

## CHAPTER 17. MAINTENANCE MANAGEMENT

### I. INTRODUCTION

#### A. Scope.

This chapter outlines responsibilities, establishes policy, and sets standards for the maintenance of Navy family housing. It is a complete rewrite and should be reviewed in its entirety.

#### B. Policy.

1. Family housing will be maintained to provide safe and comfortable accommodations while economically preserving the plant investments for the duration of the requirement for the facilities.

2. Field activities will establish a maintenance and repair program supported by the development and implementation of a short - (4 years) and a long-range (10 years) maintenance plan.

3. In accordance with Public Law 106-52, Family Housing, Navy (FH,N) funds are the exclusive source of funding for maintenance and repair of facilities and property on the Family Housing Property Account.

4. Field activity housing authorities are responsible for evaluating methods of maintenance to ensure faster, better, safer, more cost effective response.

#### C. References.

1. Public Law 106-52, Section 128, 106<sup>th</sup> Congress, Aug 17, 1999
2. Federal Acquisition Regulation (FAR)
3. Office of Management and Budget Circular A-76, Performance of Commercial Activities
4. DoD Directive 4165.63-M, DoD Housing Management
5. DoD Directive 2000.12, DoD Combating Terrorism Program
6. Department of Defense Federal Acquisition Regulation Supplement (DFARS)
7. DoD Financial Management Regulations (FMR), Volume 2B, Chapter 6 and Volume 6, Chapter 9
8. Navy Acquisition Procedures Supplement (NAPS)
9. Navy Facilities Assets Data Base (NFADB)
10. NAVFAC P-68, Contracting Manual
11. NAVFAC Guide Performance Work Statement (GPWS) for Maintenance of Military Family Housing, User's Guide, Quality Assurance Guide, Section C, and Section J
12. NAVFAC MO-327, Facility Support Contract Quality Management Manual
13. NAVFACINST 11101.85H, "Navy Family Housing Project Standards"

14. NAVSUP Policy Letter 4200 Ser 21C/7031 SA 97-16, Mandatory Use of the Government wide Commercial Purchase Card for Micro-purchases

D. SUMMARY.

This chapter is organized into four topical areas:

1. Responsibilities. Responsibilities of the Commander, Naval Facilities Engineering Command (COMNAVFACENGCOM), Engineering Field Divisions (EFDs), major claimants and field activities are outlined.

2. Maintenance Planning and Executing. This section provides guidelines and criteria for the planning, programming, budgeting, and execution phases of the family housing maintenance program. It includes short- and long-range maintenance plans, inspections, accounting and cost collection systems, methods of initiating and accomplishing work, and approval and verification of performed work.

3. Standards of Maintenance. Family housing maintenance standards, required to ensure the full life expectancy of the facilities, are provided in this section. These standards incorporate and emulate sound business practices found in private sector housing. The section also notes hazardous materials which must be remediated or "maintained in place" as required by code and statute.

4. Facilities Support Contracts. This section provides the regulations which govern maintenance or repair services, when provided by contract. Required clauses concerning service calls are provided and the quality assurance (QA) program is discussed.

II. RESPONSIBILITIES

A. COMMANDER, NAVAL FACILITIES ENGINEERING COMMAND (COMNAVFACENGCOM)

COMNAVFACENGCOM provides resources and establishes policies, standards, and procedures for the maintenance of Navy family housing units and other facilities on the Family Housing Property Account.

B. ENGINEERING FIELD DIVISIONS (EFDs)

EFDs program for and oversee the family housing maintenance program for field activities within their purview. EFDs will:

1. Provide funds, guidance, clarify instructions, and assist field activities on-site.

2. Review and evaluate field activity plans, recommend priorities to the major claimant, and advise field activities regarding project submissions.

C. MAJOR CLAIMANTS.

Major claimants, through the regional commanders, establish priorities and approve budget and Program Objective Memorandum (POM) programming requests for the activities within their purview. They further ensure that maintenance performed meets established safety and habitability standards.

D. FIELD ACTIVITIES.

Field activities budget for and maintain all facilities on the Family Housing Property Account. In fulfilling this responsibility, field activities will:

1. Plan and execute the family housing maintenance and repair program.
2. Develop short- and long-range maintenance plans, which form the basis of budget and POM requests.
3. Develop and implement a cost effective self-help program as detailed in Chapter 19.
4. Authorize all work for family housing maintenance. Special care must be taken to ensure that Congressional thresholds are not exceeded.
5. Accumulate, in a timely manner, all costs of maintenance and repair for individual housing units. Each flag and general officer quarters (F&GOQ).
  - a. The FY 2000 Military Construction Appropriation Act, Public Law 106-52, mandated that not more than \$25,000 per unit may be spent annually for the maintenance and repair of any F&GOQ without 30 days prior notification of the appropriate committees of Congress.
  - b. Public Law 106-52 mandates that, for all non-F&GOQ, maintenance projects over \$20,000 per unit annually require prior Congressional approval.
6. Ensure that flag and general officers are aware of all maintenance work (other than emergency work) prior to performance, on units they occupy. Work should be in accordance with the approved 6-Year Maintenance Plan for the quarters. Changes to the plan or to the congressionally approved scope of work must be requested in writing, by the resident or the housing authority, as the originator and forwarded for approval by higher authority. The OPNAVINST 11101.19 series provides detailed information.
7. Ensure work performed is complete and of acceptable quality before authorizing payment. See Section III C-4.
8. Participate in the development and administration of facilities supports contracts. Section C, specifications/scope of work, and Section J, historical data, are the responsibility of the housing authority.

### III. MAINTENANCE PLANNING AND EXECUTION

#### A. DEFINITIONS

1. Maintenance. The recurring, periodic, or scheduled work required to preserve real property facilities and furnishings so they may be effectively utilized for their designated purpose. Maintenance includes work undertaken to prevent damage to facilities and furnishings. Maintenance is normal change of occupancy type work and other work usually scheduled annually, seasonally and as needed (i.e., service calls).

2. Preventive maintenance (PM). The correction of incipient failures before they develop into major defects requiring costly correction. PM includes oiling of furnace fan bearings, replacement of filters, painting, and so forth. As long as the cost of PM does not exceed the estimated cost of repair/replacement. Often times we pay more for a PM service than the cost of the equipment.

3. Deferred maintenance. Validated requirements for maintenance and repair which are essential for bringing property to a state of proper condition, but which have not been accomplished due to lack of resources.

4. Repair. The restoration of a real property facility or system to such condition that it may be effectively utilized for its designated purpose. Components of a facility may be repaired by replacement and that such replacement can be up to current standards or codes.

5. Improvements/Alterations/Additions. A physical increase to a facility or the changing of other physical characteristics of an existing facility which increases the value of the property account and which is to enhance rather than repair a facility or system. This also includes the addition of something that was not previously present. The work is of an investment nature and, when it exceeds the minor construction threshold, is completed with military construction dollars. Chapter 20 provides details.

6. Project. Used as a means of correcting deficiencies or improving facilities. Work becomes a project when the scope or cost of the work exceeds the approval limit of the housing authority accountable for the maintenance of the Family Housing Property Account. Projects can be standalone repair or standalone improvement/revitalization projects, which correct all repair deficiencies as well as adding or altering features to provide contemporary amenities in a total remodel of a housing unit. The type of project as well as the cost of the work determines the type of funding which must be used. Chapter 20 provides details concerning projects. Project work results in a complete and useable facility and is rarely approved in less than 10-year intervals.

7. Funding. Public Law 106-52, Section 128 of the FY 2000 Military Construction Appropriations Act, mandates that Family Housing appropriations are the exclusive source of funds for maintenance and repair of all family housing units, including F&GOQ and temporarily diverted family housing units as unaccompanied housing.

a. "Maintenance and repair" shall apply to any work performed on family housing structures or family housing areas, which includes security and antiterrorism measures in accordance with the requirement standards for family housing, but excludes communication equipment required by the occupant to perform his or her mission.

b. All maintenance work performed on owned facilities identified on the Family Housing Property Account is properly charged to the Family Housing, Navy (FH,N) BP-20 maintenance account with the following exceptions:

1) All costs for the maintenance of furnishings are properly charged to the BP-14, furnishings account. Built-in dishwasher, garbage disposal and window-type air conditioner are considered part of the unit and all costs associated with these

furnishings should be charged to the BP20, maintenance account.

2) Maintenance work performed on leased facility is charged to the BP-15, leasing account.

8. Program Objectives Memorandum (POM)/Baseline Assessment Memorandum (BAM): The Secretary of the Navy's recommendation to the Secretary of Defense for the detailed application of DON resources. The POM/BAM, which covers multiple years, forms the basis of the annual budget for each appropriation. The budget expresses in appropriation format the financial requirements to support the Navy and Marine Corps programs which were developed during the POM/BAM planning and programming processes. The budget requests the application of resources for specific purposes within the funding levels provided. In Navy family housing, the six-year POM/BAM is updated every other year in the year when a biennial budget is not submitted.

#### B. MAINTENANCE PLANNING.

Each field activity shall develop a 10-year maintenance plan, encompassing short- and long- range projections, adapted to local circumstances and organizational structure. The short-range plan forms the basis of the biennial budget request and the long-range projection coincides with the POM submittal. This 10-year plan should optimize available resources by identifying maintenance deficiencies, formulating a schedule of accomplishment, determining methods of performance, and developing funding requirements.

1. Maintenance requirements are identified by three fundamental means: management observations and projections, specific formal inspections, and resident observations.

a. Management observations and projections are developed from several sources, such as visual assessment of facilities; analyses of age and life expectancy of facilities and furnishings; facility history records; emergency/service (E/S) records; manufacturers' recommendations; local family housing reports. Appendix 1, Maintenance/Life Cycle Summary, provides a sample of a valuable planning tool.

b. Inspections include, but are not limited to, comprehensive neighborhood inspections; occupancy inspections; technical inspections; engineering or management studies and programs; and other inspections performed on a random basis.

(1) Comprehensive inspections of all facilities on the Family Housing Property Account provide a basis for formulation of repair projects, short- and long-range maintenance plans, and the annual operations and maintenance budget.

(2) Inspections may be performed by facilities service or Architectural Engineering (A&E) Services contracts or by field activity and EFD personnel. Appendix 2 provides a sample inspection checklist.

(3) Inspection reports should be reviewed to purge (a) all currently funded maintenance items, (b) all improvements, and (c) all approved or budgeted but unaccomplished maintenance work. The remaining items make up the deficiency listing from which the maintenance backlog report is created and submitted to the EFD.

c. Resident observations are an important source of identification of maintenance requirements and can be transmitted to management in many ways, e.g., personal contacts, Emergency Service (E/S) calls, community association meetings, or comments to the housing authority.

2. The short-range maintenance plan substantiates the field activity maintenance budget and reflects priorities and maintenance schedules. All deficiencies which should be accomplished within the budget cycle are incorporated in the short-range plan. The short-range maintenance plan depicts the maintenance required and identifies resources,

methods, and means of accomplishing the work. Figure 17-1 is an example of a short-range maintenance plan spanning 4 years. Data identified for budget year + 2 will not be a part of the budget submission and serves as link between the two plans.

3. The long-range maintenance plan coincides with the Program Objective Memorandum (POM) and reflects a 10-year planning period by extending the short-range plan 6 years. The plan identifies major items required during the time frame, such as replacement of roofs, exterior painting, replacement of ranges or refrigerators, or resurfacing of streets. Projected work is programmed for a completion year based on anticipated urgency. Less definitive than the short-range plan, the identification of requirements will include estimated costs and methods of accomplishment, when known. This document will form the basis of the POM. As the years originally included in the long-range plan become a part of the short-range plan, the identified items will become increasingly detailed. The Project History Chart, Figure 17-2, is an example of one method used to condense facility history records into a single document for use in developing a long-range plan.

4. Maintenance work, other than normal change of occupancy-type work and other work usually scheduled annually or seasonally and as needed (service calls), should be performed as a repair project when it

a) becomes of a significant quantity or a prevalent condition throughout a given housing site. Example: replacing one or two roofs in a housing area is considered maintenance work; mass replacement of roofs in the same area would be a repair project,

OR b) requires studies, design or significant hazardous material abatement services and/or minor construction funding, BP-22, from the Engineering Field Division.

5. The collection of work identified above as entirely repair in nature becomes a standalone repair project funded with annual BP-22 money. During project development, the scope of planned work must be closely examined to ensure it does not include improvements, which are funded from a different source. In addition, per unit repairs that will exceed \$20K annually require prior Congressional approval. Chapter 20, Projects, provides details.

## NEIGHBORHOOD HISTORY

Housing Neighborhood - Bluebird Heights

200 Units - Category C - Built in 1965

Work Description	Year	Remarks	Year	Remarks	Year	Remarks
Roof replacement	1979	114 enlisted units	1982	86 officer units	1984	project HR-3-81
Exterior painting	1980	all units	1985	all units	1990	all units
Refinish wood floors	1987	56 units at COM see attached occupancy list	1988	123 units - see attached list (21 remaining)	1989	15 units - see list (6 remaining)
Replace floor tile	1985	114 enlisted kitchens				
Furnace	1984	1 unit - 6476 Franconia	1985	overhaul 114 enlisted	1986	overhaul 85 officer
Install vinyl siding	1995	all units in lieu of painting				
Modernize kitchens (Install DW, disposals & countertops)	1985	64 enlisted units 23 officer units	1987	50 enlisted units 35 officer units	1989	28 officer units
Modernize baths	1985	87 (3-br) units	1987	85 (4-br) units	1989	28 (3-br) units
Add concrete driveways, patios, construct carports & storage sheds	1979	7 (3-br) units	1980	70 (4-br) units	1981	70 (3-br) units
Reseal (slurry) asphalt Roads	1991	enlisted area				
Repave (asphalt) roads	1996	officer area				
Replace/repair sidewalks	1998	all areas Project HR-2-97				

FIGURE 17-2 Project History Chart

d. Maintenance Funds. POM submissions identify long-term maintenance requirements. As POM projections become budget plans, funds for maintenance work are obtained by:

(1) Annual Budget Submission. The maintenance portion of the budget request reflects the necessary funding and includes unfunded maintenance from prior years and any requirements identified since the previous budget submission. Funds are provided for the maintenance program by confirmation of the annual planning figure (APF) and receipt of appropriate funding documents.

(2) Project Submissions. Funds for the preservation and upkeep of family housing may also be obtained through major repair projects. See chapter 20 for submission details.

### C. MAINTENANCE EXECUTION.

A successfully executed maintenance plan encompasses cost collection and work control systems to include authorization, performance, acceptance of work, and a means of accounting for funds obligated and resources expended. Regardless of the means of accomplishing work, the following are the components of the maintenance process.

1. Cost Accumulation System. An effective cost accounting system provides consistent identification, accumulation and reporting of family housing maintenance costs. The accounts shall be used to support budget request exhibits and to provide expenditure records that show the true costs of the operation and maintenance of family housing. The job order number is the means within the cost collection system by which expenditures are accumulated for cost analysis and charged to the proper cost account. The job order numbering structure must distinguish family housing job orders from all others used at a field activity and must be indexed to the master accounting classification code. Details for the establishment and use of job orders and the cost account structure are found in the DoD Financial Management Regulations, Volume 6, Chapter 9.

2. Obligation of Funds. Funds are obligated when an order is placed, accepted by a vendor, a contract awarded, a service is received, or similar transactions are entered into during an accounting period requiring future payment of money in an agreed amount. The field activity and the regional comptroller are responsible for ensuring that funds obligated do not exceed the approved Annual Planning Figure (APF) and the funding threshold per unit per fiscal year.

3. Project Orders. A "project order" is a specific, definite and certain order for work placed with a separately managed DoD establishment, usually a Public Works Center, which serves to obligate funds in the same manner as orders or contracts placed with commercial enterprises. Great care must be taken to ensure that all regulations concerning project orders are followed and that they are not issued solely to extend the life of an annual appropriation.

4. Authorization and Verification of Work. The housing authority will authorize all work prior to performance whether accomplished by station forces, through a purchase card or by contract. Verification of work or quality assurance is a joint responsibility of the resident, the housing

authority, the station force work leader, and the contracting officer, if applicable. The Contracting Officer will ensure that the work is satisfactorily performed prior to verification for payment for all contract requirements. Additionally, a special attention should be paid to the expiration dates of contract warranties.

5. Work Input and Execution. Maintenance work, whether performed by contractor, using a purchase card, or by station forces, must be screened and authorized prior to execution. Initial screening of work input is generally done by the service call analyst or clerk, who acts as the reception point for incoming customer work requirements. Screening work determines the process and procedure for maintenance forces. It is imperative that the service call analysts be knowledgeable of warranties, work in progress, historic service work, items to be completed by self-help and resident responsibilities. Work that is screened and authorized is then entered into a maintenance-tracking database for execution. Work which exceeds service call scope or which is questionable will be referred to more senior personnel for decision on the best method to perform the work.

6. Service Calls. 16 man-hours or less of effort plus material costs has been the traditional definition of a service call. 16 hours may not, however, be the best definition in all circumstances. For example, in Commercial Activity studies done under OMB Circular A-76, dollar amounts, with no man-hour limitations, are often used to define service call categories. In every circumstance available historical information should be analyzed to ensure that the labor hour and material limits set are reasonable.

a. Emergency/Service (E/S) chits are used to authorize both emergency maintenance and service work requiring XX man-hours or a liability of \$XX or less to perform. The housing authority shall review all completed service call work requests at least on a monthly basis for repetitive items or work indicating a problem requiring a more permanent solution. Service calls are generally classified into two categories, emergency and routine. In many cases, family housing adds an urgent category. Service calls are used to initiate work as follows:

(1) Emergency work requires immediate action to eliminate hazards to personnel or equipment, prevent loss or damage to government property, or restore essential services. Man-hour restrictions and material costs have no bearing on the definition of emergency work; the use of the E/S chit is the means used to initiate the work. However, when more than XX man-hours (the local service call limitation) are required to complete the job, all charges should be transferred to a minor or a specific job.

(2) A routine service call is other than emergency work, initiated by the service call into the work system, and is restricted to XX man-hours of effort plus material costs. Service work initiated by the E/S chit requiring more than XX man-hours to complete should be accomplished as a minor or specific job and removed from the E/S system.

(3) Traditionally, largely because a home rather than another type of facility is being maintained, family housing classifies some work as urgent. The response time for urgent calls is between that of an emergency and a routine call. Generally, calls will be classified as urgent when the

work involves failure of ranges, refrigerators, water heaters, heating, air conditioning, and other failures in services which do not immediately endanger residents or property, but would soon inconvenience, and/or affect the health or well being of, residents. Additional examples of urgent service calls are clogged toilets and tubs; broken windows during cold weather, etc.

b. Work requests are used to initiate work in three ways: the recurring job order, minor work job order, or specific job order.

(1) Recurring job orders provide for work or service during a predetermined period, usually a fiscal year. There are no man-hour or dollar limits to this type of job order. Grass cutting and window cleaning are examples of this type of work.

(2) Minor work job orders are designed for work requiring a minimum of xx man-hours but not exceeding xx man-hours. (Traditionally, 17 man-hours not to exceed 80) There are no limits to the types of work that can be authorized by a minor work job order. Requests do not require the technical detail necessary for a specific job order, thus enabling the work to be expedited through the system.

(3) Specific job/work orders provide a means to accomplish a unique job or service and must contain explicit statements of work and a cost estimate to summarize all related costs that will be incurred. There are no limitations to man-hours or types of work that can be performed by a specific work authorization, as long as it does not exceed the local funding threshold and approval authority.

c. Change of Occupancy Maintenance, variously known as COM, COO, or COOHM, is work to be accomplished between residents. This work should be determined by the housing authority immediately following the pre-termination inspection so the work can be scheduled to start the day the quarters become vacant. Major repairs affecting habitability of the unit should, if possible, be scheduled to occur at this time. The traditional goal for the number of days allowed to accomplish basic identified work is 3 working days. Additional work, such as floor refinishing, and overseas quarters cleaning will require additional days to be added to the maintenance period. The days allowed for change of occupancy maintenance must allow for all necessary work to be accomplished yet minimize down time for utilization requirements. Whether work is done by contract or in house, the goal is to provide the incoming resident with a well maintained, comfortable home.

d. Repair projects are developed when unique or major maintenance or repair efforts are required. Work performance is authorized when higher authority approves the project. Details and guidance for the development and submission of repair projects are contained in Chapter 20. Two situations that warrant consideration of a repair project to accomplish the necessary major maintenance work occur when:

(1) The particular maintenance work requirement affects all or most of the neighborhood housing units or the magnitude of the work exceeds housing approval authority as listed in Chapter 20, Table 20-3. It is often more advantageous to the government and to the residents to accomplish work by project rather than by routine maintenance because of economies of scale and to minimize resident disruption.

(2) The deferred maintenance has accrued to a degree of cost and scope which makes it more feasible to accomplish as a project.

e. Purchase Cards are used for micro-purchases of commercial items. The single purchase limit for micro-purchases is up to \$2500 for commercial supplies and services or \$2000 for construction. Although the card cannot be used for purchases in excess of \$2500, it can be used as a method of payment for requirements up to \$100,000 in conjunction with a contracting document. The contracting office must be consulted for requirements that exceed \$2500.

(1) General information, including "How to Purchase Construction" is available at <http://www.n11.navsup.navy.mil/com.cfm>. Local purchase card guidance and restrictions shall be followed.

(2) Commercial vendors provided with a description of the work to be done will often provide a free fixed priced estimate. If a free estimate cannot be found, the estimate charge must be on a fixed price basis and represents a separate and distinct purchase from the actual construction purchase itself. In other words, the purchase of the estimate does not count against the single construction purchase limitation of \$2,000.

(3) Maintenance service contracts should contain a clause notifying the contractor that purchase cards may be used to accomplish work by other means at the discretion of the government.

### Maintenance Service Calls

The following illustrates the flow of a service call as initiated, tracked and resolved with the Housing Office.

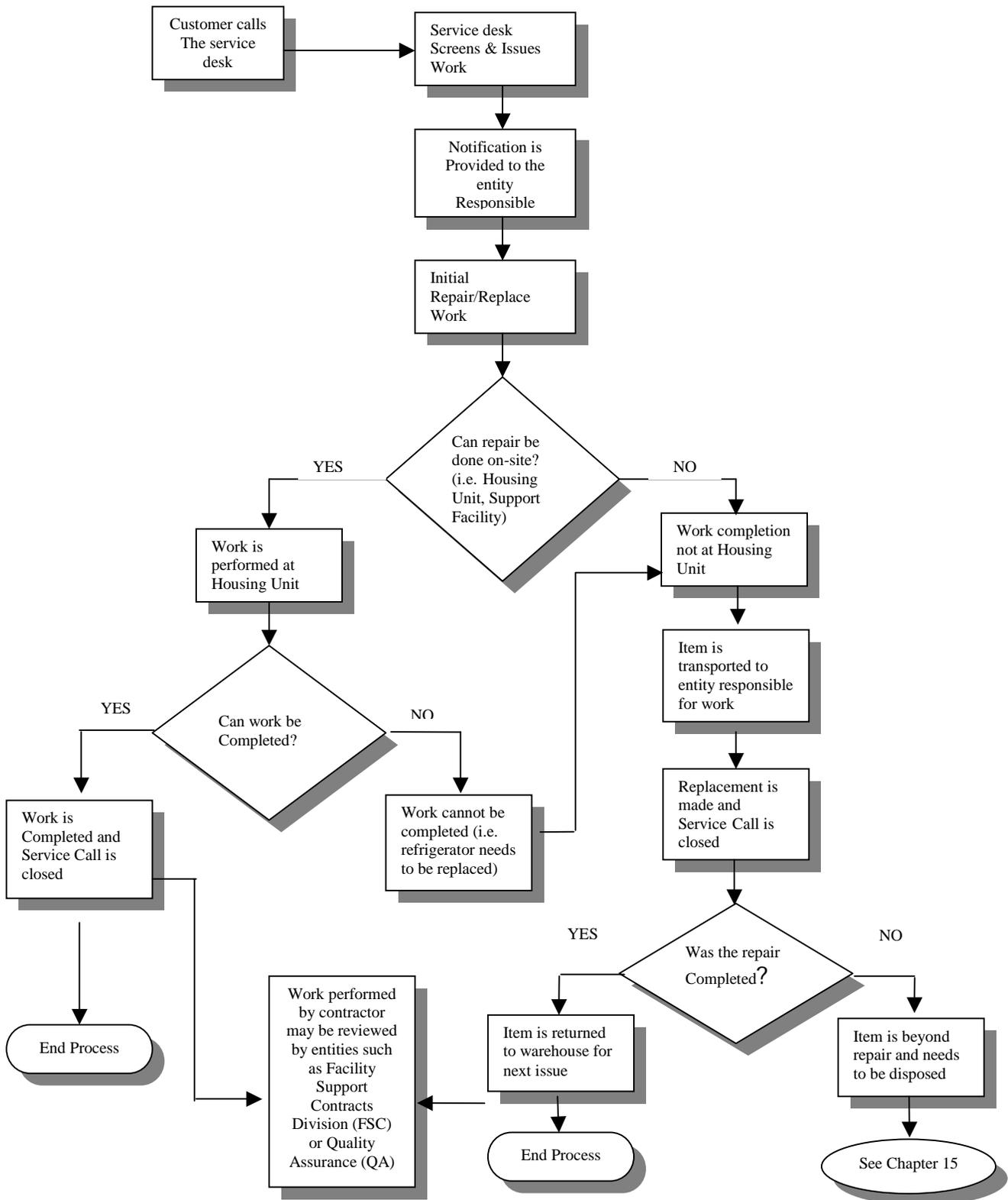


Figure 17-3

#### IV. STANDARDS OF MAINTENANCE

All facilities and assets identified on the Family Housing Property Account shall be maintained to a standard that prevents deterioration beyond that which results from normal wear and tear and which corrects deficiencies in a timely manner to ensure the full life expectancy of the facilities. The level of maintenance shall ensure that all family housing facilities are free of missing components or defects that would affect the safety, appearance, or habitability of the facilities or would prevent any electrical, mechanical, plumbing, or structural system from functioning in accordance with the design. All replacement parts should be equal to or better than the original and should reflect state of the art technology. All work shall provide a pleasing, finished appearance. For example, if replacement tiles do not match existing, existing tiles must also be changed or a design implemented that camouflages the difference. Standards should reflect those of quality housing in the private sector and shall also incorporate federal and local safety standards for the remediation or "maintenance in place" of hazardous materials such as lead-based paint, asbestos, radon, etc. The force protection and anti-terrorism standards should also be taken into account.

##### A. BUILDING EXTERIOR

The following are standards of maintenance for the exterior of family housing facilities:

1. Exterior Walls. An exterior wall is any wall that is exposed to the weather. All exterior walls shall be maintained in a structurally sound, weather tight condition. The walls shall be free of pitting and corrosion, vegetation and animal life, deteriorated siding and trim, discoloration and graffiti, or other defects. The color selection should be according to the Base Master Paint Plan.

2. Roofing. All roofing components shall be maintained to preserve a weather tight seal and prevent abnormal deterioration. Missing components shall be replaced to retain the original whole condition of the roof system.

3. Gutters, Downspouts, and Splash Blocks. Gutters and downspouts shall be properly aligned and secured to the house with splash blocks correctly positioned to receive the impact of the drainage water. Drains shall be maintained to effectively channel run-off water away from the housing unit. Gutters and downspouts shall be kept free of debris or any obstruction. Recurring maintenance work should be initiated for this type of work.

4. Overhangs. Overhangs shall be maintained with fascia and soffits properly secured and free from deterioration. Bird screens and vents shall be maintained intact and free of corrosion.

5. Windows, Doors, Screens, and Shutters. Windows, doors, screens, and shutters should operate smoothly and properly. Exterior doors, windows, and shutters shall be maintained to preserve the weather tight seal with caulking, glazing, and weather stripping fully intact. New replacement glass shall meet existing standards or shall be the same insulation value or greater thickness, type, and quality as the existing. Window screens and screen doors shall be maintained in good working order and free of torn fabric or frame defects. All hardware shall be free of corrosion or other

defects which would prevent its operating as intended.

6. Miscellaneous Roof Structures. Chimneys, vent stacks, roof ventilators, or other items that pierce the roof should function as originally designed. Flashing shall be maintained to prevent leaking. Wind driven turbine ventilators shall be maintained free of corrosion or other defects that would prevent their operating as intended.

#### B. BUILDING INTERIOR

The following are standards of maintenance for the interior of family housing facilities:

1. Interior Walls. Interior walls shall be maintained free of damage, deterioration, cracks, defective materials, or noticeable discoloration.

2. Concrete Floors. Concrete floors shall be maintained in a usable and safe condition, free of cracked, spalled, or broken areas.

3. Subflooring. Subflooring and structural members shall be maintained in a safe and usable manner. Deteriorated subflooring members shall be repaired or replaced to retain the original whole condition of the floor.

4. Hardwood Flooring. All hardwood floors shall be maintained with a smooth, glossy finish, free of damage, deterioration, or buckling.

5. Vinyl Tile/Linoleum Coverings. All floor coverings shall be maintained in a good condition, free of cracks, chips, and torn or excessively worn material. No asbestos contained materials are allowed.

6. Carpet. Carpet shall be maintained free of staining, fading, stretching, fraying, raveled seams, odors, and excessively worn material. Carpet edge should properly adhere to tack and transition strips.

7. Ceramic Tile. All ceramic tile floors shall be maintained free of loose, damaged, broken, missing, or cracked tiles and with joints properly sealed to provide the intended watertight surface.

8. Stairways. Stairway treads, risers, nosings, balustrades, handrails, and other structural members shall be maintained to provide a safe and usable system.

9. Ceilings. All ceilings and framing members shall be properly secured. The ceiling shall be free of holes or cracks, soiled, defaced or water damaged surfaces, or other defects.

10. Window Coverings. All window coverings shall be maintained to operate smoothly and properly, and be free of defects. No draperies should be provided for non-Flag quarters.

11. Interior Trim. Interior trim surfaces shall be maintained smooth, free of chipped or peeling paint, exposed nails, warps, cracks, rot, or termite damage.

12. Built-In Cabinetry. Cabinets, shelving, countertops, and similar

items shall be maintained in a fully usable condition.

13. House Accessories. Accessories such as mail slots, doorstops, door bells, door knockers, paper holders, soap trays, tumbler holders, towel bars, shower curtain rods, toilet seats, medicine cabinets, window covering brackets, curtain rod boards, closet pulley guides, house numbers, dryer vents and so forth, shall be maintained free of defects and in a satisfactorily functioning condition. Resident's name signs are not required for identification purposes. Accordingly, FH,N funds will not be used for obtaining, installing, or maintaining resident name signs.

14. Safety Accessories. Hard-wired smoke detectors and plug-in carbon monoxide detectors shall be periodically tested to ensure conformance with national standards and life-cycle replacement guidelines.

15. Special Accessories. Accessories installed under the American Disabilities Act and for Exceptional Family Member (EFM) residents shall be maintained in a satisfactory, safe and operating condition.

#### C. ELECTRICAL

Preventive maintenance of the electrical equipment and distribution system within each unit begins with the building service entrance. The electrical equipment, distribution panel, connections, grounds, outlets, switches, wiring, and lighting fixtures shall be maintained in a safe and usable condition, in conformance with national and local building codes. Receptacles and breakers with ground fault sensors shall be capable of properly detecting faults. Energy conservation concepts and measures should be taken into account.

#### D. PLUMBING

1. All plumbing systems and fixtures specific to each housing unit and other housing real property facilities shall be maintained in a good and safe operating condition and free of leaks and drips. Domestic water lines shall be maintained from and including the service cut-off box. Waste and sewage lines shall be maintained to the connection at the sanitary sewer main. Gas lines shall be maintained to the cut-off valve at the pressure regulator.

2. All sinks, tubs, toilets, basins, lavatories, and showers shall be maintained to operate properly, drain freely, and be free of chips, cracks, or excessive discoloration. All fixtures that cannot be repaired shall be replaced with plumbing fixtures of equal or better quality and in compliance with current plumbing codes. Replacement toilets shall be water saver types. Defective showerheads shall be replaced with a water saver showerhead.

#### E. HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

1. The required standard includes inspecting and maintaining heating, air conditioning, and ventilating systems, to include the duct system, in safe operating condition, at design capacity. All materials and equipment furnished shall be of the same grade, equal or better quality, and size as the original construction. Filters will be of the size and type recommended by equipment manufacturers and should be replaced on a regular schedule.

2. Freon is a Class I ozone depleting substance (ODS) and must be

handled in compliance with the requirements of the Montreal Protocol and subsequent amendments as embodied in the Clean Air Act Amendments. All work shall comply with the applicable standards of the Air Conditioning Contractors of America.

#### F. APPLIANCES AND EQUIPMENT

Appliances and equipment shall be maintained in good operating condition. Appliances and equipment that cannot be adjusted, repaired, or are beyond economical repair shall be replaced. The maintenance, repair, or replacement of government-owned household equipment and appliances is authorized by and subject to the restrictions, limitations, and approvals in Chapter 15.

#### G. PAINTING

Painting shall include both the interior and exterior of the dwelling units. Touch-up or partial painting on interior or exterior of units should be accomplished as required to properly maintain housing assets. All new work and repainted areas shall be properly prepared and cleaned prior to paint application. Painted areas shall match existing adjacent surfaces, completely covered, and free of brush marks and runs. Generally, the painting cycle spans 3 years for the interior and 4 years for the exterior. HUD regulations concerning lead-based paints must be followed.

#### H. MASTER TV ANTENNA/CABLE/FIBER OPTIC/WIRING SYSTEM

1. Any government provided reception system, including satellite, which provides a connection between the house and an outside communication source shall be maintained from its entrance to the house to the wall outlet(s).

2. Public Law 106-52 added a housing unit's communications infrastructure to FH,N funding responsibilities. Specialized communication equipment is defined as that which is required by the resident to perform his or her mission. The equipment is primarily for secure communications, but could include a computer, video teleconferencing capability or similar. Any costs for infrastructure which is "built-in" and which becomes part of the housing unit, such as wiring or fiber optics associated with the specialized communication equipment, is charged to the Family Housing, Navy (FH,N) appropriation with any maintenance charged to FH,N, BP-20. Charges for maintenance of the "built-in" infrastructure from the house to the main cable connection is similar to that for utility systems which primary serve family housing areas. FH,N, BP-20 will also be charged for maintenance beyond the 5 foot line to where the wiring or fiber optics terminates or joins the main line. Only the specialized communication equipment and its associated installation costs may be charged to another appropriation.

3. All parts, components, and equipment necessary to provide reception of very high frequency and ultra-high frequency local television broadcasts shall be maintained to provide good reception. Overseas, where conditions differ and there may be no cable companies, the infrastructure of reception systems serving whole housing neighborhoods may require maintenance with FH,N funds.

#### I. SECURITY AND ANTITERRORISM MEASURES

1. Public Law 106-52 mandates that any maintenance and repair work performed on family housing structures or in family housing areas, including security and antiterrorism measures, will be funded solely from the family housing operation and maintenance accounts. Therefore, maintenance of the infrastructure within the individual house and from the house to the termination point or to the connection with a common system serving more than one house is a housing office responsibility.

2. Maintenance will likely be provided by a contract issued by the major claimant or "in-house" by activity security personnel. The housing authority is responsible for requesting resources for antiterrorism as part of the maintenance budget.

#### J. TELEPHONE SYSTEMS

Telephone wiring shall be maintained from the demarcation point established by the telephone company throughout the structure to, and including, telephone jacks. Cracked, missing, or inoperative plug-in or screw connected telephone jacks shall be replaced. Overhead wiring should be avoided throughout the housing areas.

#### K. GROUNDS MAINTENANCE

1. The resident is responsible for caring for assigned grounds, to include mowing, raking, pruning and trash removal. Assigned grounds are defined as those surrounding the house out to 50' or to half-way to the next house, whichever is greater. The government will prune trees and bushes over 6' tall and repair storm damage in the resident's area of responsibility.

2. Common area grounds shall be maintained using sound horticultural practices. Turfgrass, planted beds, ground cover, shrubs and hedges shall be maintained to enhance curbside appeal. Replacement plant materials shall be hardy, appropriate to the locale, drought resistant and easy to maintain.

3. Weed and pest control shall be performed to prevent undesirable plant growth and pest problems relative to grounds. Environmental Protection Agency (EPA) guidelines on use of lawn chemicals for fertilization and pest control shall be strictly followed. Fertilizer shall be applied in a manner that promotes health, growth, color and appearance. Irrigation equipment shall be maintained in proper operating condition. Drainage systems shall be maintained in a condition as intended by original design. Proper maintenance shall be provided to prevent undermining and erosion of all slopes in landscaped and natural growth. Fence lines will be maintained to remove grass, weeds, and all other growth.

4. Playground, common and recreational areas shall be regularly maintained to remove all foreign materials.

#### L. OTHER REAL PROPERTY

Other real property, including but not limited to playground equipment, fencing, signage driveways, walkways, detached garages and bus shelters, identified on the family housing property plant account shall be maintained in good operating condition in accordance with DoD guidelines and

NAVFACINST 11101.85H criteria. At a minimum, playground equipment shall be inspected on a quarterly basis. Playground equipment should be checked at various intervals based upon location of the Installation. Playground equipment located on bases that have year round sun need to be inspected more often than bases that have snow 5 months of the year.

## V. FACILITIES SUPPORT CONTRACTS

A. Family housing facilities may be maintained by contract. Subject to law, facilities support contracts must be developed in accordance with the Federal Acquisition Regulations (FAR), the Department of Defense Federal Acquisition Regulation Supplement (DFARS), the Navy Acquisition Procedures Supplement (NAPS) and the NAVFAC P-68, Contracting Manual. In addition, the NAVFAC Guide Performance Work Statement (GPWS) for Maintenance of Military Family Housing provides information and assistance in preparing facilities support contracts.

B. Contract requirements, commonly known as performance work statements (PWS), can be expressed in different ways. The traditional method has been in a requirements determination contract. Recent emphasis, however, has been on performance based and outcome based contracts that attempt to benefit from the contractor's business expertise. The different types of PWSs, previously referred to as contract specifications, which form section C of the contract format are:

1. Requirements determination: The PWS specifies exactly how the contractor is to perform the work. Statements such as "the grass must be mowed weekly in a straight grid pattern, removing all debris with a leaf catcher or rake" is an example of this type of requirement.

2. Performance Based Contracts (PBC): Contract requirements are expressed in the form of "end results." The specifications minimize "how to" words but describe work outputs as explicitly as possible. The contractor is allowed latitude to manage his/her own work force and choose his/her own methods for accomplishing the work. The specification merely defines the magnitude (number of services desired for purchase) and quality of each of the services to be provided, as well as the scope or limit of each. Schedules of accomplishment and/or specific time limitations in which all services must be completed are given and mandatory operating procedures or steps the Contractor must follow for some services are specified. The family housing GPWS uses this approach.

3. Outcome Based Contracts (OBS): An OBS contract defines the desired outcomes of work to be performed for each contract requirement including the standard by which each outcome will be measured. The contractor must develop and submit a technical proposal describing the method and process to meet each desired outcome.

C. When developing a contract, the following must be considered:

1. Are the requirements currently contracted? Will this be a continuation of the contracted services, or a consolidation of several contracts?

2. Are the requirements to be included in the PWS subject to a Commercial Activities cost comparison study under OMB Circular A-76? If this

is the case, it is mandatory that the scope of work and level of performance specified be equivalent to the level of effort that can be achieved by the Most Efficient Organization (MEO) if the function is retained in-house.

D. The following clauses, designed to protect the government's interests, shall be incorporated into each maintenance contract and shall also be used as the standard for Memorandums of Understanding (MOU) with station forces providing maintenance:

1. False service call. A trouble call that was made by a resident when there is no problem or when the work requested is resident responsibility. False calls should be defined and included in service provider reporting requirements so that the resident can be charged for the response effort. Compensation for the false call should recoup only the service provider's actual costs for travel to the site. This is not worth the effort. This requirement will have the government processing \$100 worth of paperwork to collect \$10 in actual costs for travel to the site. There should be a "Flat Rate" charged for this service. Less paperwork and more efficient.

2. Cancelled Service Call. When the trouble call desk is notified work is no longer required prior to the service call visit and notifies the service provider that the call is cancelled, no payment will be made to the service provider and the call will not be included in historical data.

3. Not Home. In accordance with GPWS, paragraph C.6.c(2), the clause shall state

"Resident Not Home. The Contractor may respond to a service call, scheduled preventive maintenance inspection, or other work requirement, either with or without an appointment, only to find upon arrival that the resident is not home. The Contractor shall not enter the unit if the resident is not home, and must reschedule the work.

(a) If the work is routine (not an emergency or urgent service call) the Contractor shall exercise his/her management responsibilities and skills to contact the resident and schedule/reschedule a time for the work to be accomplished within the required completion times for that type of work. The Contractor is responsible for scheduling and completing all work requirements within specified completion times. The Contracting Officer shall be contacted for assistance only in extreme cases, such as when residents are out of town for extended periods of time.

(b) If the Contractor responds to an emergency service call and finds the resident is not home, the Government's work reception center (during the Government's regular working hours) or night reception center (after regular hours) must be contacted within 15 minutes. In most cases, depending on the nature of the emergency, the work reception center will either give the Contractor immediate verbal approval to enter the unit, dispatch a Government Representative within 15 minutes to enter the unit with the Contractor, or direct that the call be canceled. If canceled, the service call work authorization form shall be marked to indicate the time of the phone call, name of individual contacted, etc., and then returned to the Government's work reception center not later than 1200 the following regular Government working day.

(c) If the Contractor responds to an urgent service call and finds that the resident is not home, the call shall be reclassified as routine and the appropriate completion time shall apply. The work authorization form shall be annotated "RESIDENT NOT HOME - RECLASSIFIED" and a copy provided to the Government's work reception desk not later than 1200 the following regular Government working day."

(d) If the Contractor responds to a SCHEDULED appointment and the resident is not home the Contractor shall leave a notice in accordance with the above sections. The resident will be charged a "Flat Rate" for the Contractor's response.

4. Multiple Service Call. Service call limits are usually specified in terms of labor hours and material costs, not number of tasks. Therefore, various work tasks, usually no more than four, received for the same quarters should be combined into one service call. Residents must be educated that the combination of work is cost effective for the government and convenient for them. See paragraph C.8 of the GPWS.

5. Out of Scope Service Call. A call that exceeds the limit of a service call as defined in the contract or the memorandum of understanding (MOU) with the service provider. It may also be a request for work that is not included as part of the contract/MOU with the service provider. Careful preparation of Section C, specifications of the contract or MOU, can avoid out of scope requests. When work is done by various service providers, out of scope service calls can be avoided through education and training of service desk personnel. If out of scope service calls should occur, the following applies:

a. If the Housing Office generates the out-of-scope service call, housing is responsible for any cost associated with the call.

b. If the service provider generates the out-of-scope service call, the service provider is responsible for all associated costs.

c. "Beyond the scope of" calls are defined in paragraph C.8.d(1)(a), C.8.d(2), and C.8.d(3) of the GPWS

#### 6. Warrant Service Calls.

a. Re-Work Service Call. Work defects that require corrective action. Re-work is required due to unacceptable workmanship or material/equipment failure. Work is normally performed by contract services, although it may include in-house personnel. Re-work service calls are usually associated with prior service calls that should be guaranteed by the service provider for a reasonable period of time. Failures within a reasonable period of time, often defined as not less than 90 days, will normally be considered re-work to be corrected at service provider expense. Potential rework, at no cost to the government, is suspected when screened service calls determine similar/same work was accomplished within the minimum reasonable period of time (i.e. 90 days).

b. FAC 5252.212-9300 (P-68), "COMMERCIAL WARRANTY" states Contractor services furnished shall be covered by the most favorable commercial warranty. Reports should be reviewed periodically to identify

which, if any, service calls were required to correct poor workmanship performed by the Contractor. The local contracting officer will resolve disagreements in re-work determination.

c. Work defects contract clause. As specified in the "CONSEQUENCES OF CONTRACTOR'S FAILURE TO PERFORM REQUIRED SERVICES" clause, Section E of the GPWS, the Government may require a Contractor to reperform work that has been identified as being unsatisfactorily performed or not performed, provided a reasonable amount of time is allowed for the rework to be completed. In-house work forces should also be required to correct work defects at no cost to the housing authority.

d. Warranty service calls. Associated with new equipment, major repairs and improvements, revitalizations and new construction, warranties must be tracked and exercised as necessary to protect the government's investment. The following contract clause is found in the section C of the GPWS. "Equipment Under Manufacturer's or Installer's Warranty. Equipment, components, and parts, other than that installed under this contract, shall not be removed or replaced or deficiencies corrected while still under warranty of the manufacturer or the installer without prior approval of the Contracting Officer. All defects in material or workmanship, defective parts, or improper installation and adjustments found by the Contractor shall be reported to the Contracting Officer so necessary action may be taken. The Contractor shall be knowledgeable of the equipment, parts, and components under warranty and the duration of such warranties. The Contracting Officer will furnish available warranty information to the Contractor."

e. When the service call desk is Contractor operated, service calls received shall be reviewed periodically at least on a monthly basis by the housing authority to ensure service calls are not completed for appliances or equipment under warranty.

#### D. Resident Interface.

1. Maintenance standards and contract or MOU clauses concerning maintenance to quarters should be shared periodically with residents. Since they are the ultimate customers, education as to government expectations for maintenance will prove valuable. Scopes of work and other pertinent information concerning service desk operation, work covered, etc. can be posted on activity or contractor web sites.

2. Resident participation in development of the PWS, partnering agreements, pre-performance conferences and performance award panels has proven valuable.

3. In order to avoid cancelled service calls, management should consider:

(a) Resident needs when establishing the Contractor's regular working hours, e.g., extended hours two nights per week, Saturday hours, etc.

(b) Requiring the contractor make appointments when access to the unit is necessary for work to be accomplished.

(c) Having the service desk schedule resident appointment times to permit flexibility for after hours work and weekends.

(d) Enforcing the right to enter in emergency situations.

(e) Obtaining a written authorization from the resident for "right to entry" for service call work if the situation warrants.

(f) Informing residents of penalties for missed calls through orientation and educational materials.

E. Training. When a contractor performs maintenance, the government must ensure that the contract requirements are satisfactorily met prior to authorization of payment. All housing personnel who work directly with contractors and, in particular, those tasked with contract oversight must attend appropriate training. This training should be repeated on no less than a five-year cycle.

## VI. Quality Assurance Program

A. The quality assurance (QA) program is the means by which the government confirms that the quality and quantity of services and goods provided by a maintenance provider are in compliance with either contract specifications or MOU expectations. The provisions for QA of contractor work are formalized in regulation and by legislation and the GPWS Quality Assurance Guide can assist activity personnel in developing a sound QA program. All housing personnel who interface with a maintenance provider shall attend QA training because the provisions of a QA program can be applied to work performed by contract, by station forces or by credit card vendors. The government is responsible for quality assurance, the evaluation of the product or service against the contract or MOU specifications. The local housing authority, as the recipient of the goods or services, is responsible for developing and implementing procedures that check or test to ensure that the level of service being paid for is being received. These procedures are referred to as quality assurance (QA) plans.

B. Maintenance providers, both contractors and in-house personnel, are responsible for providing a quality control program within their organization.

### C. Quality Assurance Methods

Choosing an appropriate surveillance method is important to the successful evaluation of a maintenance provider's performance and the adequacy of its quality control system. Each of the standard surveillance methods provides a measure of maintenance performance. One hundred percent inspection provides total knowledge of overall performance. Random sampling provides a statistically sound estimate to be made of the contractor's overall level of performance. The other three methods, planned sampling, unscheduled inspection, and validated complaints, provide a subjective assessment of the contractor's performance but may be more reasonable in a climate of shrinking dollars and manpower. In family housing, increased responsibility for determining work is performed and performed correctly is appropriately given to the resident who often requested and who benefits from the maintenance.

### D. EVALUATION RESULTS

The QA process must provide for QA evaluation results to be made known to the maintenance foreman for in-house forces or Facilities Support Contract Manager (FSCM) responsible for taking the appropriate contractual action in a timely manner. Rework and other quality provisions of the MOU or contract specifications must be closely monitored. Customer satisfaction cards and resident surveys, possibly completed on line, can provide valuable information for use in payment for work and for performance awards.

#### E. FAMILY HOUSING RESPONSIBILITIES

1. Housing personnel will often perform QA functions. Effective accomplishment requires technical knowledge of the function being evaluated, detailed knowledge of the contract or MOU specification under which the function is being procured, and a thorough understanding of the QA process from initiation of work to certification of payment for work.

2. When family housing personnel are performing contract QAE functions, they are responsible to the FSCM and take their technical direction from that individual. Family housing QAEs do not administer contracts but rather assist the FSCM through the verification and documentation of contractor performance. The following duties will be performed in both a contract and a MOU maintenance provider situation.

a. Recommend the fastest, most cost effective, best method to accomplish work to the housing authority.

b. Assist in contract administration, as delegated by the Resident Officer in Charge of Construction (ROICC)/FSCM. With an MOU, provide liaison with the in-house foremen.

c. Review contract specifications prior to advertisement and MOU agreements prior to execution.

d. Know and understand specifications, responsibilities, and relationships with the family housing authority and the maintenance provider's organization.

e. Attend site visits with potential bidders and post-award, prework site visit with maintenance provider.

f. Attend pre-performance conference.

3. Initiate, review, and retain documentation to include:

a. Contract/MOU preparation including detailed work requirements with particular emphasis on sections C and J.

b. Inspection schedule or surveillance plan.

c. Order for work or work authorizations.

d. Inspection reports on maintenance provider performance.

e. Provision of information for notices (cure, show cause, terminate, or renew).

f. Verification for payment.

4. Determinations requiring in-depth technical knowledge of structural, mechanical, electrical, or utility distribution systems may be requested from personnel assigned to public works organizations or from private sector providers.

<b>MAINTENANCE LIFE CYCLE SUMMARY</b>						<b>Bluebird Heights Family Housing</b>
<b>Location</b>	<b>Product or Material</b>	<b>Date</b>	<b>Life Span</b>	<b>Next</b>	<b>Replace</b>	<b>Recommended</b>
<b>Component</b>		<b>Installed</b>	<b>(Range)</b>	<b>Repair</b>	<b>ment</b>	<b>Action</b>
						As of date:
<b>SITWORK (Other Real Property)</b>						
Street Paving	asphalt; concrete curb/gutter	1988	10-15 years	2000		resurface: chip seal
Sidewalk Paving	poured in place concrete	1988	50+ years	2038		
Water Service	8"&18" ACP @1000gpm	1988	50+ years	2038		
Sewer Laterals	8" PVC	1988	50+ years	2038		
Storm Drainage	gutters, catch basins, swales	1988	50+ years	2038		
Electrical Service	utility company to meter	1988	N/A			responsibility of utility company
Communication Service	cable, telephone by utility	1988	N/A			responsibility of utility/cable company
Street Lighting	25' pole, 180 & 135w lamps	1988	5/50+ years			lamps replace @ 5yr. Interval
Site Lighting	10' pole, 55w hps	1988	5/50+ years			lamps replace @ 5yr. Interval
Unit Fences and Gates	6' wood plank	1988	20 years	as needed	2010	replace boards rotted by irrigation
Site Fences and Gates	4' chain link	1988	25 years	as needed	2113	
Site Furniture	wood benches	1988	15 years		2003	
Play Structures	various manufacturers' equip	1998	25 years	as needed	2123	code changes may require earlier replacement
<b>LANDSCAPE AND IRRIGATION</b>						
Irrigation System	auto, underground PVC	1988	25 yrs	annual	2113	annual coverage check
Lawns & Grasses	turf (Bermuda grass)	1988	15 yrs	1998	2003	thatch 1998
Trees & Shrubs	variety of species	1988	30-50 yrs	1998	2028	prune annually, replace as needed
Groundcovers	variety of species	1988	10 yrs	10 yrs	1998	replace where not covering
<b>STRUCTURAL SYSTEMS</b>						
Foundation System	concrete slab on grade	1988	50+ yrs	2000	N/A	evaluate every 4 years
Walls (Interior & Exterior)	wood studs	1988	50+ yrs	2000	N/A	evaluate every 4 years
Floor Framing: Second Floor	wood joists	1988	50+ yrs	2000	N/A	evaluate every 4 years
Roof Framing	wood trusses	1988	50+ yrs	2000	N/A	evaluate every 4 years
<b>ROOFING SYSTEM</b>						
Roofing	asphalt shingles	1997	10-15 yrs	N/A	2007	install tile roof next replacement
Gutters/Downspouts	prefinished aluminum	1988	25-30 yrs	N/A	2007	replace with roofing
Flashing	galvanized sheet metal	1988	20-30 yrs	N/A	2007	replace with roofing
Roof Penetrations	vent pipe/flashings	1997	5-8 yrs	N/A	2004	reseal every 5 years

## APPENDIX 1

**LIFE CYCLE SUMMARY continued**

Bluebird Heights Family Housing

<b>EXTERIOR FINISHES</b>						
Exterior Wall Finish	stucco	1988	20-30 yrs	N/A	1998	provide new stucco color coat in '98
Fascias, Soffits, & Vents	stained wood	1988	5-8 yrs	1998	2003	repaint with roof replacement
<b>DOORS AND WINDOWS</b>						
Entry Door	insulated metal panel	1988	25-30 yrs	COO	2013	
Entry Door Hardware		1988	25-30 yrs	COO	2013	
Other Exterior Doors	solid core wood (painted)	1988	10-15 yrs	COO	2003	
Exterior Door Hardware		1988	10-15 yrs	COO	2003	
Sliding Glass Doors	fiberglass	1988	25-30 yrs	COO	2013	
Sectional Garage Doors	insulated metal panel	1988	25-30 yrs	COO	2026	
Screen Doors	aluminum/white enamel	1988	5-10 yrs	COO	1998	replace every 10 years
Interior Doors	hollow core wood(painted)	1988	25-30 yrs	COO	1998	replace on first change of occupancy
Interior Door Hardware	brass	1988	25-30 yrs	COO	2018	
Windows	aluminum/white enamel	1994-96	25-30 yrs	COO	2025	
Weather stripping	varies	1988	5-8 yrs	COO	1998	replace every 5 years
<b>INTERIOR FINISHES</b>						
Flooring: Bathrooms, Kitchen	sheet vinyl	Varies	3-5 yrs	COO	COO	replace as necessary
Flooring: Entry	ceramic tile	N/A	50 yrs	N/A	1998	initial installation on change of occupancy
Flooring: Other Areas	carpet	Varies	7-10 yrs	COO	COO	replace at 7 years if necessary
Base Board	painted wood	Varies	25-30 yrs	COO	COO	paint as necessary
Cove Base	rubber	Varies	25-30 yrs	COO	COO	replace with new flooring and as necessary
Doorframes & Other Trim	painted wood	1988	3-5 yrs	COO	COO	paint when necessary
Wall and Ceilings	painted gypsum board	1988	3-5 yrs	COO	COO	change of occupancy (normally 3 year intervals)
<b>CABINETS AND COUNTERTOPS</b>						
Kitchen Cabinets	wood	1988	25-30 yrs	COO	2025	refinish wood, as necessary, at change of occupancy
Kitchen Countertops	solid surface	1988	25-30 yrs	N/A	2025	
Bathroom Cabinets	plastic laminate/wood	1988	15-20 yrs	COO	2020	refinish wood, as necessary, at change of occupancy
Bathroom Countertops	plastic laminate	1988	10-15 yrs	COO	2003	
<b>KITCHEN APPLIANCES (to match chapter 15 life cycle)</b>						
Refrigerator (BP-14)	top mounted freezer	1988	15 yrs	svc call	2003	at change of occupancy
Dishwasher, built-in		1988	9 yrs	svc call	1997	
Range (BP-14 if moveable)	gas	1988	10 yrs	svc call	1998	
Garbage Disposer	1/2 hp	1988	5-8 yrs	svc call	1996	
Range Hood		1988	10-15 yrs	svc call	2003	
<b>APPENDIX 1</b>						
<b>LIFE CYCLE SUMMARY</b>	<b>continued</b>					Bluebird Heights Family Housing

<b>BATHROOM SPECIALITIES</b>						
Bath Accessories	chrome towel bars etc.	1988	10-15 yrs	COO	2003	replace to match
Tub/Shower Doors	tempered glass	1988	10-15 yrs	COO	2003	replace with tub/shower surround
<b>FURNISHINGS</b>						
Window Coverings (BP-14)	aluminum mini blinds	varies	5-8 yrs	COO	COO	
Window Coverings (BP-14)	vertical blinds	varies	5-8 yrs	COO	COO	
<b>MECHANICAL AND PLUMBING</b>						
Heating System	gas furnace in garage	1988	25 yrs	svc call	2013	perform pm annually
Ductwork & Registers	sheet metal	1988	25 yrs		2013	
Vents	metal	1988	25 yrs	1998	2013	correct dryer vent deficiencies
Exhaust Fans	range hood and bath exhaust	1988	10-15 yrs	1998	2008	
Plumbing Fixtures	stainless	1988	10 yrs	1998	2008	corroded, replace now
Water Piping	copper	1988	25 yrs		2013	check under slab for corrosion/leak
Water Heater	40 gallon gas fired	1988	10-15 yrs		2003	provide seismic bracing
Gas Piping	steel	1988	25 yrs		2013	
<b>ELECTRICAL, LIGHTING AND COMMUNICATIONS</b>						
Meters	240/120V-1PH-3W	1988	25 yrs		2013	
Panels/Circuit Breaker	100 amp 240/120V-1PH-3W	1988	25 yrs		2013	
Power Distribution Wiring	copper with ground	1988	25 yrs		2013	
Receptacles	15A-20A grounding, push-in	1988+	10 yrs	COO	COO	replace with GFCI, proper spacing
Lighting	fluorescent & incandescent	1988+	10 yrs	COO		replace with fluorescent fixtures
Telephone	phone company	1988	10-20 yrs	svc call	COO	replace with new outlets, add jack to bedroom
Security Systems/Computers	fiber optic cable	2001	10-20 yrs	svc call	COO	replace according to technology
Television	cable company	1988	10-20 yrs			replace with cable, install new outlets
Smoke Detectors	battery, hard-wired	1988	5 yrs	svc call		replace as necessary
Carbon Monoxide Detector		1999	5 yrs	svc call		replace as necessary
<b>APPENDIX 1</b>						

# INSPECTION FINDINGS MATRIX

Bluebird Heights

Location Component	Product or Material	No Repair	Minor Repair	Major Repair	Replace - ment	Comments
Inspection date:						follow up date:
<b>SITWORK</b>						
Street Paving	asphalt; concrete curb/gutter		X			re-paint "stop" delineators, speedbumps
Sidewalk Paving	poured in place concrete	X				
Water Service	8"&18" ACP @1000gpm	X				
Sewer Laterals	8" PVC	X				
Storm Drainage	gutters, catch basins, swales		X			clean out, correct grades @ ponding
Electrical Service	utility company to meter	X				
Communication Service	cable, telephone by utility	X				
Street Lighting	25' pole, 180 & 135w lamps		X			relamp, add street lights as needed
Unit Fences and Gates	6' wood plank		X			replace boards rotted by irrigation
Play Structures	Various manufacturer's equipment	X				
<b>LANDSCAPE AND IRRIGATION</b>						
Irrigation System	automatic underground PVC		X			adjust for overspray and dry areas
Lawns & Grasses	turf (Bermuda grass)		X			thatch turf
Trees & Shrubs	variety in ground		X			replace dead/poor trees, add trees
Groundcovers	variety in ground	X				
<b>STRUCTURAL SYSTEMS</b>						
Foundation System	concrete slab on grade	X				
Walls (Interior & Exterior)	wood studs	X				
Roof Framing	wood trusses	X				
Roof Sheathing	plywood	X				
<b>ROOFING SYSTEM</b>						
Roofing	asphalt shingles				X	
Gutters/Downspouts	prefinished aluminum		X			
Flashing	galvanized sheet metal				X	
Roof Penetrations	vent pipe/flashings				X	
<b>EXTERIOR FINISHES</b>						
Exterior Wall Finish	stucco		X			
Fascias, Soffits, & Vents	stained wood		X			

## INSPECTION FINDINGS MATRIX continued

Bluebird Heights

Location Component	Product or Material	No Repair	Minor Repair	Major Repair	Replace -ment	Comments
<b>DOORS AND WINDOWS</b>						
Entry Door	insulated metal panel	X				
Entry Door Hardware		X				
Other Exterior Doors	solid core wood (painted)		X			
Exterior Door Hardware			X			
Sliding Glass Doors	fiberglass		X			Replace every 20 years
Sectional Garage Doors	insulated metal panel	X				Replace as enhancement
Screen Doors	aluminum/white enamel		X			
Interior Doors	hollow core wood(painted)		X			
Interior Door Hardware	brass		X			
Windows	aluminum/white enamel		X			
Weatherstripping	varies				X	Replace every 5 years
<b>INTERIOR FINISHES</b>						
Flooring: Bathrooms, Kitchen	sheet vinyl		X		X	Replace every 7 years
Flooring: Other Areas	carpet		X		X	Replace every 7 years
Base Board	painted wood		X			
Doorframes & Other Trim	painted wood		X			Paint when necessary
Wall and Ceilings	painted gypsum board		X			At change of occupancy (normally 3 year intervals)
<b>CABINETS AND COUNTERTOPS</b>						
Kitchen Cabinets	plastic laminate/wood		X			Refinish wood at change of occupancy
Kitchen Countertops	plastic laminate/wood		X			
Bathroom Cabinets	plastic laminate/wood		X			Refinish wood at change of occupancy
Bathroom Countertops	plastic laminate		X			
<b>KITCHEN APPLIANCES</b>						
Refrigerator (BP-14)	top mounted freezer		X			
Dishwasher			X			
Range/Oven (BP-14 if moveable)	gas		X			
Garbage Disposer	1/2 hp		X			
Range Hood			X			

### APPENDIX 2

## INSPECTION FINDINGS MATRIX continued

Bluebird Heights

Location Component	Product or Material	No Repair	Minor Repair	Major Repair	Replace - ment	Comments
<b>BATHROOM SPECIALITIES</b>						
Bath Accessories	chrome towel bars etc.		X			
Tub/Shower Doors	tempered glass		X			Replace with tub/shower surround
<b>FURNISHINGS</b>						
Window Coverings (BP-14)	aluminum mini blinds		X			
Window Coverings (BP-14)	vertical blinds		X			
<b>MECHANICAL AND PLUMBING</b>						
Heating System	gas furnace in garage	X				
Ductwork & Registers	sheet metal	X				
Vents	metal		X			Replace damaged dryer vents
Exhaust Fans	range hood and bath exhaust	X				Corrosion on bath & kitchen fixtures
Plumbing Fixtures	stainless		X			
Water Piping	copper		X			
Water Heater	40 gallon gas fired		X			need seismic bracing
Gas Piping	steel	X				
<b>ELECTRICAL, LIGHTING AND COMMUNICATIONS</b>						
Meters	240/120V-1PH-3W	X				
Panels/Circuit Breaker	100 amp 240/120V-1PH-3W	X				
Power Distribution Wiring	copper with ground	X				
Receptacles	15A-20A grounding, push-in				X	Replace with GFCI, proper spacing
Lighting	fluorescent & incandescent		X			
Telephone	jacks and internal wiring		X		X	Replace with new outlets, add jack to bedroom
Security Systems/Computers	fiber optic cable		X			
Television	master antenna system		X		X	Replace with cable, install new outlets
Smoke Detectors	battery, hard-wired		X		X	Replace as necessary
Carbon Monoxide Detector					X	Replace as necessary

## APPENDIX 2