the taxpayers and to the legislative mandates for public housing, EOCD needs to review your spending priorities to ensure that they are consistent with program guidelines. EOCD uses your annual budget forms to assist them with this task. In this way, the preparation of your budget is an activity that helps to shape your relationship with EOCD and to determine the capacity of your agency.

Developing a budget is more than simply putting down a series of numbers and adding them up at the bottom of the page. With good information, thoughtful planning and vigorous discussion, the preparation of a budget can be a very valuable policy setting activity for your LHA.

TYPES OF BUDGETS

NOTE

Most LHAs have four types of budgets:

- Development
- Annual Operating
- Modernization (or Capital Improvement)
- Leased Housing

TYPES OF BUDGETS

To operate effectively LHAs will utilize the following four types of budgets: development, annual operating, capital improvement, and leased housing. Three of these have maintenance implications. Please see the *Accounting Manual for State-Aided Housing Programs* for further information about each of these budgets. The *Modernization Manual* will also be a helpful reference.

DEVELOPMENT BUDGETS

These are the budgets that cover the costs of building, acquiring and/or renovating new housing units that will be owned by your LHA. These are one time budgets that typically cover a period of one to three years involving planning, construction and occupation. The quality of your new developments will have a major impact on your future maintenance budget. For information about budgeting for new developments, see the *Planning* chapter of the *Housing Development Manual.*

ANNUAL OPERATING BUDGETS

These documents project the anticipated revenues and costs of operating your LHA for a one year period. Maintenance expenses (i.e. salaries, materials, and contracts) are major components of these budgets. EOCD currently requires each LHA to prepare a single consolidated operating budget. To conduct a development-based budgeting operation you need to prepare projections of costs and revenues for each site. The operating budget states the costs for both routine and extraordinary maintenance operations.

Available for notes

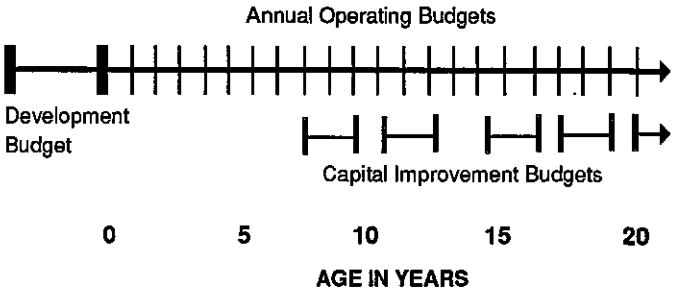
MODERNIZATION (CAPITAL IMPROVEMENT) BUDGETS

All owners of substantial real estate must plan for capital improvements. When repairs and modifications to public housing are too large to be paid for out of a single year's operating budget (e.g. new roofs, replacement of boilers, installation of sprinkler systems), they may qualify for modernization funding. In this way, modernization and maintenance are closely linked. For information about budgeting for modernization, see Chapter 1, *Planning and Funding*, in the *Modernization Manual.*

LEASED HOUSING BUDGETS

The budgets for revenues and expenditures in the Section 8 and Chapter 707 programs do not include maintenance items and do not have important implications for your maintenance operation because these programs rely on private landlords to provide the housing units and maintenance services.

The Budgets in the Life of a Typical Development



MAINTENANCE ASPECTS OF YOUR VARIOUS BUDGETS

IMPORTANT

Think about maintenance from the moment you begin working with an architect on plans for a new development.

C MAINTENANCE ASPECTS OF YOUR VARIOUS BUDGETS

DEVELOPMENT BUDGETS

Design or materials choices made at the development stage of new housing complexes have important ramifications for the maintenance of the properties once they are occupied. Always keep your maintenance program in mind while planning your new developments. For help in this area refer to Chapter 1, *Planning and Funding*, in the *Modernization Manual.*

OPERATING BUDGETS

The Operating Budget is where the costs for basic maintenance tasks are stated. These expenses are entered primarily on four lines of the EOCD budget:

■ **Maintenance Labor** *(Line 17, Account 4410, EOCD Budget Form)*

This line will contain all of your maintenance staff payroll. Each year in the budgeting process, review the staffing pattern currently in use, consider the needs expressed by managers, maintenance supervisors, site-based staff and residents and consider carefully the potential impact of new strategies for maintenance under consideration. This will help you decide how many and which kind of staff you need. Maintaining the careful records suggested in Chapter 2 on *Work Orders*, will provide you with all the necessary data to make most of these decisions. For example, if your carpentry work orders are taking three weeks to be completed, you may need additional carpenter hours in your staffing plan or a service contract to cover some of this work load. If you are getting substantial recalls on carpentry work orders, you may need some training hours for that staff person or you may need a different person. Careful analysis of this data is an important part of your staff budgeting procedure.

IMPORTANT

Where to show routine maintenance cost on your EOCD budgeting forms:

1. Salaries (Line 17)
2. Materials and Supplies (Line 18)
3. Contracts (Line 19)

EOCD Budget Form

050 (10-86)
Page 1 of 16

EXECUTIVE OFFICE OF COMMUNITIES AND DEVELOPMENT
ANNUAL OPERATING BUDGET

LHA NAME _____ NO. OF UNITS _____ Original ☐
FISCAL YEAR ENDING _____ UNIT MONTHS _____ Revision No. _____
DEVELOPMENT NO. _____

			(1)	(2)	(3)	(4)	(5)
			CURRENT YEAR APPROVED BUDGET	LHA REQUEST		EOCD MODIFICATION	
Line No.	ACCT. NO.	CLASSIFICATION	PUM	PUM	AMOUNT	PUM	AMOUNT
		OPERATING RECEIPTS					
1	3110	Shelter Rent—Tenant					
2	3116	Shelter Rent—Federal Section 8					
3	3116	Shelter Rent—EOCD Section 8					
4	3120	Utility Charges to Tenants					
5	3190	Nondwellling Rentals					
6	3610	Interest on Investments					
7	3690	Other Operating Receipts					
8	3000	**TOTAL OPERATING RECEIPTS**					
		NON-UTILITY EXPENDITURES					
9	4110	Administrative Salaries					
10	4130	Legal					
11	4140	Members Compensation					
12	4150	Travel & Related Expense					
13	4170	Accounting Services					
14	4190	Administrative Other					
15	4100	**TOTAL ADMINISTRATIVE**					
16	4230	**Tenant Organization**					
17	4410	Maintenance Labor					
18	4420	Materials & Supplies					
19	4430	Contract Costs					
20	4400	**TOTAL MAINTENANCE**					
21	4510	Insurance					
22	4520	Payment in Lieu of Taxes					
23	4540	Employee Benefits					
24	4500	**TOTAL GENERAL**					
25	4790	Provision for Operating Reserve					
26	4799	Provision for Capital Reserve					
27	4700	**TOTAL RESERVES**					
28	4800	**EOCD-Directed Costs**					
29	4900	**Debt Service (Section 8 ONLY)**					
30		**TOTAL NON-UTILITY COSTS**					
		UTILITIES					
31	4310	Water & Sewer					
32	4320	Electricity					
33	4330	Gas					
34	4340	Fuel					
35	4360	Energy Conservation					
36	4390	Other					
37	4300	**TOTAL UTILITIES**					
38	4000	**TOTAL OPERATING EXPENDITURES**					
39		**NET INCOME (DEFICIT) BEFORE SUBSIDY**					
40	7300	Operating Subsidy Received/Earned					
41		**NET INCOME (DEFICIT) BEFORE NONROUTINE EXPENDITURES**					
		NONROUTINE EXPENDITURES & (CREDITS)					
42	6210	Prior Year & Other Adj. Dr. (Cr.)					
43	6510	Extraordinary Maintenance					
44	6580	Collection Loss					
45	6580	Replacement of Equipment					
46	7630	Receipts from Sale of Equipment (Cr.)					
47	7540	Betterments & Additions					
48		**TOTAL NONROUTINE (SCHEDULE V)**					
49	2700	**NET INCOME (DEFICIT)**					

■ Maintenance Materials and Supplies *(Line 18, Account 4420)*

A similar set of questions should be reviewed for this line item. How much of each material was used last year? Were any work orders held up because of a lack of this material or supply, indicating a need to budget for greater quantities? Did it fail too frequently, indicating a need to budget for better quality? Are there items we did not have last year that would help us do a better job if we bought them next year? Are there new items that we need to buy because we have installed new equipment or facilities? Once again, active participation in the budgeting process by a wide range of people concerned with maintenance will help you get the best possible answers for these questions.

Good record keeping through your work order system and your purchasing and inventory system will help greatly in determining how to budget for the coming year.

■ Maintenance Contract Costs *(Line 19, Account 4430)*

This is a line item that allows you great discretion in your budgeting for maintenance. As a result, it may require some of the greatest analysis and consideration. Some maintenance tasks are either so technical or so rarely used that it only makes sense to undertake them on a service contract basis. Elevator maintenance, hazardous waste removal and major boiler overhaul are good examples. At the other extreme, most LHA's would never consider using a contractor for routine maintenance tasks, such as unplugging toilets or replacing broken windows. Between these two extremes, however, there are a wide range of tasks that can be handled either by staff or by contractors. Some examples follow.

Available for notes

Potential Contract Services

- Extermination
- Landscaping
- Unit painting
- Routine roof maintenance and repair
- Routine boiler maintenance and repair
- Refurbishment of vacant apartments with substantial damage
- Licensed work (plumbing, electrical, other specialized), especially in small authorities with generalist staff
- Compactor maintenance and repair
- Storm drain or septic system clean out
- Trash removal
- Snow removal

In each of these areas, you should carefully consider whether your agency is best served by having the skills on your permanent staff or by contracting for them as needed. Review the following questions when considering the use of outside contractors to complete a maintenance task at your LHA:

1. How much of this service do we need each year?
2. Do the skills exist within the current staff?
3. Could current staff be trained to perform the function?
4. What would it cost to hire new staff who could perform this function?
5. Does the staff have time to perform the function?

Available for notes

6. What might not get done if the staff began to perform this function? Or, conversely, what could the staff do if it no longer had to perform this function?

7. What will it cost to contract for this service?

8. Are there available firms that perform this service effectively?

9. Which alternative, staff or contractor, will allow for the most efficient supervision?

10. What has been the experience of other similar sized LHA's in your area with these two options?

The careful analysis of these questions is an important part of your annual budget process. You may find that because of changes in technology or availability of competent private firms, a switch to contractors can save your staff considerable time and headaches and allow them to undertake other assignments that help your agency function more effectively. Alternatively, it is possible that new staff members with special skills or newly installed equipment will allow you to bring a task back in-house saving considerable money and gaining more effective quality control. Whatever the case, annual contract reviews should be conducted with consideration given to how a reconfiguration of staff and contractor assignments would provide the most efficient maintenance operation.

All routine maintenance expenses are contained in Lines 17, 18 and 19. Please note that some other line items (e.g. Line 21, Insurance; Line 23, Employee Benefits; and all of the Utility Lines - 31,32,33, and 34) are effected by the decisions you make on lines 17, 18, and 19. For example, if you shift some tasks from staff to service contracts your maintenance salaries line will be reduced and your employee benefits line will also be reduced.

IMPORTANT

Where to show unusual maintenance costs on your EOCD budgeting forms:

1. Extraordinary maintenance *(Line 43)*
2. Replacement of equipment *(Line 45)*
3. Betterments and additions *(Line 47)*

■ Non-routine Expenditures

Some maintenance related expenses can be placed in the Non-routine Expeditures budget category. If your authority is in good financial condition, currently defined as maintaining 40% of maximum allowable reserves, you will be able to use the lines at the bottom of your budget forms to accomplish tasks that fall somewhere between routine maintenance and capital improvements. This is another area of major flexibility for your agency. These lines can be used creatively to supplement an annual maintenance budget in important ways. In order to have these options, you need to first manage your agency in a financially sound manner, since the money that can be spent on these items comes from annual deposits made to your reserve funds. Reserves will be too low to allow for these expenditures if you have overspent your budget in maintenance or other areas in the past several years and have drawn funds out of this account. You will have some significant funding flexibility if you have operated within your budget.

1. Extraordinary Maintenance *(Line 43, Account 6510)*

Under this account, you may budget for maintenance costs that are beyond the routine. Note that the dollar figures here include all three categories that appear on separate lines in the main operating budget, i.e. staff salaries, materials and contract costs. This line is really the sum of the total project costs for those tasks that are beyond the scope of your normal operating budget but do not qualify as full scale modernization requests. Examples might include such items as:

- Replacement of doors
- Replacement of kitchen floors
- Repair of fences
- Moderate landscaping
- Community room refurbishment

NOTE

Think about spreading some tasks over several years. Where your budget is typically not large enough to cover the costs in a single year, phased purchasing may make the project possible.

If the level of effort for any of these tasks were very small, it could be handled in the normal maintenance budget. It might constitute a modernization task if it were a full scale assignment for a large development. If the task falls somewhere in the middle, then it may fit into the definition of extraordinary maintenance. The definitions for this and other categories within the non-routine expenditures portion of the budget are provided in the Accounting Manual for State-Aided Housing programs, Page 6-52. Note that this budget category anticipates the possibility of costs spread over several years. A $10,000 item could be budgeted for $3,000 of work in year 1, $4,000 in year 2 and the final $3,000 in year 3, if the task could be completed in that fashion (e.g. storm window replacement). This adds to your flexibility. If your routine operating budget is tight in a particular year, and there are higher priorities in your modernization budget, then you might take a project you would normally complete under modernization funding, divide it into several parts and use extraordinary maintenance funds to undertake the work.

2. Replacement of Equipment *(Line 45, Account 7520)*

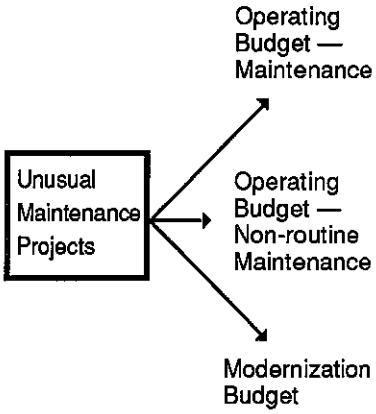
If possible, your operating reserves should be used to purchase these items instead of your operating budget. This line allows for the purchase of refrigerators, stoves and other similar appliances and equipment. If you do not have adequate reserves, these items will have to be purchased with regular operating funds.

3. Betterments and Additions *(Line 47, Account 7540)*

Funds from this budget category are used to finance additions to your developments as opposed to the maintenance, repair or replacement of existing components or equipment. This can include small construction projects such as the addition of vestibules to outside apartment doors for energy conservation or the installation of an intercom system for safety. It may also include the addition of equipment such as lawnmowers, snowblowers or paint sprayers.

NOTE

WHERE DOES YOUR UNUSUAL MAINTENANCE PROJECT FIT?



There are no firm guidelines for balancing spending among these accounts, or for determining spending in non-routine categories. One exception is that you may not spend operating reserves below the minimum levels specified for your authority by EOCD. In one year, you might decide to spend every available dollar. In other years, you might spend a modest amount and save the balance for a larger project in a succeeding year, or for an anticipated shortfall in the next operating budget. The fact that you have so many choices makes it all the more important that you collect the data necessary to help you make these decisions.

In short, when developing your maintenance budget, you need to determine each year what you can fund in the operating budget, what can be taken from the operating reserve and what must be financed through the modernization program. The ability to move various tasks among these budgets is critical to an efficient maintenance program. You can read more about budgeting for modernization in Chapter 1, *Planning and Funding*, in the *Modernization Manual.*

IMPORTANT

Modernize when:

1. Conditions are unsafe
2. Building components or equipment do not work properly
3. Maintenance costs become excessive
4. Buildings, dwelling units, or the site become unattractive
5. You can add something that will increase efficiency

4. Modernization (Capital Improvement) Budget

While the first two budgets that have implications for maintenance are on the same annual operating budget document (EOCD Form 050), the third is in a separate category. Modernization funds are applied for periodically, through a competitive process. EOCD may have varying priorities for the use of your funds from year to year, but you should be able to fund projects which are important to you at some level each year.

Again, there are important maintenance implications involved in modernization planning. Please consult the *Modernization Manual* for assistance in the preparation of modernization work plans and budgets.

Available for notes

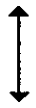
Summary of Maintenance Budgets

ROUTINE MAINTENANCE

Labor

Materials

Contracts



NON-ROUTINE MAINTENANCE

Extraordinary maintenance

Replacement of equipment

Betterments and Additions

Annual operating budget line items

CAPITAL IMPROVEMENTS

Remedy unsafe conditions

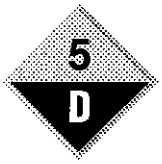
Improve operability

Increase efficiency

Enhance attractiveness

Conserve energy

Special modernization budget



GOOD BUDGETING PROCEDURES

KEY

EOCD recommends that all LHA's move toward a development-based system of budgeting for maintenance.

IMPORTANT

LHAs should become familiar with EOCD's *Accounting Manual for State-aided Housing Programs* and *Yearly Budget Guidelines.*

D GOOD BUDGETING PROCEDURES

EOCD strongly recommends that all LHA's move toward development-based budgeting. Your agency is made up of developments, with a unique complex of structures, neighborhoods, staff and residents. You can increase the efficiency of the overall operation by understanding the individual costs of running each development. For example, your LHA may have a reasonable authority wide vacancy turn-over rate of 17.5 days. However, specific developments may vary from 5 to 30 days. Without development based data you may be unable to determine which developments are having problems turning over apartments and which are not.

EOCD believes LHA's and their residents will benefit from starting the planning for each budget at the development level, compiling those budgets into a full LHA financial document, and then maintaining spending records at a development level in order to inform the following year's budgeting. Before beginning the actual budgeting process, make certain that all people who will participate are familiar with the *Accounting Manual for State-Aided Housing Programs* and the latest edition of the *Yearly Budget Guidelines*. The steps in the budgeting process might look as follows:

1. DEFINE FINANCIAL NEEDS AT EACH DEVELOPMENT

This step should start about four months before the beginning of a fiscal year. Managers should be encouraged to gather data about the previous and current year's spending and to consult with their staff and the residents about additional needs. These ideas might be stated first in terms of projects: "We need to improve the way the grounds look;" or "We need to respond to plumbing requests more quickly." Then the manager can turn these statements into operating cost estimates, i.e. staff time and salaries, materials and contract costs. The manager might suggest that particular projects be accomplished with Non-Routine Expenditures or with Modernization funds.

IMPORTANT

Budget steps:

1. Define program needs at each development, and calculate resulting costs
2. Consider the income side of the budget
3. Formulate an overall LHA budget
4. Seek Board approval
5. Submit budget to EOCD
6. Allocate spending authority
7. Monitor all spending on a development basis
8. Prepare new budget based on spending record

The manager, staff and residents should be encouraged to be ambitious at this point. Prioritization of work items will be critical. If some needs cannot be funded participants will have a head start on planning for the next budget year.

The managers should propose a budget for each relevant line item on the standard EOCD budget form. In this manner, they will get a strong sense of what it really takes to run their development.

2. CONSIDER THE REVENUE SIDE OF THE BUDGET

LHAs do not often think about ways in which a good maintenance program can actually increase income. During the budgeting process determine whether you can reduce vacancy time by a more efficient work effort or reduce the costs of vacancy refurbishment through a more effective inspection program. Managers should also consider how to improve rent collections and eliminate costly vandalism.

3. FORMULATE AN OVERALL LHA BUDGET

Formulating an overall LHA budget at a large LHA may involve several departments and steps. Smaller agencies may have only two or three development budgets to add to the central administration budget. Inevitably, when the individual budgets are added together, the sum will be (and should be) larger than the funds available. The Director must now negotiate the adjustments among developments, and between management and residents. Work items must be prioritized before funds can be shifted from one budget to another or between work items. The low priority items not funded one year may have to be postponed for later funding.

Keep the development based people informed of all adjustments and compromises being made, so that they stay fully involved in the process and can explain to staff and residents what is happening at all times.

4. SEEK BOARD APPROVAL

All budgets must be approved by the Board of Commissioners before submission to HUD or EOCD. State modernization budgets must also be approved by the resident councils of the developments involved before the budget is sent to the Board. This should not be a complicated step if some general budget information has been flowing to the Board during the process. A budget is a policy document, so it is appropriate for commissioners to ask questions and modify budgets where policy is concerned. You should anticipate and invite comments like "It is our policy that we paint every vacancy at turnover. Does the balance between maintenance staff and contract costs allow us to do that?" It is not appropriate, however, for Board members to alter individual line items that represent the staff's judgment about how to carry out a policy.

5. SUBMIT BUDGET TO EOCD

Budgets should be sent to EOCD at least 30 days before the fiscal year begins. This will leave time for review and approval as well as some correspondence around particular issues. When the approved budgets return, managers and residents should be informed of any changes and of the money available for their development in the coming year.

6. ALLOCATE SPENDING AUTHORITY

KEY

Spending authority for LHA maintenance dollars should be distributed in the same way as the responsibility for developing budgets for that spending.

Site managers should have authority to spend maintenance dollars to the same extent that they participated in shaping the budget. A Director of Management should have authority to make trade-offs among the budgets of the managers he or she supervises. A site manager should be able to move dollars among the line items he or she originally worked on. In short, the pyramid of spending authority should reflect the pyramid of budgetary responsibility. At the top of the pyramid is the Executive Director, who is responsible to the Board of Commissioners for living within the full budget. The Board of Commissioners, in return, is responsible to HUD and EOCD for this same commitment.

Available for notes

7. MONITOR FINANCIAL RECORDS ON A DEVELOPMENT BASIS

Executive Directors and their managers should be able to determine the quarterly cost of staff employed at each development, materials used and contract services provided. This data, when added to other cost items, will help the Executive Director and each manager know the financial status at each development. Corrections can be made where needed instead of at the overall LHA level which is often not appropriate or necessary.

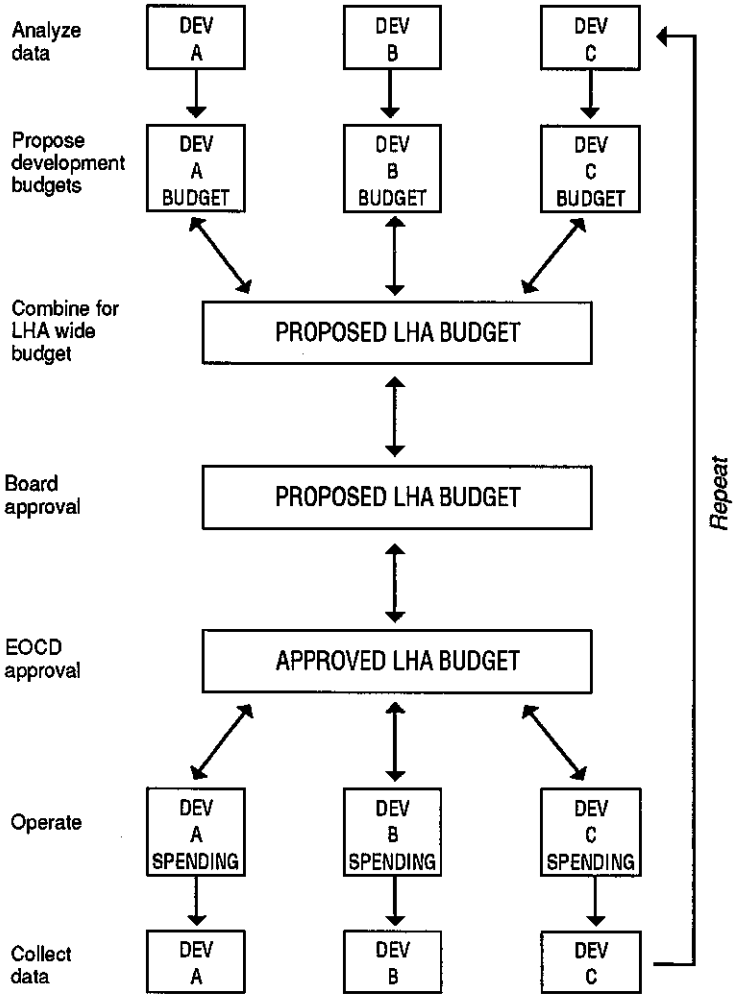
8. PREPARE NEW BUDGETS BASED ON SPENDING RECORDS

Budgeting can be an intimidating experience, but it is not difficult. Previous spending records can greatly improve the accuracy and practicality of the new budget. By using the spending record as a base, you will find the budget preparation process can be a policy setting tool to improve the operation of your LHA.

KEY

EOCD encourages LHAs to involve the broadest possible range of people in the process of budget preparation.

Development-Based Budgeting



SUMMARY — PUTTING THE PIECES TOGETHER

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SUMMARY — PUTTING THE PIECES TOGETHER

KEY CONCEPTS IN THIS CHAPTER:

- Residents, staff, Executive Director and Commissioners must be committed to following the system if the process is to be successful. (page 7-2)
- Priorities, inspections, schedules, work orders and plans are your tools in this trade. (page 7-3)
- Schedules and plans have to be regularly revised if they are to be relevant and real. (page 7-4)
- Perseverance and patience will be needed for tangible and lasting improvements. (page 7-7)

AN INTEGRATED MAINTENANCE DELIVERY SYSTEM

KEY

Residents, staff, Executive Directors and Commissioners must be committed to following the system if the process is to be successful.

A AN INTEGRATED MAINTENANCE DELIVERY SYSTEM

Maintenance systems which are both cost effective in their operation and provide quality services to residents are comprehensive, fully integrated systems. These systems have a lot of pieces but there is a clear logic about how everything fits together. You will get more from your present resources if you refine some procedures and view your maintenance operation as informing and being informed by the work of non-maintenance personnel and/or departments.

1. COMMITMENT AND GOAL SETTING

For any comprehensive service delivery to be useful for your agency, all of the important actors must be committed to developing a good plan and implementation approach. The residents, LHA staff, Board of Commissioners and EOCD must make this commitment. These participants must agree to examine the data closely from such sources as the inspection reports, the work orders, and the CIIS to work with each other to set priorities for both maintenance and modernization, and to abide by those agreements into the future. As soon as these agreements are broken by one party, all the others are tempted to break them as well.

2. GETTING STARTED: TAKE INVENTORY

The first step in the development of a comprehensive program is an accurate assessment of the current conditions at your developments. Use the CIIS to record your findings. EOCD recommends you conduct a random survey of 5% of your apartments and inspect all of your buildings and sites. Keep the completed Field Manuals from the CIIS assessment both for your own files and for future submission to EOCD in support of modernization applications. Consult the *Modernization Manual* and your EOCD modernization project manager for information on efficiently using CIIS.

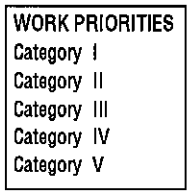
KEY

Priorities, inspections, schedules, work orders and plans are your tools in this trade.

3. MAKE PLANS

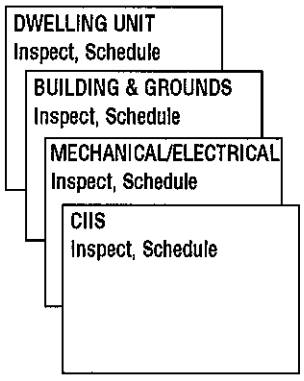
Once you have defined existing conditions you can begin to shape maintenance and modernization plans. Generally, you will find that the decisions you can make fall into a logical hierarchy:

A. Set Priorities



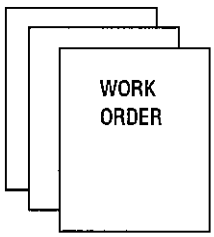
Confirm the order of work performance of your maintenance operation. Make sure staff, Board and residents know the priorities.

B. Develop inspection Schedules



Prepare inspection schedules for living units, grounds, building and mechanical systems. Document all inspections with written reports. Your schedule should clearly identify when CIIS forms should be completed as part of the inspection documentation.

C. Issue Immediate Programmed Maintenance Work Orders



You are likely to find some tasks during inspections that need immediate action. You should complete work orders for these assignments and insert them into the ongoing Programmed Maintenance Schedule.

KEY

Schedules and plans have to be regularly revised if they are to be relevant and real.

D. Revise your Preventive Maintenance Plan

PREVENTIVE MAINTENANCE PLAN REVISION

In the course of your observations or some of your data review or discussions, you may have discovered that some element needs more frequent, or different, preventive maintenance. For example, you may have concluded that there are too many maintenance calls for a particular piece of equipment and if it were oiled more frequently, your staff believes there would be fewer breakdowns. By altering your Preventive Maintenance Schedule, this can be easily accomplished and the equipment may last several more years, thus postponing the significant replacement costs of modernization.

E. Consider Extraordinary Maintenance

EXTRAORDINARY MAINTENANCE BUDGET

Some inspections or findings may indicate the need for significant maintenance, but not major work. In these cases, you should review your operating reserves and determine whether this task can be programmed in the Extraordinary Maintenance section of you regular annual operating budget (see *Chapter 5 - Budgeting* for more information on this process). This form of maintenance, which is planned as a part of your regular annual operating budget may offer you the opportunity to substantially extend the economic life of a building component without the highly complex effort that is required for a full blown modernization project.

F. Schedule Major Refurbishment or Replacement on Your 20 Year Plan

20 YEAR CAPITAL IMPROVEMENT PLAN REVISION

Revise your long range Capital Improvement Plan whenever you undertake a major inventory, a task that should be repeated at least every three

Available for notes

years. The *Modernization Manual* describes the planning process which should be followed. Some actions can probably be pushed further into the future because your preventive and other maintenance efforts have extended the useful life of that component. Others may have to be moved up because of premature aging, heavier than expected use or unexpected events (e. g. floods, fires, vandalism). Still other tasks may have to be added to the 20 Year Plan as new assignments, because they have not been anticipated previously and cannot fit into any of the categories noted above.

As you revise the long range schedule, you will need to think about several issues. How much work are you likely to be able to get funded over the next several years? How many tasks can be undertaken at one site without making life unbearable for the residents? Which tasks are straightforward and can go into construction quickly and which ones will require more lead time for analysis and design? The answers to these and other questions will help you in adjusting your 20 Year Plan.

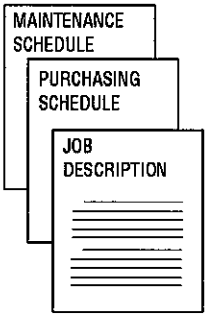
G. Formulate Your 5 Year Plan

FIVE YEAR CAPITAL IMPROVEMENT PLAN NEXT FISCAL YEAR

Your modernization program should have an annual rhythm to it. Prior to the anticipated issuance of a Notice of Fund Availability (NOFA) review the tasks which the 20 Year Plan calls for in the coming fiscal year. Meetings with staff and residents that are effected are important parts of this process. Then, when the NOFA is issued, you will be ready to supply the appropriate data, justify the request and explain how it fits with your overall capital improvement planning. If your planning has been thorough and no major surprises have occurred, you should simply be able to consult the 20 Year Plan and proceed to complete the application forms. Otherwise, all parties should be consulted about the adjustments and the documents submitted to EOCD should reflect the reasons for the changes.

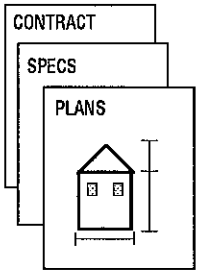
Available for notes

H. Adjust your staffing pattern, purchasing plan and maintenance scheduling, if necessary.



Any modernization plans developed for the long run or for the coming year will have an impact on your maintenance planning for the immediate future. You may want to change some job descriptions in order to add skills to the staff in anticipation of tasks that will have to be performed in the future because of the installation of new equipment. You may need to plan for new items in the programmed purchasing operation. Some maintenance tasks may need to receive a higher priority because a planned modernization task has been delayed and the component will need extra attention to last another year. Remember also that whenever you think about modernization activities, think too about your maintenance program and the effects that one will have upon the other.

I. Carry out your Work Plans



This task is ongoing at all times for most authorities. As soon as your oldest building is at least ten years old, it is likely to have a continual need for modernization tasks (or extraordinary maintenance) for the rest of its economic life. Plan on being in some stage of modernization activity almost all of the time. This includes analysis of problems, selection of designers, review and approval of designs and specifications, bidding, selection of contractors, supervision of work, closing of contracts, administration of guarantees, and planning for preventive maintenance.

PERSEVERANCE AND PATIENCE

KEY

Perseverance and patience will be needed for tangible and lasting improvements.

B PERSEVERANCE AND PATIENCE

This guidebook gives you a framework and model documents to support recommended procedures. You will not see significant improvements at your LHA if you randomly adopt only a few of the initiatives. To realize the full potential of a comprehensive maintenance delivery system will require real perseverance by you, your staff, residents and commissioners. This is something which you will have to work on collectively but patience with yourselves and each other will be rewarded.

Set some interim goals for your LHA like establishment of a set of work priorities in 60 days and a finalized inspection schedule by the end of the quarter. A few successes in terms of improved service delivery will begin to win over even the most skeptical folks. The investment of time will produce efficiencies in operations that will allow your LHA to do some projects it would otherwise not be able to afford. Perseverance and patience are the key factors!

MODEL FORMS

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your generators. Each piece of equipment needs a detailed plan such as this which can be incorporated in your overall LHA Preventive Maintenance Program.

5. Annual Preventive Maintenance Schedule 8-10

A more general calendar version of the scheduling of preventive maintenance tasks throughout the year.

6. Programmed and Preventive Maintenance for High-rises 8-12

An example of a calendar version of a preventive maintenance schedule for high-rise buildings.

7. Programmed and Preventive Maintenance for Vehicles 8-15

An example of a calendar and mileage version of a preventive maintenance schedule for vehicles.

8. Preventive Maintenance Calendar 8-17

An example of a calendar on which preventive Maintenance tasks can be scheduled and initialed as they are completed.

9. Call-in Log 8-18

A model form for recording calls regarding maintenance issues, and the disposition of those calls, including the work order number associated with each call.

HOUSING AUTHORITY

Emergencies

Example	Primary Reason
Fires of any kind	Dangerous to life and structures
Gas leaks	Dangerous to life and structures
Electric power failure	Dangerous to safety
Elevator stoppage	Dangerous to safety
Broken water pipes	Dangerous to health
Sewer blockage	Dangerous to health
Roof drain blockage	Dangerous to structures
Roof leak	Dangerous to structures
Security lock failure	Dangerous to safety
No heat	Dangerous to health
Inoperative refrigerator	Dangerous to health
Snow or ice storm	Dangerous to safety

Vacancy Log

Month ____________________ Project ______________________________

Unit number	Bedroom size	Reason for moving	Reason for moving	Move out or last rent date	Date work order issued	Down days	Date unit ready	Make ready days	Date rent begins	Leasing days	Total vacancy days (down + make ready + leasing days)	Previous monthly rent for unit	Divide Prev. monthly rent by No. of days in this month	Equals actual daily rent	Vacancy loss (actual daily rent times vacancy days)
				TOTAL # of move-outs in your sample		TOTAL		TOTAL	TOTAL # of units leased	TOTAL	TOTAL				Vacancy loss (round to nearest dollar [$])

DIVIDE total move-outs ________ BY total units in sample ________ = ________ % Sample turnover rate

PREVENTIVE MAINTENANCE PROGRAM

MASTER INVENTORY LIST

DEVELOPMENT

Reference No.	Maintenance Worthy Item
1	GAS/OIL BOILER #1
2	GAS/OIL BOILER #2
3	GAS/OIL BOILER #3
4	4 MAIN HEATING HOT WATER CIRCULATING PUMPS
5	2 AUXILIARY HEATING HOT WATER PUMPS
6	2 MAIN DOMESTIC HOT WATER CIRCULATING PUMPS
7	4 SMALL HOT WATER CIRCULATING PUMPS & TANK
8	DOMESTIC WATER PREHEATER
9	2 FUEL PUMPS
10	CONTROL AIR COMPRESSORS
11	HOPPER MATERIALS HANDLING EQUIPMENT
12	EXTERIOR MATERIALS HANDLING EQUIPMENT
13	BOILER ROOM BUILDING
14	APARTMENT INTERIORS
15	APARTMENT EXTERIORS
16	GROUNDS

PREVENTIVE MAINTENANCE PROGRAM

Generator

Every Start
- A. Check coolant level
- B. Check batteries
- C. Check engine oil level
- D. Check instrument readings
- E. Check battery charger

Every 10 hours
- A. Air cleaner oil cup - check level
- B. Air pre-cleaner - clean
- C. Cooling system - check level and deposits
- D. Oil speed control linkage and Flo-matic control
- E. Check engine oil in crank case

Every 50 hours
- A. Air cleaner element (dry) - clear
- B. Fan and water pump belts - check tension and wear
- C. Flexible rubber connector between carburetor and air cleaner- inspect for loose fit or damage
- D. Flo-matic control linkage - 3 drops of oil
- E. Alternator belt - check tension and wear
- F. Power take-off clutch - check and adjust
- G. Radiator core - clean spaces

Every 100 hours
- A. Automatic dust unloader - empty
- B. Battery - check electrolite level
- C. Crank case - change oil

Every 150 Hours
- A. Spark plugs - clean and gap

Every 200 hours
- A. Crank case ventilator metering valve - clean
- B. Fuel pump filter - clean and check sediment bowl
- C. Change engine oil filter
- D. Distributor - apply oil to arm pivot and felt wick under rotor

Every 500 hours
- A. Carburetor fuel screen - remove and clean
- B. Distributor cap - remove and clean
- C. Distributor rubbing block - high temperature grease in back
- D. Distributor housing - 8 to 10 drops of engine oil in cup
- E. Distributor drive shaft - three strokes of hard lubricator
- F. Governor control wire - two strokes of hard lubricator to each fitting

Periodic
- A. Battery terminals - clean and grease
- B. Oil pump screen - clean when pan is removed
- C. Wiring - check for worn, cracked or corroded connections

PREVENTIVE MAINTENANCE PROGRAM

General Preventive Maintenance Schedule

Every Month

1. Spray hallways and common areas for bugs.
2. Drain hot water heaters.
3. Do fire alarm tests with tenants; also check fire doors and fire extinguishers.
4. Check emergency lighting system.
5. Do inventory of supplies.

January

1. Do combustion test.
2. Check/grease heat circulating pumps.
3. Check/replace glycol.
4. Clean dryer vents.
5. Grease/oil solar circulating pumps.
6. Clean/disinfect compactor and trash chutes.

February

1. Shampoo carpet in elevators.
2. Test water in building
3. Strip,wax, and buff VAT linoleum floors.
4. Clean/disinfect compactor and trash chutes.

March

1. Check/replace glycol.
2. Touch up paint in all areas, community rooms, hallways, etc.
3. Shampoo carpet in elevators.
4. Clean heater vents in all common areas.
5. Clean/disinfect compactor and trash chutes.

April

1. Till dirt in garden.
2. Clean/disinfect dumpsters and compactor.
3. Drain boilers - remove sediment.
4. Clean dryer vents.
5. Service lawn equipment.
6. Inspect roofs.
7. Clean blinds in community room.
8. Shampoo furniture in lobbies.

May

1. Shampoo carpet in elevators.
2. Shampoo carpet in hallways.
3. Sweep parking lots.
4. Check/clean air conditioning condensor.
5. Clean/disinfect dumpsters and compactor.
6. Check/replace glycol.
7. Wash building windows on outside.
8. Fertilize lawn.

June

1. Clean/disinfect dumpsters and compactor.

July

1. Clean/disinfect dumpsters and compactor.
2. Check/replace glycol.
3. Wash building windows on outside.
4. Clean dryer vents.
5. Grease/oil solar circulating pumps.

August

1. Shampoo carpet in elevators.
2. Clean/disinfect dumpsters and compactor.
3. Strip, wax, and buff vat and linoleum floors.

September

1. Clean/disinfect dumpsters and compactor.
2. Drain boilers/remove sediment.
3. Touch up paint in all public areas, community rooms, hallways, etc.
4. Check/grease heat circulating pumps.
5. Clean heater vents in all common areas.
6. Clean blinds in community rooms.
7. Check/clean solar circulating pumps.

October

1. Shampoo carpet in hallways.
2. Sweep parking lots.
3. Buy sand/ice melt for winter.
4. Test all emergency pull chains in apartments and common areas.
5. Test/clean all smoke detectors.
6. Clean/disinfect dumpsters and compactor.
7. Do combustion test.
8. Clean dryer vents.
9. Wash building windows on outside.
10. Fertilize lawn.
11. Wrap trees if needed.
12. Service snow blowers.
13. Check/clean solar circulating pumps.

November

1. Shampoo carpet in elevators.
2. Check/replace glycol.
3. Clean/disinfect compactor and trash chutes.
4. Check/clean solar circulating pumps.

December

1. Clean/disinfect compactor and trash chutes.

PREVENTIVE MAINTENANCE PROGRAM

Programmed and Preventive Maintenance for Highrises

DAILY

1. Check and clean trash rooms as needed
2. Check and clean debris from laundry rooms
3. Empty ash trays and trash cans in community room
4. Check rest rooms and clean as needed
5. Check boiler room for temperature readings, circulators, condensation, etc.
6. Do tenant requests and non-routine repairs
7. Check elevator cars, clean as necessary
8. Clean shop each day
9. Put flag up in the A.M. and take down in the P.M.
10. Check grounds for debris and pick up as necessary
11. Vacuum and/or dry mop lobby as necessary
*12. Help out in a vacancy

WEEKLY

1. Exercise generator and perform operators' maintenance
2. Mop and buff bathrooms, clean toilets and mirrors
3. Mop and spray buff lobby and dust
4. Dry mop and damp mop laundry rooms
*5. Dry mop, damp mop, spray and buff community room floor every other week and dust
6. Clean glass in lobby
7. Change dumpster twice per week and clean floor
8. Check compressor and bleed drying system
*9. Pest control - contract
10. Service tractors and lawnmowers as required on log sheet
11. Clean boiler room as needed
12. Blow down front and rear lines as dictated by water reports
13. Check stairwells and clean debris
14. Alternate boilers running
15. Clean garage of any debris

MONTHLY

1. Vacuum all floors
2. Dry mop, damp mop, spray and buff laundry rooms and clean walls of any other spots
3. Clean glass in community room
4. Hose down and deodorize compactor
5. Clean filters on clothes dryers
6. Wash trash room floor and clean slop sinks in janitorial rooms
7. Check boiler water treatment
8. Clean kitchen completely in the community room - cabinets, floors, sink, appliances
9. Dust sills and woodwork as needed
10. Take utility readings with city, utility companies
*11. Unit inspections - schedule so as to complete 100% each year.

QUARTERLY

*1. Test 25% of the fire alarm systems - contract
2. Punch boilers as needed
3. Dust fan blades in community room

SEMI-ANNUALLY

*1. Fertilize lawns and grounds; lime and insect control - contract
*2. Snake out main drain lines
3. Lubricate blowers, fans, motors and circulators
*4. Dry mop and dust stairwells and clean soiled areas
5. Clean corridor walls as necessary of soiled areas
6. Test generator full load with generator technician
7. Defrost community room refrigerator
8. Assess stock, equipment and needs for budget October 1st

ANNUALLY

*1. Clean light lenses
2. Check, grease, change belts on roof fans
3. Clean glass and screens in corridors, stairwells and other common areas
*4. Shampoo all carpets
5. Fire extinguishers and hoses - contract
*6. Metal lock floor wax system: strip, seal and 5 coats every 2-3 years
7. Check washing machine hoses
8. Inventory tools, equipment, refrigerators and stoves in stock January 1st each year
9. Put biodegradable chemical for drains in top floor lines of mains
10. Clean corridor doors, handles, kick plates
11. Clean storage rooms
12. Clean, repaint or replace ceiling tiles in common areas
13. Those with full dual burners (RI 3-3 and 3-4), run on oil for a couple of days

SEASONAL

1. Shut down boilers not designated for hot water and shut pilot
*2. Cut grass every week and vacuum as necessary
3. Clean walks in the winter and treat ice each day
4. Inspect boiler fire box and clean lenses of eye before heating season
5. Prune trees and shrubs twice each season
6. Block vent in penthouse for elevator cars in the winter and remove in the summer
7. Check roof for cracks, wear, etc.
8. Check building exterior for drainage problems, cracks, leaks, rusting, peeling, etc.
9. Water lawns each day in hot weather

* Extra help may be required

EXTRA HELP

1. Alternate 1 person each week from 3-1 then 3-2 the next week to spend one day at each highrise.

   A. Monday, 3-3
      Tuesday, 3-5B
      Wednesday, 3-4
      Thursday, 3-5A
      Friday, catch up 3-3 or 3-4

2. Vacuum at least two floors per week, dry mop, damp mop, spray and buff community room floor, help out with unit inspections, cut grass in summer, clean some general areas on the off week when not doing community room, e.g. stairwells, laundry rooms, kitchen and trash room.

3. Serious problems requiring special help with major repairs will be handled on a per-call basis from the resident maintenance person to the foreman. e. g., vacancies, snow storms, broken windows, no heat.

EXTRA HELP AT HIGHRISE

1. Summer kids, etc.: Stairwells, corridors and lobby windows and screens, light lenses, yard work

2. Staff from family developments: Shampoo carpets, lubricate locks, wax floors, buff community room, snake out main drains, inspect some units, cut grass, vacuum corridors upstairs, snow removal help

3. Contract work: Pest control, elevators, fire alarm systems, fire protection system, lawn fertilizing and insect control, burners, boilers, heat controls, compressor generator

PREVENTIVE MAINTENANCE PROGRAM

Programmed and Preventive Maintenance for Vehicles

DAILY

1. Check tires: wear, pressure, etc.
2. Check frame and suspension: for loose bolts, cracks, etc.
3. Check parking brakes.
4. Check safety lights.
5. Fluid leaks.
6. Check steering column lock and starter safety switch.
7. Check transmission shift indicator.
8. Check instrument gauges; oil, amperes, etc.
9. Check spare tire and jack.

Monthly

1. Check fluid levels: crank case, transmission etc.
2. Check antifreeze, radiator rust inhibiter and thermostat.
3. Check windshield washer fluid.
4. Check belts and hoses.
5. Check plugs, wiring, battery, clean and grease terminals.
6. Clean out air cleaner.
7. Check carburator hoses and linkage.
8. Check wheel alignment and tire balance (uneven wear of tires).
9. Check heater and defroster
10. Check wiper blades for wear.

3 MONTHS OR 3,000 MILES

1. Change oil and filter.
2. Grease fitting on chassis.
3. Lube propeller shaft, universal, linkages.
4. Check fluid in master cylinder.
5. Check fluid level in power steering unit.
6. Lube front suspension and steering lunkage.
7. Adjust carburator idle speed.

YEARLY

1. 7,500 miles or yearly rotate tires.
2. Change transmission fluid and filter.
3. Change air filter.
4. Change rear axle fluid.
5. Drain radiator and flush, check all hoses and cap. Also clean outside of radiator.
6. Change fuel filter.
7. Change spark plugs and adjust timing and check distributor cap inside and out for cracks.

PERIODIC

Every 25 hours

a. Change oil
b. Clean sediment bowl
c. Check battery

Every 100 hours

a. 25 hour service
b. Check spark plug gap .025
c. Clean oil and dirt from block and plugs
d. Check gaskets for leaks
e. Check belts for wear
f. Check for loose nuts and bolts

Every 500 hours

a. Perform 25 and 100 hour service
b. Remove head and clean out deposits
c. Clean carburator
d. Check ignition system

75,000 MILES: clean and repack wheel bearings
15,000 MILES or more: reline brakes
5,000 MILES or more: check steering and suspension system for wears, damage, loose parts.
10,000 MILES or more: check exhaust system for leaks

Weekly during the winter check the underbody for corrosive materials and hose off.

15,000 MILES - check and clean PVC filter on crankcase cover.
Use dry gas whenever engine knock occurs or water is suspected in fuel.
Lube hood latch and hinge assembly.
In the winter check hydraulic system for plow daily for leaks, wear and fluid level.
Lube door latch and hinge assembly as needed along with tail gate and weather stripping.
In the winter check daily the plow cutting edge, running shoes and all frame bolts.
In the summer extend left cylinder and coat with grease.

Preventive Maintenance Implementation Schedule

Development _____

PROGRAM	J	F	M	A	M	J	J	A	S	O	N	D
Fire Hose Inspection	\	\	\	\	\	\	\	\	\	\	\	\
Refuse Chute Entry Inspection	\	\	\	\	\	\	\	\	\	\	\	\
Vertical Transportation Equipment Inspection	\	\	\	\	\	\	\	\	\	\	\	\
Hot Water — Flush Tank	\	\	\	\	\	\	\	\	\	\	\	\
Fire Extinguisher Inspection	\	\	\	\	\	\	\	\	\	\	\	\
Hot water — Motor Service			\			\			\			\
Air Conditioner Service				\			\					
Catch Basin Inspection and Service					\						\	
Exhaust Fan Inspection and Service				\						\		
Pump and Generator Motor Service		\					\					
Hot Water — Drain Tank	\											

CALL IN LOG

DATE	TIME	CALLER	PROBLEM	WORK ORDER	ASSIGNED TO	DATE COMPLETE	HRS

LHA

HOUSING AUTHORITY WORK ORDER

Work Requested By			Control No.
Address		Date and Time of Origination	
Location	Permission to Enter	Dog/Cat?	Telephone
Resident			
Wrok Requested			Priority
Comp. By	Assigned To		Date/Time Assigned
Code	Work Accomplished		Date/Time Started
Vendor Identification			Date/Time Completed

I.D. No	Employee	Hrs	Ch?	#	Materials	Cost	Ch?

Resident Signature	Comments	Copies To:
Work Review		1 2 3

Providence Housing Authority

Notice of Entry

(This card is notice that your apartment was entered by the persons listed below)

Date: _____ Time Entered: _____

Unit Entered: _____

Reason for Entry: _____

_____

_____

_____

Persons who entered: _____

_____

_____

_____ HOUSING AUTHORITY

Living Unit Inspection Report

Address: _____ Unit #: _____ Specified Location: _____

Location: LIVING ROOM DINING ROOM BEDROOM HALL STAIRWAY ENTRY HALL MISC.(SPECIFY) _____

Circle one

ITEM	CODE	WORK REQUEST DESCRIPTION	WORK ORDER #
Entry door and hardware			
Floor/floor covering			
Walls			
Interior decoration			
Trim			
Ceiling			
Doors			
Windows			
Screens			
Switches			
Lighting			
Receptacles			
Heating unit			
Closet			
Thermostat			
Stairs			
Handrails			
Intercom - doorbell			
Mailbox			
Sprinkler head			
Smoke detector			
Emergency call switch			

Remarks:

Code Reporting Key

1 = Acceptable
2 = Repair
3 = Clean
4 = Replace
5 = Paint
6 = Not applicable
7 = Other (specify)

Inspected by: _____ Date: _____

HOUSING AUTHORITY

Report of Inspection of

Development	Date	Inspector

1	2	3	4	5

Reviewed By _____ **Date** _____

HEADINGS FOR VARIOUS USES OF GENERIC INSPECTION FORM

The accompanying inspection form is generic and can be used for a number of different types of inspections. Below are suggestions for column headings which are useful for various inspection tasks.

1. Fire Hose Inspection
   A. Column 1 - "Location" (those listed should be very specific)
   B. Column 2 - "Inspected"
   C. Columns 3,4,5 - "Comments"

2. Refuse Chute Entry Inspection
   A. Column 1 - "Location"
   B. Column 2 - "Condition"
      Codes might be 1 - Requires cleaning
      2 - Storage to be removed
      3 - Replace lights
      4 - Faulty Operation (specify)
      5 - Mechanical instability (specific)
      6 - Approved
   C. Column 3,4,5 - "Comments"

3. Elevator Inspection

   A. Column 1 - "Items for Inspection" (to include entries such as Equipment rooms - cleanliness, lighting, security, and storage; Cabs - operation, cleanliness and lighting
   B. Column 2,3,4,5 - "Room number" on "cab number"

4. Hot Water Heating Service Inspection
   A. Column 1 - "Time" (A list of months)
   B. Column 2 - "Relief Valve"
   C. Column 3 - "Tank Flush"
   D. Column 4 - "Motor Service"
   E. Column 5 - "Sediment & Scale Removal"

5. Common Area Air Conditioning Service Inspection
   A. Column 1 - "Locations" (to include rooms, common areas, etc.)
   B. Column 2 - "Inspected"
   C. Column 3 - "Vacuumed"
   D. Column 4 &5 - "Comments"

7. Exhaust Fan Inspection
   A. Column 1 "Fan Number" (To include identification numbers keyed to map)
   B. Column 2 - "Inspected"
   C. Column 3 - "Lubricated"
   D. Column 4 - "Belts"
   E. Column 5 - "Comments"

8. Fire Extinguisher Inspection
   A. Column 1 "Location"
   B. Column 2 "Condition"
   C. Column 3 "Pressure Guage"
   D. Column 4 "Seal"
   E. Column 5 "Comments"

Boiler Room Maintenance Daily Check

Development _____ **Door Location** _____

NAME																													
DATE: Mo/day																													
Odor of Gas																													
Unusual noise																													
Boiler pressure *between 12-15 PSI*																													
Water leak																													
Gauge glass *1/2 - 2/3 water*																													
Air damper																													
Clean floor																													
Area Lighting																													
Sump pumps																													

0 = Checked OK **X = Checked Requires Attention** — *manager must be notified*

BOILER ROOM MAINTENANCE
MONTHLY INSPECTION

TO: Area Maintenance Supervisor/Manager DATE: _____

FROM: _____ Development: _____
Door: _____ Bldg. _____

1. Temperature at heating system hot water supply? _____

2. Main heating system circulators:
Alternate pumps monthly
#1 On_____ Off_____ PSI _____ Comments _____

#2 On_____ Off_____ PSI _____ Comments _____

3. Level of expansion tank guage glass #1 _____

#2 _____

4. Temperature and pressure of each boiler

	Press	Temp		Press	Temp
Boiler #1	_____	_____	Boiler #5	_____	_____
Boiler #2	_____	_____	Boiler #6	_____	_____
Boiler #3	_____	_____	Boiler #7	_____	_____
Boiler #4	_____	_____	Boiler #8	_____	_____

6. Electronic sequencer test (hold no longer than 1 minute)

Do all boilers operate? Yes _____ No _____

7. Temperature of domestic hot water? _____

8. Domestic hot water circulator? On _____ Off _____

9. Sump pump will eject water? Yes _____ No _____

10. Leaks evident in boiler room area? Yes _____ No _____

11. Boiler room clean, debris free, no vandalism? Yes _____ No _____

12. Odors in boiler room? Yes _____ No _____

13. Unusual noises from any equipment? Yes _____ No _____

14. To be completed every third month:

Grease/Oil all motors and pumps. Completed month of _____

Inspect all circulator couplers. Completed month of _____

Form completed by _____

Please write your general comment on other side of this sheet.

Copy to: Director of Management or Executive Director
Supervisor of Mechanical & Electrical Work

Compactor Daily Service Report

Development _____ **Door Location** _____

Service for the Month of _____

NAME																													
DATE																													
Electrical system																													
Indicator lights																													
Hydraulic oil																													
Chemical																													
Control switches																													
Trash Chute																													
Abnormal noise																													
Oil leakage																													
Clean area																													
Supplies																													

O = Checked OK **X = Checked Requires Attention**

STAFF EVALUATION FORM

NAME _____ **DEPARTMENT** _____ **JOB TITLE** _____

DATE HIRED _____ **PERIOD COVERED BY APPRAISALS** _____ **TO** _____

APPRAISER:

Consider the following five columns as a scale; the extreme right as outstanding, the extreme left as unusually poor. Based on your opinions, placed and "X" in the box under the group of words which best describes each quality of the individual. On the lines below each grouping, make a brief statement showing why certain conclusions are made. Evaluate only the qualities you have observed. Use additional blank sheets for opinion as necessary.

QUALITY					
Freedom from errors and mistakes; accuracy; quality of work in general.	Excessive errors and mistakes; very poor quality ☐	Acceptable by minimum standards. Improvement needed. ☐	No more mistakes than should be expected. Quality definitely acceptable. ☐	Quality above average. Few errors and mistakes. ☐	Highest possible quality. Final job virtually perfect. ☐

Opinion: _____

_____

QUALITY					
The technical work output of the employee relative to other employees.	Extremely low output. Definitely not acceptable. ☐	Acceptable but low output. Below average. ☐	Average output. Definitely acceptable. ☐	Produces more than most. Above average. ☐	Definitely a top producer. ☐

Opinion: _____

_____

COOPERATIVENESS Willingness to work harmoniously with others in getting a job done. Readiness to observe and confirm to the policies of management.	Extremely negative and hard to get along with. ☐	Indifferent. Makes no effort to cooperate. ☐	Cooperative. Gets along well with others. Has a good attitude. ☐	Goes out of his/her way to cooperate and get along. ☐	Extremely cooperative. Stimulates teamwork and good attitude to others. ☐

Opinion: _____

_____

EFFORT The degree to which an employee does his/her best to be a top employee. (Without regard to how effective he/she may be.) Consider conscientiousness and motivation.	Exerts effort only when forced to do so. ☐	Low motivation. Could perform much better than he/she does. ☐	Satisfactory effort. Average motivation level. ☐	Exerts more effort than most. Hard worker. ☐	Intensely motivated. Exerts maximum effort. ☐

Opinion: _____

_____

DEPENDABILITY The extent to which the employee can be depended upon to be available for work and do it properly. The degree to which he/she is reliable, trustworthy, and persistent.	Unusually unreliable. Does not assume responsibility. Gives up easily. ☐	Sometimes unreliable. Avoids responsibility. Satisfied to "get by." ☐	Trustworthy and reliable. Needs average direction. About average in persistence. ☐	More reliable than average. Usually persists in spite of difficulties. ☐	Completely reliable. Highly persistent. Finishes a job at any cost to him/herself. ☐

Opinion: _____

_____

INITIATIVE AND CREATIVENESS Consider ability to plan work and to go ahead with a job without being told every detail, and the ability to make constructive suggestions.	Performs routine only, lacks initiative. ☐	Barely shows initiative; routine worker. ☐	Occasionally shows initiative; sometimes makes suggestions. ☐	Is progressive; has some creative imagination. ☐	Initiative and creativeness results in frequent savings in time and money. ☐

Opinion: _____

_____

TENANT RELATIONS The polite attention an individual gives other people.	Blunt; discourteous; antagonistic. ☐	Sometimes tactless. ☐	Agreeable and pleasant. ☐	Always very polite and willing to help. ☐	Inspiring others in being courteous and very pleasant. ☐

Opinion: _____

_____

JOB KNOWLEDGE Knowledge of the techniques, skills, processes, equipment, procedures, and materials.	Lacks knowledge to perform work properly. ☐	Minimum knowledge for doing a job. ☐	Satisfactory knowledge of job and sufficient knowledge of related jobs. ☐	Well informed about own job and related jobs. ☐	Authoritative knowledge of own work; superior knowledge of related jobs. ☐

Opinion: _____

_____

PERSONAL APPEARANCE Personal impression an individual makes on others. (Consider cleanliness, neatness, grooming and appropriateness of dress on the job.)	Very untidy. ☐	Sometimes untidy and careless about personal appearance. ☐	Generally neat and clean. Satisfactory personal appearance. ☐	Careful about personal appearance. ☐	Unusually well groomed. Very neat. ☐

Opinion: _____

_____

ATTENDANCE Faithfulness in coming to work daily and conforming to work hours.	Often absent without good excuse and/or frequently reports for work late. ☐	Lax in attendance and/or reporting for work on time. ☐	Usually present and on time. ☐	Very prompt; regular in attendance. ☐	Always regular and prompt. ☐

Opinion: _____

_____

JUDGMENT The extent to which the employee makes decisions which are sound. Freedom from impulsiveness and immaturity in thinking. Ability to base actions on fact rather than emotion.	Frequently makes judgments which are unsound. Immature in thinking and judgment. ☐	Sometimes fails to consider facts and makes errors of judgment the average person would avoid. ☐	Generally thinks rationally. Not immature or illogical. Has healthy respect for facts. ☐	Better than average judgment. Very mature and sound in his/her thinking. ☐	Unusual rational powers. Brilliant in analyzing facts and solving problems. No impulsive decisions. ☐

Opinion: _____

_____

CAPACITY AND AMBITION For future growth. Review all of the factors that you have previously considered and evaluate his/her capacity and ambition for future advancement.	Going backward. ☐	Questionable. ☐	Has reached suitable job. ☐	Should be considered for promotion in his/her department. ☐	Should be considered for promotion in the LHA. ☐

Opinion: _____

_____

If this employee is promotable, list specific poitions to which you feel the individual is promotable:

Position Title: _____

List areas of performance needing improvement: _____

_____

_____

Specific action to be taken by supervisior and/or employee to improve weaknesses: By whom: By when:

_____

_____

Appraised by: _____ _____ Concurred by: _____ _____

Appraiser's signature Date *Signature of appraiser's supervisor* Date

Appraisal review with employee: _____ _____

Employee's signature Date

Comments resulting from interview: _____

_____

Monson Housing Authority, 50 Colonial Village, Monson, Massachusetts 01057

Dear

In order that we may evaluate our performance and that of our personnel, we would like you to take a few moments from your busy schedule to assist us in this evaluation.

We would greatly appreciate it if you would complete the following questionaire and return it. For your convenience a collection box will be available at the office, or you may mail the completed form to our office.

We promise to give your answers and responses our most careful attention and maintain them in strict confidence.

	YES	SOME-TIMES	NO
Are you pleased with the general appearance of the grounds, walks, etc., and the manner in which they are maintained?	_____	_____	_____
Is Housing Authority Staff available to you when needed?	_____	_____	_____
Are your requests for service and repairs taken care of in a satisfactory manner?	_____	_____	_____
Are laundry facilities adequately maintained?	_____	_____	_____
Do other residents avoid making undue noise?	_____	_____	_____
Would you recommend these apartments to your friends?	_____	_____	_____
Do you find your apartment meets the expectations you had when you decided to move here?	_____	_____	_____
Did you find your apartment in a satisfactory condition upon moving in?	_____	_____	_____
Do you find social and recreational activities adequate?	_____	_____	_____
Do you have any suggestions to help us improve our operation?	_____	_____	_____

COMMENTS AND SUGGESTIONS: _____

_____

Please feel free to make additional comments on the reverse side, and if you so desire, sign this form.

Thank you,

Monson Housing Authority

_____

NAME & APT. NUMBER (optional)

Springfield Housing Authority

INVENTORY TRACER FORM
ITEM DESCRIPTION PER INVENTORY LIST

❶ _____

❷ Make _____ ❸ Model # _____ ❹ Serial # _____

❺ Purchased by _____ ❻ Project # _____ ❼ SHA# _____

❺ Transfer from _____ ❾ Project # _____ ❿ Site _____

⓫ Transfer to _____ ⓬ Project # _____ ⓭ Site _____

⓮ Date transfered _____

⓯ Date returned _____

⓰ Custodial transfer from _____
Signature

⓱ Custodial Transfer to _____
Signature

⓲ Disposition _____

_____

_____

IPSWICH HOUSING AUTHORITY
ONE AGAWAM VILLAGE
IPSWICH, MA 01938
(508) 356-2860

TRUCK STOCK LIST

ELECTRICAL

NAME OF PERSON ON CALL _____

WEEK ENDING _____

STOCK #	DESCRIPTION	ON HAND	USED
100003	22 WATT CIRCLELINE LAMP	2	
100004	32 WATT CIRCLELINE LAMP	2	
100005	60 WATT ECONO BULB	12	
100006	150 WATT FLOOD LAMP	2	
100011	LG.BURNER STOVE PLUG IN	2	
100012	SM. BURNER STOVE PLUG IN	2	
100015	INFINITE SWITCH FOR 119 STOVE	2	
100016	OVEN THERMOSTAT FOR 119 STOVE	1	
100017	THERMOSTAT KNOB	1	
100018	INFINITE SWITCH KNOB	1	
100021	TERM.BLK.FOR PLUG IN UNITS	2	
100022	INF.SWTCH. LG.BRNR.628 STOVE	1	
100023	OVEN THERMOSTAT 628 STOVE	1	
100024	SELECTOR SWTCH.628 STOVE	1	
100025	SURFACE KNOB FOR 628 STOVE	1	
100026	THERMO KNOB FOR 628 STOVE	1	
100027	SLCTR.SWTCH.KNOB FOR 628 STOVE	1	
100028	250 WATT INFARED LAMP	2	
100029	40 WATT CIRCLELINE LAMP	1	
100030	25 WATT CANDELABRA LAMP	4	
100031	25 WATT EXIT LAMP	4	
100033	40 WATT APPLIANCE BULB	4	
100034	32/40 WATT CIRCLELINE BALLAST	1	
100037	REFER.SHLF.BAR RETAINER	4	
100039	REFER.END CAP HANDLE	4	
100046	GE/HP 8'SURFACE BURNER	1	
100047	GE/HP 6"SURFACE BURNER	1	
100050	SINGLE POLE SWTCH.IVORY	2	
100051	SINGLE POLE SWTCH.BROWN	2	
100052	DUPLEX RECEPTICLE IVORY	2	
100053	DUPLEX RECEPTICLE BROWN	2	
100054	0/60 MIN.TIME SWITCH	1	
100059	LINE VOLTAGE THERMOSTAT	1	

MATERIALS INVENTORY SYSTEM
SUMMARY STOCK STATUS REPORT
3/29/90

FILE NR: 0001 IPSWICH HOUSING AUTHORITY

PART NR	LOC	CLASS	DESCRIPTION	ON ORDER	ON HAND	U/M	AVG COST	TOTAL VALUE	----- CURRENT ----- USAGE	RECEIPTS	LAST ACT DATE
10-0001	001	100	10.6 CF REFERIGERATOR		3	1	$ 295.00	$ 885.00			3/06/90
10-0002	001	100	21 INCH ELECTRIC STOVE		3	1	$ 200.00	$ 600.00			1/24/90
10-0003	001	100	22 WATT 8IN.CIRCLINE LAMP		4	1	$ 1.95	$ 7.80	3		3/19/90
10-0004	001	100	32WATT 12"CIRCLINE LAMP		8	1	$ 2.10	$ 16.80	11		3/21/90
10-0005	001	100	60 WATT ECONO BULB	120	103	1	$ .25	$ 25.75	36		3/28/90
10-0006	001	100	150 WATT FLOOD LAMP	12	5	1	$ 1.82	$ 9.10	2		3/07/90
10-0007	001	100	150 WATT INC. BULB	12	10	1	$ 1.25	$ 12.50			3/28/90
10-0008	001	100	30" ELECTRIC STOVE		1	1	$ 280.00	$ 280.00			1/24/90
10-0009	001	100	BROILER FOR 1196487810		2	1	$ 9.51	$ 19.02			1/24/90
10-0010	001	100	BAKE FOR 1196487810		3	1	$ 9.60	$ 28.80			1/24/90
10-0011	001	100	LG.BURNER FOR 1196487810	4	3	1	$ 12.75	$ 38.25			1/24/90
10-0012	001	100	SML BURNER FOR 1196487810	6	1-	1	$ 10.65	$ 10.65-	2		3/19/90 *
10-0013	001	100	LG.PAN FOR 1196487810			1	$ 1.79				1/23/90 *
10-0014	001	100	SM.PAN FOR 1196487810			1	$ 1.59				1/23/90 *
10-0015	001	100	INF.SWITCH FOR 1196487810		5	1	$ 12.15	$ 60.75			1/24/90
10-0016	001	100	OVEN THERM.FOR 1196487810	2	1-	1	$ 38.35	$ 38.35-	2		3/14/90 *
10-0017	001	100	THERMO KNB FOR 1196487810		6	1	$ 3.06	$ 18.36			1/24/90
10-0018	001	100	UNIT KNB.FOR 1196487810		6	1	$ 3.52	$ 21.12			1/24/90
10-0019	001	100	BROILER FOR 6286207810		6	1	$ 8.25	$ 49.50			1/24/90
10-0020	001	100	BAKE UNIT FOR 6286207810		1	1	$ 7.10	$ 7.10			1/24/90
10-0021	001	100	TERM.BLOCK FOR 6286207810		5	1	$ 2.55	$ 12.75	1		1/24/90
10-0022	001	100	INF.SWT.LG.BNR.6286207810		1	1	$ 14.35	$ 14.35			1/24/90
10-0023	001	100	OVEN THERMO.FOR6286207810			1	$ 67.49				12/14/89 *
10-0024	001	100	SELCT SWT.FOR 6286207810			1	$ 18.99		1		2/02/90 *
10-0025	001	100	SRFC.KNB.FOR 6286207810		6	1	$ 3.52	$ 21.12			1/24/90
10-0026	001	100	THERM KNB.FOR 6286207810		6	1	$ 3.06	$ 18.36			1/24/90
10-0027	001	100	SLCT.KNB.FOR 6286207810		3	1	$ 3.06	$ 9.18			1/24/90
10-0028	001	100	250W IFRARED HEAT LAMP	12	4	1	$ 1.70	$ 6.80	2		3/21/90
10-0029	001	100	40 W 16" CIRCLINE LAMP		8	1	$ 2.57	$ 20.56	3		3/21/90
10-0030	001	100	25W CANDELABRA BULB		25	1	$ .57	$ 14.25			1/24/90
10-0031	001	100	25W TUBE BULB(EXIT)		40	1	$ .95	$ 38.00	2		3/28/90
10-0032	001	100	175W MERCURY LAMP		3	1	$ 11.45	$ 34.35			1/24/90
10-0033	001	100	40W APPLIANCE BULB		17	1	$ .70	$ 11.90	5		3/19/90
10-0034	001	100	BALLAST 32/40		3	1	$ 12.95	$ 38.85			1/24/90
10-0035	001	100	INSERT HANDLE RE		5	1	$ 4.99	$ 24.95			1/24/90
10-0036	001	100	HANDLE DOOR RE		6	1	$ 8.99	$ 53.94			1/24/90
10-0037	001	100	SHELF BAR RETAINER		5	1	$ 5.49	$ 27.45			1/24/90
10-0038	001	100	TRAY RE		2	1	$ 1.99	$ 3.98			1/24/90
10-0039	001	100	END CAP HANDLE RE		27	1	$ 1.29	$ 34.83	1		1/24/90
10-0040	001	100	COLD CONTROL RE			1	$ 18.45				12/14/89 *
10-0041	001	100	30" ELECTRIC STOVE		1	1	$ 280.00	$ 280.00			1/24/90
10-0042	001	100	UNV.LG.DRIP BOWL CHROME		4	6	$ 1.72	$ 6.88	1		3/02/90
10-0043	001	100	UNV.SM.DRIP BOWL CHROME		7	6	$ 1.39	$ 9.73	3		3/02/90
10-0044	001	100	GE/HOTPOINT LG.DRIP PAN		2	6	$ 1.02	$ 2.04	1		1/24/90
10-0045	001	100	GE/HOT POINT SM.DRIP PAN		3	6	$ .80	$ 2.40	3		1/24/90
10-0046	001	100	GE/HOTPOINT 8"ELEMENT		13	1	$ 21.05	$ 273.65			1/24/90
10-0047	001	100	GE/HOTPOINT 6"ELEMENT		1	1	$ 18.35	$ 18.35			1/24/90

Additional Forms Available at EOCD

Air Conditioner Service Report
Annual Heating Plant Inspection and Evaluation Report
Apartment Inspection Report
Budget Forms
Catch Basin Inspection and Service Program
Emergency Answering Service Report
Exhaust Fan Inspection and Service Report
Fire Extinguisher Inspection and Report
Fire Hose Inspection Report
Furniture and Equipment Record Card
Hot Water Heating Service Report
Inspection Form, Article II of State Sanitary Code
Inspection Forms (several varieties of one page-per-unit forms)
Job Descriptions (approved by EOCD and DLI)
Maintenance Skills and Knowledge Examinations for Staff
Maintenance Suggestion and Complaint Form
Outlines of Maintenance Staff Training Programs
Quality Control Inspection Report
Quarterly Report Forms
Refuse Chute Entry Inspection Form
Staff Evaluations (several alternate versions)
Vacancy Log (several alternate versions)
Vacancy Report
Vehicle Inspection Form (several alternante versions)
Vertical Transportation Equipment Inspection Report
Work Order Forms (several alternate versions)

A

ABSORPTION BED

A shallow rectangular excavation filled with coarse aggregates and covered with earth. It contains a piping system that distributes the septic tank effluent so it can be absorbed.

ABSORPTION FIELD

A system of shallow trenches containing coarse aggregates and a distribution pipe through which septic tank effluent seeps or leaches into the soil.

ACCESS PANEL

A panel provided for inspection purposes that has removable fasteners.

ACCESSORY BUILDING

A secondary building, the use of which is incidental to that of the main building.

AGGREGATE

A coarse material, usually sand, stone and gravel, used in combination with other materials to form concrete or asphalt paving; also used in roofing.

AGGREGATE, LIGHT WEIGHT

Aggregate having a dry loose weight between 55 and 70 pounds per cubic foot.

AIR CONDITIONING

The process of treating air to control simultaneously its temperature, humidity, cleanliness, and distribution.

AIR CONDITIONING (CENTRAL)

A system that uses ducts to distribute cooled air to more than one room at a time. Window air conditioners, including those mounted through the walls, are not considered to be central air conditioning systems.

A

AIR RETURN

Air returned from an air-conditioned space. Return can be centrally located, or located in each room.

ALLIGATORING

A coarse checked pattern of cracks, similar to an alligator's skin, usually found in tar/gravel roofs. The pattern may also appear in a new coat of paint applied over the old coating when the old coating can be seen through the cracks in the new coat.

AC

Alternating Current. A current flow that reverses direction periodically according to a specified frequency; normally 60 cycles per second. AC current is found in most domestic and commercial applications.

AMBIENT TEMPERATURE

The temperature of the air surrounding a piece of equipment on all sides.

AMPERAGE OR CURRENT

The number of amperes used in a house or in an electrical circuit. It is a measure of the amount of electricity that flows through a wire. Houses commonly have 30, 60, 100, 150, 200 or more ampere services.

APARTMENT

See Dwelling Unit.

APPRAISAL

An expert judgment or estimate of the quality or value of real estate as of a given date.

A

AREA

Building Area. The total ground area taken on a horizontal plane at the mean grade level of each building and accessory building but not including uncovered entrance platforms, terraces, and steps.

Gross Floor Area. The total floor area of all stories devoted to residential use, including halls, stairways, elevator shafts and exterior walls, or from the center line of walls separating buildings.

Public Area. Area intended for common use by occupants, and when so designated, by the general public.

AREA DRAIN

A receptacle designed to collect surface or storm water from an open area.

AREAWAY

An open subsurface space adjacent to a building used to admit light or air, or as a means of access to a cellar or lower area.

ARTESIAN WELL

A well whose shaft penetrates an impermeable strata deep enough to reach water that will rise by its own hydraulic pressure.

ASBESTOS SHINGLE

A fireproof roof or siding material made of cement and asbestos fiber.

ASH PIT

A pit at the base of a chimney for cleaning out fireplace ashes.

ASPHALT SHINGLES

A heavy felt paper saturated with hot asphalt, and covered with fine rock granules.

A

ATTIC

Accessible space between top ceiling joists and underside of roof. Inaccessible spaces are called structural cavities.

ATTIC ROOM

(Finished Attic.) Attic space which is finished as living accommodations but which does not qualify as a half-story.

ATTIC VENTILATORS

A screened opening provided to ventilate an attic space. They are located in the soffit area as inlet ventilators and in the gable end or along the ridge, as outlet ventilators.

B

BACKFILL

The soil or fill placed against the foundation after it is built.

BALCONY

An exterior platform, enclosed by a railing, projecting from the wall of a building for the private use of tenants or for exterior access to the above grade living units. When a balcony is roofed and enclosed with operating windows, it is considered part of the room it serves.

BALLOON FRAMING

A type of framing system where the studs extend unbroken from the sill to the roof.

BALUSTERS

Vertical members used to support a hand rail between the hand rail and the stair treads or a bottom rail.

BASEBOARD

A piece of wood or other material placed around the periphery of the room at the floor level to cover the floor-wall joint. Often it consists of the base shoe, base board and base molding.

B

BASEMENT

A space of full story height below the first floor, wholly or partly below exterior grade and that is not used primarily for living space.

BEAM

One of the principal horizontal wood or steel members of a building. It can be supported at its ends by a foundation wall or a girder.

BEARING BEAM

Girder. A large piece of wood, steel, or other material used to support a house. It usually runs from foundation wall to foundation wall and is supported with steel lally columns, or wooden poles or columns.

BEARING PARTITION OR WALL

A partition that supports any vertical load in addition to its own weight.

BERM

A mound of earth or pavement used to control the flow of surface water or create a visual barrier. Performs the same function as a street curb and gutter.

BLACK TOP

An asphalt product containing aggregates that is used for driveways, streets and sidewalks.

BLOWER

A fan in a furnace or air-conditioning unit that blows air through the ducts of a house.

BLUESTONE

A type of crushed stone consisting of basaltic rock used in crushed form for driveways or paver form for walkways and patios.

B

BOILER

A device that heats hot water or steam for circulation in heating pipes, radiators, or convectors.

BRICK VENEER

A single course of brick secured against exterior walls of a frame structure. It does not support any weight of the building.

BTU

British Thermal Unit. A measurement of heating and cooling capacity. It is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit.

BUILDING

A structure, wholly or partly enclosed within exterior walls, or within exterior walls and party walls, and a roof, affording shelter to persons and property. Each portion of a building separated from other portions by a party or fire wall shall be considered a separate building.

BUILDING HEIGHT

Vertical distance measured from average grade to the highest level of a flat roof or to the average height of a pitched roof. Where a height limitation is set forth in stories, such height shall include each full story as defined herein. Also see penthouse.

BUILDING LINE OR SETBACK

Distances from the ends and/or sides of the lot beyond which construction may not extend. The building line may be established by building codes, or by zoning ordinances.

BUILDING PAPER

Heavy paper used in walls or roofs to damp-proof.

B

BUILT-UP ROOF

A flat or low-pitched roof composed of three to five layers of asphalt felt laminated with coal tar, pitch, or asphalt. The top can be finished with gravel.

BX CABLE

A metal-clad electrical cable suitable only for indoor use. Plastic coated cable (Romex) have replaced this in many new homes.

C

CAISSON OR PIER FOUNDATIONS

A foundation system where the building structure is supported on a netwrok of columns constructed by boring into the ground and filling the (usually lined) holes with concrete. Borings 2 ft or larger to permit bottom inspection are usually considered caissons while borings less than 2 ft in diameter are considered piers.

CASEMENT WINDOW

A metal or wood window that swings out horizontally or vertically on its hinges, similar to door action.

CAULK

A material used to seal openings or make them watertight.

CERAMIC TILE

A flat fired clay tile that comes in a variety of types that forms a decorative, hard durable surface.

CESSPOOL

A lined and covered excavation in the ground that received the discharge of domestic sewage and is so designed as to retain the organic matter and solids, but permits the liquids to seep through the bottom and sides. It is outlawed by many communities.

C

CELLAR

See Basement.

CHASE

A groove or shaft in a wall provided for accommodation of pipes, ducts, or conduits.

CHIMNEY CAP

Concrete capping around the top of the flue and chimney to protect the masonry from the elements.

CINDER BLOCK

A foundation block made of cement and cinders or slag.

CIRCUIT BREAKER

An electrical circuit protection device which serves the same function as a fuse.

CISTERN

A tank to catch and store rainwater; often found in older homes and usually disconnected.

CLAPBOARD

A long board used as siding.

CLEAN OUT PLUG

A large cap in the sewer line that allows access for cleaning out the sewer line.

C

CODE

Building Code. Commonwealth of Massachusetts rules and regulations pertaining to the construction, reconstruction, alteration, and repair of any building or structure.

Housing Code. Local regulations designed to ensure that all residential buildings or structures are maintained in standard condition.

Zoning Code. Regulations designed to promote the health and safety of the population by dividing the city or town into districts and regulating the use and construction of buildings and premises therein.

COLIFORM COUNT

A test to determine the safety of drinking water. Well water should be so tested periodically.

COLLAR BEAM

A horizontal beam fastened to rafters below the ridge pole to add rigidity and tie the rafters together.

COLUMN

A wood, steel, or masonry vertical post used to support a floor joist or girder.

COMMUNITY SYSTEM

A central utility system such as water or sewage, owned and operated by a private corporation or a property owners association, the rates and service of which are not controlled by a governmental authority.

COMPRESSOR

A pump that forces refrigerant through an air conditioning or heat pump system. In residential split systems it is outside and contains the condenser and fan.

C

CONCRETE

Cellular Concrete. Low density concrete containing a large volume of air and weighing not more than 55 pounds per cubic foot.

Plain Concrete. Concrete without reinforcement or with only minimum reinforcement required to meet shrinkage or temperature stresses.

Reinforced Concrete. Concrete in which steel reinforcement is embedded in such a manner that the concrete and steel act together in resisting forces.

CONCRETE BLOCK

A foundation block made of cement and water together with aggregate.

CONDENSATE

In steam heating it is water condensed from steam as it cools. In air conditioning or humidifiers, it is water that drips off the cooling coils.

CONDUIT, ELECTRICAL

A pipe, usually metal, in which wire is installed.

CONSTRUCTION CLASSIFICATIONS

A classification of buildings into types of construction which is based upon the fire properties of wall, floors, roofs, ceilings and other elements.

Type 1, Fire-resistive Construction. That type of construction in which the walls, columns, floors, roof, ceiling and other structural members are noncombustible with sufficient fire resistance to withstand the effects of a fire and prevent its spread from one story to another.

Type 2, Noncombustible Construction. That type of construction in which the walls, columns, floors, roof, ceiling and other structural members are noncombustible but which does not qualify as Type 1, fire-resistive construction. Type 2 construction is further classified as Type 2a (1 hr protected) and Type 2b, which does not require protection for certain members.

C

Type 3, Exterior Protected Construction. That type of construction in which the exterior walls are of noncombustible construction having a fire resistance rating as specified and which are structurally stable under fire conditions and in which the interior structural members and roof are of protected combustible construction, or of unprotected heavy timber construction in public areas only. Type 3 construction is divided into two subtypes as follows:

Type 3a. Exterior protected construction in which the interior extras, columns, beams and bearing walls are noncombustible in combination with the protected floor system roof construction and non-loadbearing partitions of combustible construction.

Type 3b. Exterior protected construction in which the interior structural members are of protected combustible materials, or of heavy timber unprotected construction.

Type 4, Protected Wood Frame Construction. That type of construction in which the exterior walls, partitions, floors, roof and other structural members are wholly or partly of wood or other combustible materials.

CONSTRUCTION, DRY-WALL

A type of construction in which the interior wall finish is applied in a dry condition, generally in the form of sheet materials or wood paneling.

CONTRACTOR

A contractor is one who contracts to erect buildings or portions of them. He/she may do structural work, heating, electrical, plumbing, air conditioning, or driveways.

CONTROL DEVICE

Devices or switches used by the homeowner in the normal use of equipment; for example, a wall thermostat to control the furnace or a wall switch to turn on an attic fan.

CONTROL JOINT

A joint either formed or sawed into concrete or masonry surfaces to accommodate movement caused by shrinkage, thermal, or other forces.

C

CONVECTOR RADIATOR

A heat distribution system consisting of pipes with many fins attached at short intervals. The hot water or steam blows through the pipes, heating the fins which in turn heat the surrounding air.

CONVENIENCE OUTLET

A plug-in receptacle housed in a protective box with plug-in positions for attachment of portable fixtures or minor appliances.

CORRIDOR

A passageway or hallway that provides a common way of travel to an exit. A dead-end corridor is one that provides only one exit.

CORROSION-RESISTANT

Sheet metal, nails or hardware of aluminum alloys, brass, bronze, copper, galvanized steel, lead, stainless steels, terne plate, or zinc-copper alloys. Nails that are coated with paint, cement or similar materials are not considered corrosion-resistant.

COST ESTIMATE

A rough determination of the cost to construct or repair an item or items.

COUNTERFLASHING

A flashing usually used on chimneys at the roofline to cover shingle flashing and to prevent moisture entry.

COURT

Inner Court. An open outdoor space enclosed on all sides by exterior walls of a building or by exterior walls and property lines on which walls are allowable.

Outer Court. An open outdoor space enclosed on at least two sides by exterior walls of a building or by exterior walls and property lines on which walls are allowable, with one side open to a street, driveway, alley, or yard.

C

CRAWL SPACE

A shallow, unfinished space beneath the first floor of a building which has no basement. It is also a shallow space in the attic, immediately under the roof.

CRICKET

A small drainage-diverting roof structure of single or double slope placed at the junction of larger surfaces such as above a chimney.

CRIPPLES

Cut-off framing members above and below windows.

CURING COMPOUNDS

Preparations which are applied to concrete surfaces to form membranes that reduce evaporation of water from concrete.

D

DAMP COURSE

A course or layer of impervious material which prevents capillary entrance of moisture from the ground or a lower course. Needed in very moist climates to prevent decay.

DAMPPROOFING

A treatment of a foundation surface or structure which retards the passage of moisture.

DECAY

Disintegration of wood or other substance through the action of fungi. Sometimes called dry rot.

DEGREE DAY

A unit based on temperature difference and time, used in estimating fuel consumption and specifying nominal heating loads of a building in winter. For any one day, when the mean temperature is less than 65 F, there exist as many degree days as there are Fahrenheit degrees difference in temperature between the mean temperature for the day and 65 F.

D

DEHUMIDIFICATION

The removal of water vapor from air by chemical or physical methods (air conditioner or dehumidifier).

DEWPOINT

Temperature at which a vapor begins to deposit as a liquid.

DIRECT EXPANSION COOLING (DX)

A method for cooling spaces which relies on the absorption of heat by another medium rather than the blowing of air over a cold surface.

DOMESTIC SEWAGE

The waterborne wastes resulting from ordinary living in a house.

DOUBLE GLAZING

An insulating window pane formed of two thicknesses of glass with a sealed air space between them.

DRAINAGE SYSTEM

Includes all the piping in a house that conveys sewage, rain water, or other liquid wastes to a point of disposal.

DRIP CAP

A molding placed on the exterior top side of a door or window frame to cause water to drip beyond the outside of the frame.

DRYWELL

A covered pit with perforated sides and filled with coarse aggregate through which drainage may seep or be absorbed into the surrounding soil.

D

DWELLING UNIT

A space designed or used as living quarters for one household. Typically, a dwelling unit contains cooking facilities, living and sleeping quarters, and a bath. Such a unit can be closed off from other dwelling units.

E

EASEMENT

A vested or acquired right to use land other than as a tenant, for a specific purpose, such right being held by someone other than the owner who holds title to the land. For example, the right of a sewer line or utility wires to cross the property.

EASY ACCESS

Gaining access for inspection purposes into areas or openings that were designed and installed for a service person to use.

EFFLORESCENCE

A deposit of soluble salts, usually white in color, appearing upon the exposed surface of masonry. It usually indicates dampness on foundation walls.

EFFLUENT

A waste material that flows out of a septic tank or sewage treatment plant.

ESCUTCHEON

A protective or ornamental plate or flange; such as around a keyhole.

EXISTING FILL

Typically applicable to a tract of land which has been extensively reformed by fill, grading or other earthwork prior to identification of an EOCD interest.

EXIT

That portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required to provide a protected way of travel to the exit discharge.

Exit Access. That portion of a means of egress which leads to an entrance to an exit.
Exit Discharge. That portion of a means of egress between the termination of an exit and public way.

F

FASCIA OR FACIA

A flat board used sometimes by itself, but usually in combination with moldings, often located at the outer face of the cornice or behind gutters.

FILTER

A device to remove solid material from air or liquid.

FIRE DOOR

A door, including its frame, so constructed and assembled in place to prevent or retard passage of flame or hot gases.

FIRE DOOR, SELF-CLOSING

A fire door which, when activated by a fire or smoke detector system, a fusible link or other device, will automatically close.

FIRE RESISTANCE

That property of construction assemblies which, under fire conditions, prevents or retards the passage of excessive heat, hot gases or flames.

FIRE RESISTANCE RATINGS

Time in hours or fractional parts thereof that a material, construction or assembly will withstand fire exposure, as determined in a fire test acceptable to HUD.

FIRE RESISTIVE

That quality of materials and assemblies to resist fire and its spread.

FIRE RETARDANT WOOD

Wood so treated by a recognized impregnation process so as to reduce its combustibility or surface flame spread.

F

FIRE SEPARATION

A construction of specified fire resistance separating parts of a building horizontally or vertically.

FIRESTOPPING

A barrier within concealed spaces which is effective against spread of flames or hot gases.

FLASHING

Sheet metal or other impervious material used in roof and wall construction to protect a building from seepage of water.

FLITCH PLATE

A steel plate used on wooden girders to increase their span between columns.

FLOATING FOUNDATION

Special foundations with few or no footings used where the land is swampy or the soil unstable.

FLOOR JOISTS

Wooden or metal beams arranged in a parallel manner to each other resting on outer foundation walls and interior beams or girders to support the floor above.

FLUE

An enclosed metal or ceramic pipe or chimney that is used to exhaust smoke, gases, or air.

FLUE PIPE

The pipe connecting the boiler or furnace to the chimney. Also known as a smoke pipe.

F

FLUSHOMETER VALVE

A device which discharges a predetermined quantity of water to fixtures for flushing purposes and is closed by direct water pressure.

FOOTING

A concrete support under a foundation, chimney or column that usually rests on solid ground and is wider than the structure being supported.

FOUNDATION

Construction, below or partly below grade, which provides support for exterior walls or other structural parts of the building. It's use is synonymous with basement wall when the house has a basement. In some areas footing and foundation are used interchangeably.

FRENCH DRAIN

An underground drainage system at the footings usually with open joint pipe or drain tile used to carry off excess water.

FROSTLINE

The depth of frost penetration in soil. This depth varies in different parts of the country. Footings should be placed below this depth to prevent movement.

FUSE

A cartridge or plug used to protect an electrical circuit by breaking when overloaded so that other parts of the circuit do not burn out.

G

GABLE

The triangular part of a wall under the inverted "v" of the roof line.

GAMBREL ROOF

A roof with two pitches, designed to provide more space on upper floors. The roof is steeper on its lower slope and flatter toward the ridge.

G

GAS VENT

A chimney designed and approved for use of gas burning appliances only.

GLAZING

The method of installing and securing glass or plastic in prepared openings of doors or windows.

GLAZING MATERIAL

Bedding compound, mastic and clips used in installing or securing glazing panels in prepared openings such as doors, windows and enclosures.

GLAZING PANEL

Glass or glass-like (plastic) material, which is transparent or translucent, and is installed in prepared openings such as doors, windows and enclosures.

GRADE

The ground level around a building.

GRADE BEAM

A reinforced concrete beam, spanning between piers and in contact with the earth used for supporting wall or column construction.

GRADIENT

The slope, or rate of increase or decrease in elevation, of a surface, road, or pipe, expressed either in inches of rise or fall per horizontal linear foot or in a percent.

GROUNDING

A process of connecting a wire from an appliance or circuit box to a water pipe or ground rod, so that electrical charges do not pass into people touching the equipment.

G

GROUNDWATER

The surface water that saturates a zone of earth or soil.

GROUNDWATER DRAIN

A drain designed and constructed to convey groundwater away from a saturated zone of earth.

GROUT

Mortar made of such consistency by adding water that it will flow into the joints and cavities of masonry work and fill them solid.

GUTTER

An open channel made of metal, plastic or wood installed along the eve of a roof at the facia board, to carry water running off the roof to designated discharge points.

H

HABITABLE ROOM

A room designed and used for living, sleeping, eating or cooking, or combination thereof. Bathrooms, toilet compartments, closets, halls, storage rooms, laundry and utility spaces, basement recreation rooms and similar areas are not considered habitable rooms.

HANDICAPPED

A person with physical impairments that substantially impede his/her ability to live independently. Often dwelling units can be modified in such a way that the handicapped person's ability to live independently is improved.

HEADER

A framing member that goes across the top of an opening and carries the load above.

H

HEAT EXCHANGER

A device by which heat is exchanged from one heat-carrying medium to another without contact between two media.

HEAT PUMP

A refrigerating system that transfers heat into a space or substance.

HEAT SOURCE

Radiator, convector unit, radiant panel, heat pipe, ductwork, grille, register, or similar devices from which heat is emitted into a room.

HEATING, CENTRAL

A heating system in which a single generator of heat, such as a boiler or furnace, provides heat for the entire apartment or building through a network of metal pipes or ducts.

HIP ROOF

A roof with no gables. It usually has inclined planes on all four sides of the building.

HOISTWAY

An enclosed shaft in which one or more elevators is designed to travel.

HOLLOW-CORE DOOR

A reinforced hollow door made of two pieces of thin wood sandwiching a solid, outer wood frame.

HUMIDIFIER

A device designed to increase the humidity within a room or a house by means of the discharge of water vapor. They may consist of individual room-size units or larger units attached to the heating plant to condition the entire house.

H

HUMIDISTAT

An electrical control that automatically senses and controls humidity in a living space and operates a humidifier.

HYDRONICS

The science of heating and cooling with liquids.

HYDROSTATIC HEAD

Water pressure on a surface due to the height of the water above a specific point.

I

I-BEAM

A steel bearing beam or girder, which is shaped in section in the form of an I.

INDIVIDUAL SEWAGE DISPOSAL SYSTEM

A system for disposal of domestic sewage by means of septic tank, cesspool, or mechanical treatment, designed for use apart from a public sewer.

IMPACT INSULATION CLASS (IIC)

A single-figure rating which provides an estimate of the impact sound insulating performance of a floor-ceiling assembly.

IMPERVIOUS SOILS

Dense compact fine grained soils that restrict the infiltration of water.

INSTANTANEOUS HOT WATER HEATER

A coil in a boiler used to heat domestic hot water.

I

INSULATION, THERMAL

Any material high in resistance to heat transmission that, when placed in the walls, ceiling, or floors of a structure, will reduce that rate of heat flow.

J

JALOUSIES

Windows and doors with movable, horizontal glass slats which can be slanted at various angles to admit ventilation and keep out rain.

JAMB

The upright wood piece forming the side of a door or a window opening.

JOIST

One of a series of parallel beams, used to support floor and ceiling loads, and supported in turn by larger beams, girders, or bearing walls.

JUNCTION BOX

A plastic or metal box in which electrical connections are placed.

K

KILOWATT-HOUR

The number of watts of power used divided by 1000 times the length of time used divided by 60 — standard unit used by utility companies for billing the power supplies to a customer over a period of time.

KNOB AND TUBE WIRING

An early method of electric wiring still found in some areas today. The wire is attached to the house frame with porcelain knob insulators and porcelain tubes.

KNEE WALL

Vertical framing in an attic used to support a low sloping roof.

L

LALLY COLUMN

A steel tube sometimes filled with concrete, used to support girders or other floor beams.

LATHING

Thin strips of wood or metal used as a base for plaster.

LEAD PAN

A large sheet of lead placed under tile shower floor to keep it waterproof.

LEADER

An exterior drainage pipe for conveying storm water from roof or gutter drains. Also called downspout.

LINTEL

A horizontal structural member that supports the load over an opening such as a door or window.

LIVING UNIT

See dwelling unit.

LOAD BEARING WALLS

A wall or partition which assists in bearing the load of floors and roof.

L

LOADS

Concentrated. A load concentrated upon a specified small area of a floor, roof, wall or other member.

Dead. The weight of all permanent construction in a building.

Design. Total load which a structure or member is designed to sustain safely without exceeding specified deformation.

Live. The weight of all moving and variable loads that may be placed on or in a building such as snow, wind, occupancy, etc.

Uniform. An average load applied uniformly over a floor, roof or wall or along a beam or girder.

LOT LINE

A legally defined line dividing one lot from another.

M

MASONRY

A construction of units of such materials as clay, shale, concrete, glassblock, gypsum, or stone, set in mortar.

Solid Masonry. Units in which the voids do not exceed 25 percent of the cross-sectional area at any plane parallel to the bearing surface.

Hollow Masonry. Units in which the voids exceed 25 percent of the cross-sectional area.

MASTIC

A thick, pasty sealant or adhesive.

MEANS OF EGRESS

A continuous and unobstructed way of exit travel from any point in a dwelling to the exterior. There should be two means of egress in a house.

MIXING VALVE

A by-pass valve on an instantaneous hot water heater used to lower the temperature of hot water to a safe level.

M

MOISTURE BARRIER

Treated paper or metal that retards or bars water vapor, used to keep moisture from passing into walls or floors.

MOISTURE PROTECTION

Safe-guarding living units against the penetration or passage of water, water vapor, and dampness.

MULTIPLE DWELLING

Building or structure containing more than two dwelling units.

N

NONCOMBUSTIBLE

A building construction material of which no part will ignite and burn when subjected to fire.

O

OHM

Unit of measurement of electrical resistance.

OVERHANG

The part of a roof that extends beyond the exterior wall.

P

PACKAGED CHIMNEY

A complete factory-built chimney, usually made of metal and insulation. Used primarily with prefabricated fireplace units.

PAINT

A liquid mixture with pigment that is applied to walls, ceilings, etc. for decoration and/or protection of the underlying surface.

P

PARAPET

The part of the wall of a house that rises above the roof line.

PARGING

A rough coat of mortar applied over a masonry wall as protection or finish; may also serve as a base for an asphaltic waterproofing compound below grade.

PARQUET FLOOR

A floor made of small blocks or squares of hardwood flooring; laid together with tongue and groove edges and secured to a base or subfloor with mastic or staples. (cf. Boston Garden)

PARTICLEBOARD

A composition board consisting of distinct particles of wood bonded together with a synthetic resin or other binder.

PARTITION

A wall that subdivides spaces within any story of a building.

PENTHOUSE

A structure located on the roof of the main building for purposes of living accommodations or mechanical equipment. When the area of the penthouse exceeds 20 percent of the area of the roof and is to be occupied by persons, the penthouse shall be considered as another story.

PERVIOUS SOILS

Loose, porous, coarse grained soils that allow the infiltration of water.

PILE FOUNDATIONS

A foundation system consisting of steel, timber or concrete members driven vertically into the ground. Piles transfer loads through soft layers of soil to ends bearing on hard soil or rock or by friction to suitable soils.

P

PLASTER BOARD

A rigid insulating board used in drywall construction. Made of plastering material, usually gypsum, covered on both sides by heavy paper.

PLAT

A map, plan or chart of a city, town, section or subdivision, indicating the location and boundaries of individual properties.

PLENUM

A large duct or air chamber in which the hot air from the furnace builds up pressure which forces it out through the ducts to the register. The air-conditioning evaporator is placed here.

PLOT

A parcel of land consisting of one or more lots or portions thereof, which is described by reference to a recorded plat or by metes and bounds.

PLUMBING FIXTURE

A receptacle or device which is either permanently or temporarily connected to the water distribution system and discharges used water, liquid-borne waste materials, or sewage directly to the drainage system.

PLUMBING SYSTEM

This includes the water supply and distribution pipes; plumbing fixtures and traps; soil, waste, and vent pipes; and building drains within a building or structure to a point not exceeding five feet beyond the foundation walls of the building.

POST-AND-BEAM CONSTRUCTION

Wall construction in which beams are supported by heavy posts rather than many smaller studs.

P

POTABLE WATER

Water free from impurities present in amounts sufficient to cause disease and conforming in its bacteriological and chemical quality to the requirements of the Public Health Drinking Water Standards or the regulations of the municipal public health authority. Well water should be periodically tested.

PRIVATE SEWER

A sewer, serving two or more buildings, privately owned, and not directly controlled by public authority.

PUMP

A device that raises, transfers, or compresses fluids by suction or pressure or both.

R

RADIANT HEAT

Coils of electricity, hot water or steam pipes embedded in floors, ceilings, or walls to heat rooms.

RADIATOR

An exposed fixture usually made out of cast iron that transfers heat from the heating system by means of convection and radiation.

RAFTER

One of a series of structural members of a roof designed to support roof loads. The rafters of a flat roof are sometimes called roof joists.

RECOVERY RATE

A term used for hot-water heaters to tell how fast the temperature of a tank of water will recover after heavy usage; e.g., a 50 gallon tank will return 38 gallons/hour to fully heated temperature.

REGISTER

A fixture installed at the end of an air duct that directs and controls the flow of air into the room.

R

REPAIR

To restore by replacing a part or putting together what is torn or broken.

RESILIENT FLOOR COVERING

Vinyl or asphalt tile, or linoleum, or other soft covering.

RETAINING WALL

Any wall subjected to lateral pressure other than wind pressure, or a wall built to support a bank of earth.

RIDGE BOARD

A board placed at the ridge of the roof into which the upper ends of the rafters are fastened.

RIDGE VENT

An elongated metal cap extending the entire ridge length to allow for attic ventilation.

ROLL ROOFING

Roofing material, composed of fiber and saturated with asphalt that is generally furnished in weights of 45 to 90 pounds per roll.

ROOF BOARDS

Boards or sheathing that are nailed to the rafters to which are fastened the roof covering or shingles, tiles or other material.

ROOFING CEMENT

An asphalt material used for patching or waterproofing roofs and flashings.

S

SAFETY OR RELIEF VALVE

A hydraulic or electrical device whose purpose is to block all gas flow to a system (i.e., hot water heater) in the event of pilot outage.

SASH

The movable part of a window in which panes of glass are set.

SASH CORD

The cord or chain that attaches the counter-balance weights to each double-hung window sash.

SCHEDULE

A procedural plan that indicates the time and sequence of each operation.

SEEPAGE PIT

A covered pit with open-jointed lining through which septic tank effluent may seep or leach into surrounding porous soil.

SEPTIC TANK

A covered steel or concrete watertight sewage settling tank intended to retain the solids in the sewage long enough for the decomposition of settled solids by bacterial action to take place. The remaining effluent (liquid) is discharged to a seepage pit or absorption bed or field.

SERVICE PANEL

A metal box containing fuses or circuit breakers.

SEWAGE EJECTORS

A device for lifting sewage by entraining it in a high velocity jet of steam, air or water. Pumps are also used if the public sewer is above the house discharge line.

S

SHAKE

A hand or machine split rough-textured wood shingle.

SHEATHING

A wood or fibrous subsiding material nailed to exterior studs or rafters that forms the base for the finish operations of shingles or siding.

SHEATHING PAPER

A building material, generally paper or felt, used in wall and roof construction as a protection against the passage of air and sometimes moisture.

SHEET ROCK

A trade name for gypsum wallboard.

SHORT CIRCUIT

A break in wiring causing a large flow of current. The short circuit if properly protected will blow a fuse or cause a circuit breaker to operate. When not protected, it can cause a fire.

SHOWER PAN

A metal, concrete, tile, or fiber glass base or pan for catching water under a shower stall. See also Lead Pan.

SHUT DOWN

A piece of equipment or system is considered shut down when it cannot be activated or operated by the device or control which normally operates it.

SIDING

The finish covering of the outside wall of a frame building, whether made of horizontal weatherboards, vertical boards with battens, shingles, or other material.

S

SILL PLATE

The lowest member of the house framing which rests on top of the foundation wall.

SIPHON ACTION TOILET

A toilet in which the flushing action is assisted by a jet of water.

SLAB-ON-GRADE

A concrete slab made by pouring concrete directly on the prepared ground surface and over the top of the foundation and footings.

SLEEPER

A strip of wood laid over concrete floor to which the finished wood floor is nailed or glued.

SLIDING DOORS

Single or double-pane doors that slide horizontally on tracks.

SMOKE CHAMBER

A large void over the fireplace damper that prevents the smoke from backing up into the room.

SNOW GUARD

Small metal catches on a roof, usually placed over a door, located above the eaves to keep snow from sliding in sudden avalanches to the ground.

SOFFIT

The visible underside or overhang of structural members such as staircases, beams, a roof overhang or eave. Also, the cosmetic covering on ends and bottoms of construction details or small spaces.

S

SOIL PERCOLATION TEST

A test to determine if the soil is suitably permeable for a private sewage system.

SQUARE

One hundred square feet of roof or siding area, usually 10 ft. by 10 ft.

STARTER COURSE

The first row of roof shingles or shakes.

STORM DRAINAGE SYSTEM

Facilities, structures, appurtenances, pipes, channels, and natural water course improvements to collect, convey and dispose of surface runoff to an outlet.

STORM SASH OR STORM WINDOW

An extra window usually placed on the outside or inside of an existing one as protection against cold weather and drafts.

STRINGER

The long horizontal timber connecting upright posts in a frame. (Stair stringer.)

STUCCO

An exterior siding finish usually consisting of cement, lime, and sand that is trowelled on over wood or masonry siding.

STUD

One of a series of slender wood or metal vertical structural members placed as supporting elements in walls and partitions. Studs are spaced either 16 inches or 24 inches apart.

S

SUBFLOOR

Boards or plywood laid on joists over which a carpet or finish floor is to be laid.

SUMP PUMP

An automatic electric pump installed in a sump hole that activates as the water in the hole reaches an excessive level and pumps it out to a drainage area.

SUPPLY DUCT

A metal or plastic duct that supplies conditioned air from a furnace, a central air conditioner, or a heat-pump system to rooms in a house.

SURFACE WATER

Water from rain or seeps that collects at ground level and if not properly channelled away will enter a basement area.

SURVEY

A map made by a licensed surveyor showing the results of measuring the land with its elevations, improvements, boundaries, and its relationship to surrounding tracts of land.

SWALE

A shallow open channel for collection and disposal of excess surface water formed by intersecting slope bases; a type of gutter.

T

TEMPERATURE, DEWPOINT

The temperature at which water vapor begins to condense.

TERMITE SHIELD

A protective shield, usually of metal, placed so as to interrupt the path of termites from the ground into the house.

T

THERMAL PROTECTION

Safeguarding of living units against more heat loss or gain than necessary for winter and summer comfort.

THERMOSTAT

An automatic heating-cooling control; some units are controlled by clocks to set-back the temperature during certain times as a fuel-saving measure.

THRESHOLD

A strip of wood or metal with beveled edges used over the finish floor and the sill of exterior doors.

TOILET SEAL

A rubber or wax gasket on top of the waste pipe on which the toilet is placed and which assures water does not leak onto bathroom floors.

TON OF REFRIGERATION

A useful refrigerating measure equal to 12,000 Btu per hour. The average three-bedroom house can be cooled by a three-ton air-conditioning unit.

TRAP

An "S" bend in a waste pipe below a fixture that remains filled with water thereby sealing sewer gases from backing up into the house.

TREAD/RISER

A tread is the horizontal part of a step.

A riser is the upright member between two stair treads.

TRIM

A material used to finish off an edge or opening of a wall (i.e., as around a window frame), often used for ornamentation or decoration purposes.

T

TRUSS

A triangular arrangement of framing members forming a rigid framework usually preassembled and lifted intact into place between load-bearing walls.

TRUSSED RAFTER

A truss where the chord members are also serving as rafters and ceiling joists and are subject to bending stress in addition to direct stress.

U

UNDERPINNINGS

Concrete supports added under footings or foundations to increase the load bearing capacity of a foundation.

UNDERWRITERS' LABORATORY

An independent consumer product testing laboratory.

V

VALVE

Any of numerous mechanical devices by which the flow of liquid, gas, or loose material in bulk may be started, stopped, or regulated by a movable part that opens, shuts, or partially obstructs one or more ports or passageways.

VAPOR BARRIER

A material or paint supplied to a wall, floor or ceiling to prevent the passage of moisture.

VENT PIPE

A vertical stack used to vent one or more plumbing fixtures and provide free movement of air and sewer gases.

VENTILATION

Mechanical. Supply and removal of air by power-driven devices.

Natural. Ventilation by openings to outside air through windows, doors or other openings.

V

VERTICAL OPENING

Openings through floors, such as for stairways, elevators, ventilating shafts, etc., which if unprotected, may serve as channels for the spread of fire or smoke.

VOLT

An electrical potential, usually at the 110 or 220 level and single phase in residential use.

W

WALLS

Bearing Wall. A wall which supports any vertical load in addition to its own weight.

Cavity Wall. A masonry or concrete wall constructed to provide an air space within the wall for purposes of insulation.

Common Wall. A wall separating two living units free of common utilities except where an agreement is established which allows necessary repairs, replacement and services of such utilities.

Curtain Wall. A nonbearing, exterior wall between piers or columns.

Faced Wall. A wall in which the masonry facing and the backing are so bonded as to exert a common reaction under load.

Firewall. A wall with qualities of fire resistance and structural stability which subdivides a building into fire areas, and which resists the spread of fire.

Foundation Wall. A wall, below or partly below grade, providing support for the exterior or other structural parts of a building.

Lot Line Wall. A wall adjoining and parallel to the lot line used primarily by the party upon whose lot the wall is located. Lot line walls may share common foundations.

Masonry Wall. A bearing or non-bearing wall of hollow or solid masonry units.

Masonry Bonded Hollow Wall. A cavity wall bonded together with solid masonry units in lieu of metal ties.

Non-bearing Wall. A wall which supports no vertical load other than its own weight.

Parapet Wall. That part of any wall entirely above the roof.

W

Party Wall. A wall used jointly by two parties under easement, erected upon a line separating two parcels of land, each of which is a separate real estate entity.

Veneered Wall. A wall with a masonry face which is attached to but not so bonded to the body of the wall as to exert a common reaction under load.

WARM AIR SYSTEM

A heating system in which air heated inside a furnace and distributed throughout the house either by the force of gravity or by blowers to ducts.

WASTE PIPE

A pipe which conveys only waste to a sewer.

WATER SUPPLY SYSTEM

The water-service pipe, the water-distributing pipes, and the necessary connecting pipes, fittings, control valves, and all appurtenances in or adjacent to the building or premises.

WATER VAPOR TRANSMISSION

The passage of moisture into or through a material or construction, in a gaseous form, due to the difference in vapor pressure at the two faces. The unit of measurement is perms.

WATERPROOFING

A treatment of a foundation surface or structure, which prevents the passage of water.

WATT HOUR

Power over a period of one hour.

WAY

A street, driveway or other thoroughfare or easement permanently established for passage of persons or vehicles.

W

WEEPHOLE

A small opening in a retaining wall, brick veneer, window or storm window to allow drainage of excess water.

WELL, DRIVEN

A well constructed by driving a pipe in the ground. The drive pipe is usually fitted with a well point and screen.

WELL WATER QUALITY

Well water quality should be tested for bacteria and mineral content by the Health Department or by testing laboratories with specialized equipment.

WELL WATER VOLUME

Well water volume is rated in "gallons per minute" and is measured over a 5-hour to 6-hour period. The test requires disconnecting the water line at the well head and the use of specialized equipment.

WINDOW WELL

A metal or masonry box used to create a cavity cellar window below grade.

References

The following is a list of published reference material related to the maintenance of public housing. For addresses of publishing organizations, see section E, page 10-10, if not otherwise specified.

GENERAL PROPERTY MANAGEMENT AND MAINTENANCE PUBLICATIONS

1. *Handbook of Real Estate Terms,* by Dennis S. Tosh, Jr. (NAHRO Publication No. N905)

   This valuable reference book contains 2400 definitions of acronyms, abbreviations, and buzzwords used extensively in the real estate industry. Also included are the major real estate organizations' mailing addresses, telephone numbers, and activities; the real estate commissions in the U.S. and Canada; and standardized forms.

2. *No Cost/Low-Cost Energy Conservation Measures for Multi-Family Housing*, by the Institute of Real Estate Management (NAHRO Publication No. 0366)

   An indispensable publication describing 13 energy conservation measures that can be implemented with little or no material and labor costs. Easy instructions will help ensure significant energy savings.

3. *Handbook of Building Maintenance Management*, by Mel A. Shear (NAHRO Publication No. 0360)

   This authoritative, well organized text explains how to correct maintenance problems and also how to fine tune preventive maintenance programs. It is packed with detailed illustrations, tables, and charts.

4. *Building Construction Cost Data, 1990* (Catalog No. 60010); *Means Repair & Remodeling Cost Data, 1990* (Catalog No. 60040); *Means Square Foot Costs, 1990* (Catalog No. 60050); *Means Electrical Cost Data, 1990* (Catalog No. 60030); *Means Mechanical Cost Data, 1990* (Catalog No. 60020); *Means Plumbing Cost Data, 1990* (Catalog No. 60210); *Means Site Work Cost Data, 1990* (Catalog No. 60070); *Means Residential Cost Data, 1990* (Catalog No. 60170); *Means Interior Cost Data, 1990* (Catalog No. 60090); by R.S. Means Company, Inc.

   A series of reference publications which are used as estimating (unit cost) guides by contractors, design professionals, and others in the construction industry.

5. *Increasing HUD's Effectiveness through Improved Management* (1/10/84), GAO (order from GAO - (202) 275-6241).

6. *Monitoring and Setting Standards for Public Housing Performance* (4/84), Citizens Housing and Planning Association, 7 Marshall St., Boston, MA 02108.

An examination of existing practices (small sample of authorities) in monitoring and setting standards in five management areas, including maintenance, rent collection, occupancy, energy, and personnel evaluation.

7. *Financing and Procurement Strategies for North Carolina Public Housing* (8/88), by OKM for North Carolina Alternative Energy. OKM. 148 State St., Boston, MA.

8. *Cambridge Housing Authority Manager's Handbook* (2/86). CHA, 270 Green St., Cambridge, MA 02139.

A handbook designed to aid managers in their day-to-day tasks, to standardize management practices, and to make clear the reporting requirements managers have. This handbook consists of two volumes — a volume of text and an accompanying volume of sample forms and documents.

9. *Case Studies of Effective Management Practices within Public Housing Agencies, Volume 2 - Maintenance and Custodial* (11/85), Office of Policy Development and Research, HUD.

Brief overview of the maintenance and custodial function, with three case studies (Cumberland Housing Authority, Housing Authority of the County of Lawrence, and Huntsville Housing Authority) of effective management practices.

10. *Public Housing Management Performance, A Comprehensive Guidebook for Achieving Quality Public Housing* (1/85), The Venture for Quality Public Housing C/O Dorothy Fulghum, Norfolk Redevelopment and Housing Authority, P.O. Box 968, Norfolk, VA 23501.

11. *Project Venture Maintenance Training,* Norfolk Redevelopment and Housing Authority. (For address, see item 10.)

A maintenance training manual, with proposed curriculum designed to provide 120 hours of classroom instruction, 60 hours of on-the-job training, and 20 hours of attitude/behavior/motivational training.

12. *Preventive Maintenance Manual,* Housing Authority of Pittsburgh (order from - Frank H. Mazza, (412) 456-5012).

13. *Practical Apartment Management,* by Edward N. Kelley (IREM Publication No. 772).

A how-to, hands-on approach (80% revised and expanded third edition) that covers all the basics of managing multi-family housing.

14. *The Successful On-Site Manager,* by Carol Stone King, Gary Langendoen, Lyn H. Hummel (IREM Publication No. 811).

A standard reference text for not only site managers, but property managers and owners as well, with topics of interest, including management planning, and maintenance management and procedures.

15. *How to Write an Operations Manual: A Guide for Apartment Management* (IREM Publication No. 805).

This unique guide offers a complete outline for putting together an operations manual.

16. *Innovations in Residential Management* (IREM Publication No. 836).

Illustrates new techniques for improving residential leasing and operations, using case studies and hands-on descriptions.

17. *The Venture for Quality Public Housing's Landscape Manual for Administrators,* by Boston Urban Gardeners. Order from Real Estate Enterprises, Inc., 1 Fanueil Hall Marketplace, Boston, MA 02109.

An administrators guide to improving the public housing landscape, with topics of interest, including design considerations, overview of "the process", and management of maintenance workers.

18. *The Venture for Quality Public Housing's Landscape Manual for On-Site Personnel,* by Boston Urban Gardeners. Order from Real Estate Enterprises, Inc., 1 Fanueil Hall Marketplace, Boston, MA 02109.

A step-by-step illustrated maintenance manual for improving the public housing landscape for use by maintenance workers.

19. *Providence Housing Authority Maintenance Department Policies and Procedures Manual,* by Providence Housing Authority, Providence, RI.

This manual outlines procedures which provide for the effective performance of PHA maintenance staff in areas of operation, including emergency services, vacant unit preparation, painting, snow removal, etc.

20. *Preventative Maintenance Resource Guide*, by Duncan C. Speel, Director of Development and Modernization, Woonsocket Housing Authority, Woonsocket, RI.

A collection of articles, procedures, and forms from various sources that speak to the benefits of an effective property maintenance system.

OTHER RELATED EOCD PUBLICATIONS

1. *Accounting Manual for State-Aided Housing Programs.*

   A manual of all accounting procedures and reporting requirements to be used by local Housing Authorities for administration of each of the following programs: Chapter 200, Family Housing; Chapter 667, Elderly Housing; Chapter 689, Special Needs Housing; Chapter 705, Family Scattered Site Housing; and Chapter 707, Leased Housing.

2. *Manual of State-Aided Housing Operations*, Volume I, Rules and Regulations, May 1988.

   This manual is intended to serve as a technical tool to assist new and existing public housing directors and staff in the understanding and implementation of day-to-day operations and procedures.

3. *Chapter 689 Special Needs Housing Management Handbook*, November 15, 1988.

   A practical "how-to" guide that details the procedures for guiding local housing authorities in the actual daily management of their special needs housing programs.

4. *Local Housing Authority Budget Guidelines and Management Incentive Program* (5/31/88 and 8/30/89).

   Updated guidelines that describe the budget process under the Management Incentive Program.

5. *Code of Conduct for Public Employees*, 7/89 Memorandum from Joseph R. Baresi, Inspector General.

   Brief memorandum describing the code of conduct for public employees, which affirms the importance of maintaining the highest standards of ethical conduct in public service.

6. *Chapter 30B (the Uniform Procurement Act) Training Sessions*, 4/90 Memorandum (with attached Legal Requirements) from the Office of Inspector General.

   This manual has been designed as a reference and guide for use by officials of governmental bodies who are required to oversee the purchasing and procurement process.

OTHER RELATED HUD PUBLICATIONS

1. *Performance Funding System (PFS) Handbook*, 7475.13 REV., issued February 26, 1990.

   A revised handbook with procedures and requirements relating to the calculation and request for operating subsidy under the provisions of the Performance Funding System.

2. *The Public Housing Occupancy Handbook*, 7465.1 REV-2, Chapters 1-6, issued August 5, 1987.

   This handbook provides HUD policy and advice on occupancy matters related to the Lower Income Public Housing Program. Chapters 1-6 cover admission.

3. *The Public Housing Occupancy Audit Handbook*, 7465.2 REV-1, issued June 9, 1988.

   This handbook provides instructions and technical guidance to HUD office staff in performing Occupancy Audits of Public Housing Agencies.

4. *Low-Rent Housing Administration of Program Handbook*, 7401.1, reprinted 8/83.

   One of a series of HUD handbooks related to the basics of the public housing program with specific information on procurement and contracting, insurance and bonding, employee benefit programs, and equal opportunity requirements.

5. *Low-Rent Housing Accounting Guide*, HM G 7511.1, dated 2/72.

   The purpose of this guide is to assist Local Authorities in carrying out the contractual requirements to maintain complete and accurate books of account and records.

6. *Low-Rent Housing Accounting Handbook*, HM 7510.1, dated 6/81.

   A handbook describing the books of account and other fiscal records to be maintained; the accounting principles and standards relating to the maintenance of the required books of account and records; and the financial and operating statements to be submitted to HUD.

7. *Changes to the Public and Indian Housing Comprehensive Improvement Assistance Program Handbook*, 7485.1, REV-4, dated December 20, 1989.

   A handbook providing instructions, guidelines and processing procedures for use by HUD staff and other participants involved in the comprehensive improvement of public housing projects.

8. *Field Office Monitoring of Public Housing Agencies*, 7460.7 REV-1, issued February 9, 1990.

9. *Housing Quality Standards.*

GENERAL MAINTENANCE REFERENCES

Many of these works can be obtained from, or ordered by, commercial bookstores.

1. Basic Engineering

- *Simplified Engineering for Architects and Builders*, by Harry Parker.

2. Print Reading

- *Architectural Graphic Standards*, by J.N. Boaz.
- *Blueprint Reading - Interpretation of Architectural Working Drawings*, by Wm. J. Horning.

3. Wood

- *Standard Grading Rules for Northeastern Lumber*, by American Lumber Standards Committee, P.O. Box 1554 Rockville, MD 20850.
- *Wood Handbook*, by U.S. Department of Agriculture, Washington, D.C.
- *Audel's Carpenters and Builders Guide* (Vol. 1 thru 4), by Theo. Audel and Co., Publishers.

4. Brick and Masonry

- *Technical Notes # 20, 23, 23A, and 30*, by Brick Institute of America.
- *Technical Notes on Brick Construction*, by Brick Institute of America.
- *American Standard Building Code Requirements for Masonry*, by U.S. Department of Commerce, Washington, D.C.
- *Audel's Masons and Builders Guide* (Vol. 1 thru 4), by Theo. Audel and Co., Publishers.

5. Concrete and Reinforcement

- *Concrete Information*, by Portland Cement Association.
- *Design and Control of Concrete Mixtures*, by Portland Cement Association.
- *Concrete Primer*, by American Concrete Institute, P.O. Box 4754, Redford Station, Detroit, MI 48219.
- *Manual of Concrete Inspection*, by American Concrete Institute.
- *Reinforced Concrete - A Manual of Standard*, by Concrete Reinforcing Steel Institute, 228 N. LaSalle St., Chicago, IL 60601.

6. Scheduling

- *Means Scheduling Manual*, by R.S. Means Co. Inc.

7. Residential Construction

- *Plasterers Manual*, by Portland Cement Association.
- *Portland Cement Plaster (Stucco) Manual*, by Portland Cement Association.
- *Gypsum Construction Handbook*, by U.S. Gypsum, 101 S. Wacker Dr., Chicago, IL 60606
- *Using Gypsum Board for Walls and Ceilings*, by Gypsum Association, 1603 Orrington Ave, Suite 1210, Evanston, IL 60210.
- *Illustrated Encyclopedic Dictionary of Building and Construction Terms*, by Hugh Brooks - Prentice Hall, Inc.
- *Tools and How to Use Them*, by A. Jackson & D. Day.
- *Standard Grading Rules for Northeastern Lumber*, by NELMA, 4 Fundy Rd., Falmouth, ME 04105
- *Roofing Systems - Materials and Applications*, by John Watson - Reston Publishing Company, Inc.
- *Built-Up Roofs*, by Johns-Manville, Greenwood Plaza, Denver, CO 80217.
- *Large Appliance Repair Manual*, by Popular Mechanics. Hearst Books, 224 W. 57th St., NY, NY 10019

CONTACT ORGANIZATIONS

Institute of Real Estate Management (IREM)
430 N. Michigan Avenue
Chicago, IL 60611
312-661-1930 (Bonni Cruz)

Portland Cement Association
5420 Old Orchard Road
Skokie, IL 60076

U.S. Gypsum
101 S.Wacher Drive
Chicago, IL 60606

R.S. Means Co. Inc.
P.O. Box 800
Kingston, MA 02364
1-800-448-8182

Brick Institute of America
1750 Old Meadow Road
McLean, VA 22101

NAHRO
1320 18th Street N.W.
Washington, D.C. 20030
202-429-2960 (Ben Thorp)

HUD
7th & D. Streets S.E.
Washington, D.C. 20410

National Multihousing Group
Washington, D.C.
202-659-3381

ExPress Publishing
El Cerrito, CA
415-236-5496

Building Owners/Managers Association
Washington, D.C.
202-289-7000

Northwest Center for Professional Education
Bellevue, WA
206-746-4173

Intermec Corporation
4405 S. Russell Road
P.O. Box 360602
Lynnwood, Washington 98046 - 9702
(Hand-held computers)

M-Track Software
5813 "B" Street
Little Rock, Arkansas 72205
(501) 664-0065
(Software for hand-held computers)

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