



# **The City of Apache Junction Housing Rehabilitation Program Construction Guidelines**

**dated November 7, 2013**

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## **PROGRAM OVERVIEW**

The City of Apache Junction has three program options for housing rehabilitation assistance:

- 1) Housing Rehabilitation
- 2) Emergency Rehabilitation
- 3) Replacement

The following guidelines will provide a means to upgrade and preserve housing units while maintaining reasonable standards for health and safety. These housing rehabilitation/construction standards are provided as a reference for housing rehabilitation projects assisted with State HOME, Housing Trust funds (HTF), and Community Development Block Grant (CDBG) funds.

All rehabilitated housing must, upon completion, be affordable, decent, safe, and sanitary. As such, all rehabilitated housing must meet or exceed all local codes, zoning and ordinances.

Upon completion of the rehabilitation, substandard workmanship, unsafe items, or hazardous situations are not acceptable. If repair of these items is not cost effective, the addition or modification may be demolished. All demolition, additions, alterations, modifications, repairs, or improvements to property(s) and/or structure(s) performed shall fully comply with current adopted construction codes and applicable Arizona Revised Statutes. The requirements outlined in this document do not preempt local codes or ordinances, nor do they alter or affect a contractor's obligation to comply with local or state law requirements.

HOME Funding guidelines require that under the Housing Rehabilitation program the dwelling shall be brought up to local code. However the Emergency Rehabilitation program allows for emergent items to be addressed without having to bring the home up to code.

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## **PROGRAM PRIORITIES**

Priorities have been established for determining the work that will be completed in the eligible homes.

1. Code Violations
2. Issues of Health and Safety
3. Weatherization Standards/ Energy Efficiency
4. Improvements of a Cosmetic Nature

The following must be taken into consideration when determining the priority of items for inclusion in the emergency or housing rehabilitation project scope:

- a) The age and the physical condition of the building;
- b) The goal of the program (building revitalization or direct benefit);
- c) Funds available for rehabilitation of each unit; and
- d) Value of unit after rehabilitation.

The following levels of priority are utilized to determine priorities for the rehabilitation:

### **Priority 1**

Items that must be included in the project scope and must be repaired or replaced:

- 1) Lead Based Paint Assessment (only on properties built prior to 1978);
- 2) Hazardous Materials;
- 3) Health and Safety Hazards;
- 4) Stable and Weather Tight Roof ;
- 5) Electrical System – the unit must have a minimum 100-amp electrical service, with no unsafe conditions;
- 6) Plumbing (including hot water) – Must be in good working order and be safe and sanitary;
- 7) Heating and Cooling Systems – must be adequate and safe with a reasonable (three year) useful life;
- 8) Egress in accordance with local health and safety codes; and
- 9) Trip Hazards.

### **Priority 2**

These items are also considered critical. These items should always be inspected and included in the inspection report. If reasonable and funds permitting shall receive priority and should be rehabilitated, repaired or replaced:

- 1) Structural soundness and integrity (including rotted or deteriorating materials and those impacted by termites and/or other wood-boring insects);
- 2) Siting of the structure and its relationship to water penetration that may impact structural integrity;
- 3) Functioning kitchen facilities including a sink and means of cooling and heating food to healthful standards; and

- 4) If the structure has an attached garage, appropriately-rated fire wall between garage and living areas.

### **Priority 3**

These items should be reviewed, and where feasible, corrected. These items must also be included whenever the Housing Rehabilitation Program is taking place. These items must be included in the inspection report and may be repaired or replaced:

- 1) Debris that may be a fire hazard;
- 2) All existing exposed surfaces painted or sealed and not presenting a health or safety hazard;
- 3) Cabinetry;
- 4) Finished flooring; and
- 5) Repair and replacement of doors and windows not presenting a health or safety hazard.

Items from all levels must be included in the preliminary inspection report for all construction projects and those where the cost of rehabilitation exceeds 75% of the value of the property.

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### **LIFE EXPECTANCY**

Major systems in the property, or items necessary to make a property meet standards should be analyzed on the basis of 3-year life expectancy. Major systems and necessary items include: roofs, heating, cooling, plumbing, water heaters, and the electrical components of the property. All labor and workmanship is warranted for two years per the Registrar of Contractors.

## **ENERGY EFFICIENCY**

The city wishes to make every effort to provide energy efficient features in each rehabilitated home. Energy efficiency measures are incorporated in all projects as required by the Arizona Department of Housing and the Arizona Governor's Office of Energy Policy Weatherization Standards. The most recent weatherization requirements can be found at <http://www.azhousing.gov/ShowPage.aspx?ID=453&CID=16>.

A pre and post Energy Audit will be completed by a certified Contractor through the Building Performance Institute. ([www.azhomeperformance.com](http://www.azhomeperformance.com) or [www.bpi.org](http://www.bpi.org) ) The Audit shall comprise of the inspection of the home and the input of observations and measurements into the necessary software to produce a report with energy efficiency recommendations. The report shall be provided to the homeowner and city.

The inspection shall include:

- 1) Pressure Diagnostics;
- 2) Insulation performance/effectiveness;
- 3) Heating, ventilation and air conditioning performance and air flow;
- 4) Air duct leakage and restrictions;
- 5) Construction integrity issues;
- 6) Indoor Air Quality (pollutants and infiltration);
- 7) Hot Spots in the ceilings and other areas.

Tests and tools that will be used include but may not be limited to:

- 1) Pressure gauge;
- 2) Blower door;

- 3) Duct blaster;
- 4) Zonal test
- 5) Pressure pan

The results of the inspection will assist with the completion of the project scope for which a qualified contractor shall be procured. The audit will provide energy efficiency improvements in order to obtain a Cost Saving to Investment Ratio (SIR) of at least 1.

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## **HAZARDOUS MATERIALS**

### **Asbestos**

- 1) Materials containing asbestos (ACM) that are to be removed as a condition of contract shall be removed and disposed of in a proper and safe manner by a certified asbestos abatement contractor or in accordance with locally-approved disposal standards. All required permits through Pinal County Environmental Health must be obtained.
- 2) Asbestos containing material must be dealt with in the most practicable and safe manner possible.
- 3) Exposed floor mastic containing asbestos must be encapsulated or removed in those areas where carpet is being installed.
- 4) Unsound tile containing asbestos must be removed prior to installation of a new layer of resilient flooring.
- 5) No asbestos containing materials shall be used for repair, replacement or new installation.

## **Lead-Based Paint**

- 1) Every unit constructed before 1978 which is or may become occupied by children under the age of seven must be tested for the presence of lead (exceeding Federal Standards) in paint. The city will contract with a certified firm to perform this test and may include abatement in the project scope.
- 2) Lead based paint must be abated in accordance with federal regulations.
- 3) All wood trim, doors, doorjamb, frames that have lead-based paint must be removed and replaced.
- 4) Lead paint on walls or ceilings that is peeling, flaking, or otherwise deteriorated or that will be disturbed as a result of rehabilitation shall be completely covered with, at a minimum, 1/4" drywall, taped, sanded, primed, and painted.

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## **ROOF**

### **General**

- 1) Roof framing shall be capable of supporting roof and equipment loads without sagging. Roofs with sags, swales, ridges, or uneven pitch shall be inspected and have deficiencies corrected.
- 2) All roofs shall be free of leaks.
- 3) Existing roofs must have an estimated life expectancy of at least 3 (three) years after repairs in order to be considered repairable. Roofs with less than a 3 (three) year life expectancy shall be replaced.

- 4) Repairs shall be done only when the cost for repairs is estimated to be less than the cost of a new roof.
- 5) Roof installations shall have all previous roofing and underlay removed and substrate thoroughly inspected and repaired prior to installation of new system. If the roof system is structurally sound, additional shingles may be installed over existing shingles if not more than one layer is currently installed.
- 6) Every roof must be installed in accordance with manufacturer's specifications.
- 7) Roofs shall have a positive slope that provides good drainage. Minor ponding is acceptable if pooling of water less is than 1/2" in depth, less than 1/3 the span of the roof or capable of drying in less than 48 hours after the last addition of water.
- 8) Roofs draining onto others in such a way that excessive wear results shall have protection provided or the drainage rerouted.
- 9) Roof drains must be low enough to prevent excessive ponding and made of materials that are impervious to water. Drains shall be constructed in such a way that they do not drain down the wall of the structure.

### **Flashing**

- 1) Roof penetrations must be properly flashed and sealed.
- 2) Cracks forming around the seals of roof penetrations shall be resealed.
- 3) Seals made solely with mortar, plastic roof cement, or other materials that crack or shrink are not acceptable.
- 4) Roof flashing must be properly installed, in good condition, and must serve the purpose for which it was intended. Flashing that is loose, improperly sealed,

heavily corroded, or damaged shall be repaired or replaced.

### **Gutters**

- 1) Where appropriate, new roofs shall be equipped with gutter and downspout assemblies.
- 2) Newly installed gutter shall be equipped with the appropriate hangers and be designed to support the weight and conditions of the local area.
- 3) All existing and new gutters should be equipped with downspouts, bottom elbows, extensions, splash/diverter blocks, and other measures necessary to carry the water away from the dwelling.

### **Built-up Roofs**

- 1) Built-up roofs shall have an elastomeric aluminized or gravel coating. Where a gravel roof is being replaced, a three-ply built-up system with elastomeric coating or other suitable, approved system shall be provided.
- 2) Roof coatings shall be in good condition and consist of compatible materials.
- 3) Excessive peeling, bubbling, chipping, sloughing or mechanical damage shall be repaired.
- 4) Gravel roofs shall have gravel present in sufficient quantity and in proper distribution.
- 5) Roofing membranes shall consist of at least 3 layers. Cap-sheet exposures of more than 18" on roofs without a mineral coating (felt roofs) shall not be acceptable unless a core sample can be shown to have at least 3 layers. The roofing materials must be well adhered to the decking, and each course shall be solid mopped at the laps. Cold

process adhesive is not acceptable for roofs with a slope of less than 2 1/2:12

- 6) The roof shall be free of fissures, cracks, lifting seams, excessive bubbles (more than 5% of the roof area) or excessive alligating in coatings or asphalt flood coats.

### **Rolled Roofs**

- 1) Cold-application rolled roofing must have a slope of 2:12 or greater.
- 2) Rolled roofing that is applied without hot tar shall be fastened according to manufacturer's specifications.
- 3) New installations and repairs shall have fasteners spaced no more than 3" along the seams and laps.
- 4) Loose mineral surfacing, bare spots, wear, excessive wrinkles, loose seams, loose laps, etc. are indications of age and shall be cause for repair or replacement.
- 5) Rolled rubber roofing is recommended for flat patio roofs.

### **Foam Roofs**

- 1) Foam roofs must have a slope of 2:12 or greater, and have a nominal 1" thickness. Nominal 1" means at least 1" thick with occasional 7/8" measurements acceptable. Ponding of 1/4" or more, or ponding covering more than 5 square feet is not acceptable.
- 2) Foam roofs must have an elastomeric coating in near perfect condition. Any detectable break in the coating surface must be repaired. Coatings thought to be more than 1 year old shall be recoated.
- 3) Foam roofs must be well adhered to the substrate. Any detectable break in the bond shall be cause for repair. Roofs with poor bonding in areas larger than 3 square

feet shall be replaced. Humps, bubbles, ripples and voids are signs of improper application and may be cause for replacement.

- 4) In cases where a foam roof must be replaced, a different acceptable roofing system shall be installed unless a determination is made that the insulating qualities of a foam roof outweigh the associated maintenance costs.

### **Shingle Roofs**

- 1) All newly-installed shingle roofs with a slope of 2:12 to 4:12 shall have double underlayment.
- 2) Existing shingle roofs with slopes between 2:12 and 3:12 must be carefully examined for leaks or other signs of failure.
- 3) Shingles shall be installed with proper exposure. Roofs with more than 1/4" of the untabbed portion of the shingles exposed, or not installed in compliance with manufacturer's specifications shall not be acceptable.
- 4) Roofs with excessive bird's mouths, lumps, breaks, or tears shall be repaired or replaced.
- 5) Fasteners shall be properly installed. Each shingle shall be fastened according to manufacturer's specifications. Staples cannot be used to lap from one shingle to another, as a substitute for stapling both ends individually. In those cases where it is determined that the roof is improperly fastened, the roof shall be replaced or repaired, as appropriate.
- 6) Existing shingle roof surfaces shall have substantially all of the original mineral surface and be well adhered both at the tabs and in the grooves. Loose mineral surface, sparsely covered surfaces, curling, cupping, breakage, or brittleness are cause for replacement or repair.

- 7) Light shades recommended.

### **Wood Shake**

- 1) The use of wooden roofing materials in roof replacement or new construction is prohibited.
- 2) Existing wood shake roofs must have a slope at least 3:12.
- 3) Wood shake roofs must be in good condition or shall be replaced.
- 4) Underlayment and interlayment must be present and in good condition.
- 5) Splitting, breaking, rotting or loose shakes, or worn, sloughing, or cracked underlayments and interlayments should be weighed in decisions about repair and reroofing. If such conditions are prevalent, the roof shall be replaced with another type of material.

### **Tile Roofs**

- 1) Tile roofs that fail shall be replaced with another tile roof only when it is determined the feature is in keeping with improvements of surrounding standard projects.
- 2) Tile roofs in need of replacement shall be replaced with a suitable and more economical material when replacement with another tile roof is not in keeping with improvements of surrounding standard projects.
- 3) Repairs shall be done only when the cost of repairs is less than the cost of a new shingle roof and the planned repairs are expected to make the roof last at least another 5 (five) years.
- 4) Tile roofs shall have a minimum slope of 3:12 and be installed over solid decking.
- 5) Spaced slats are not acceptable unless installed over solid decking.



- 6) Tiles shall be in good condition.
- 7) Tiles shall be securely fastened in place unless specified otherwise by the manufacturer. Slipping, loose, or missing tiles shall be replaced. Tiles cracked all the way through, tiles with a badly weathered surface, or tiles with chips or breaks larger than 2" in diameter shall be replaced. Roofing tiles shall have a head lap of not less than 3" unless the tiles are keyed to lock together with less head lap.
- 8) Leaking ceramic or concrete tile roofs must be inspected to insure they have an underlayment. The underlayment shall be a minimum of 30-lb. felt and in good condition. Worn, flaking, sloughing, tearing or cracking of underlayment shall be cause for roof replacement or repair.

### **Metal Roofs**

- 1) Metal roofs shall be of 26 gauge (Galvalume) or 29 gauge (galvanized).
- 2) Local codes must verify minimum required gauge.
- 3) Metal roofs must have a slope of 3:12 or greater.
- 4) Metal roofs must be properly aligned over uniform substructure to avoid panel distortion.
- 5) A moisture barrier shall be installed under new panels.
- 6) New installations must be made with galvanized nails with neoprene washers.
- 7) All rib lap joints must be sealed their entire length with a bead of caulking.

### **Repair/Replacement Requirements**

- 1) Roof installations shall have all previous roofing and underlay removed and substrate thoroughly inspected and repaired prior to installation of new system.
- 2) Whenever a roof replacement is scoped that involves the removal of the entire decking, the new decking must have a factory installed radiant barrier surface.
- 3) Sheathing should be ½" OSB plywood when not exposed and CDX plywood when exposed under the roofing material.
- 4) When replacing shingles, special consideration should be given to 'high reflectivity and high emissivity shingles'. Shingles shall be #15 felt and 30 year dimensional shingles.
- 5) All powered attic ventilation fans must be removed, including solar powered and whirly birds.
- 6) Drains shall be constructed in such a way that they do not drain down the wall of the structure.
- 7) Replace fascia if rotted, damaged, or missing. The exterior trim shall be 2" X 6" fascia painted with exterior latex paint. The paint shall be Low VOC paint.
- 8) All new roofs must have a properly installed metal edge on the roof line.
- 9) A roof shall be pre manufactured 24" O.C. trusses with 24" overhangs all around.
- 10) All existing and new gutters should be equipped with downspouts, bottom elbows, extensions, splash/diverter blocks, and other measures necessary to carry the water away from the dwelling.

## Manufactured homes

- 1) Repair shall require that elastomeric coating be placed on mobile homes roofs.
- 2) Manufactured home roof replacements where repair is not feasible shall include the removal of existing cooler/vents for the installation of an insulated aluminum roof including: Installation of perimeter frame with 2 X 2. Fill with 1 ¾" expanded rigid polystyrene. Cover with .024 white aluminum roof cap. Add metal drip edge. Replace existing cooler/vents to original location (s).

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## **ELECTRICAL**

### **General**

- 1) If aluminum wiring is encountered and it has not been previously identified in the project scope. Contractor shall notify the city.
- 2) Electrical connections shall be made in a proper and safe manner. Permanently wired electric water heaters shall be supplied by properly sized conductors installed within metallic flex conduit where exposed.
- 3) Exposed electrical cable serving the furnace shall be protected with flexible conduit and properly made connections. Termination of electrical supply conductors and conduit shall be by means of approved fittings.
- 4) Exposed cables or wires shall be replaced or protected to meet code.
- 5) Wiring shall be free of damaged insulation or damaged conductors. Fraying, cracking, charring, or brittle insulation on a cable shall be cause for replacement.
- 6) Those portions of any system not exhibiting good workmanship shall be properly terminated and/or replaced in compliance with current code.
- 7) All electrical circuiting shall be of proper design and suitable for intended use, with over current protection suitable for conductor ampacity.

### **Service Entry and Equipment**

- 1) The size of the electrical service shall be adequate for the needs of the property after rehab completion and at a minimum meet National Electrical Code requirements. If an electrical service is inadequate in ampacity to meet the electrical demand, either the service shall be upgraded to meet the new demands, or the electrical demand shall be reduced, if practical.
- 2) Each electrical service shall be properly grounded in accordance with the National Electrical Code.
- 3) Means of disconnects must be provided for fixed electrical space heating units. Provisions for disconnect shall be in accordance with National Electrical Code.
- 4) Each electrical panel shall be, at a minimum, adequately sized for the service. All services and distribution centers shall be safe, and free of excessive corrosion, debris, holes, uncapped knockouts, etc. Exterior panelboards enclosures shall be of UL listed, rain-tight design. The panel shall be soundly and properly attached to the wall. Damaged, outdated, unsafe or otherwise unsatisfactory panels shall be replaced with panels that comply with the current code.
- 5) Each electrical panel shall have a main disconnect.
- 6) All circuiting shall have overload protection in compliance with current code.

### **Branch Circuiting**

- 1) An adequate number of circuits to provide safe, functional distribution are required. Additions of circuits to property shall comply with current code.
- 2) Those properties having knob and tube wiring shall be rewired to comply with current code with the guidelines of the U.S. Consumer Product Home Safety Commission. If replacement is more cost effective than repair, then the home shall be rewired.

### **Evaporative Coolers**

- 1) All Evaporative Coolers shall be removed and replaced with a central heating and air conditioning unit.

### **General Lighting and Outlets**

- 1) Bathroom shall have a light and one convenience outlet.
- 2) Each bedroom shall have at least 2 working duplex outlets, properly installed and safe for use.
- 3) Light fixtures shall have correct and proper fitting covers or diffusers.
- 4) Where practical, sufficient exterior lighting shall be provided.
- 5) The kitchen shall have at least two 110-volt duplex outlets.
- 6) Appliances requiring a 220-volt shall be connected to a 220-volt outlet.

### **Ground Fault Circuit Interruption**

- 1) At a minimum, ground fault circuit interrupters shall be installed in all bathrooms. When updating of electrical devices is required. GFCI's shall be installed where

required in kitchens, bathrooms, garages/carports, and exterior outlets.

- 2) Receptacles located at counter top level within 6 feet of the kitchen sink shall have ground fault interrupter protection.
- 3) Each habitable structure with sleeping quarters shall have a smoke alarm system installed in accordance with local code.
- 4) See National Electrical Code for additional requirements.

### **Low Voltage and Miscellaneous Systems**

- 1) Existing television cable and antenna cable must be in good condition. Damaged cable may be repaired or removed.
- 2) Existing security systems must be in good condition and operable for the intended use. Nonfunctional systems may be removed or replaced if this is determined to be a feature in keeping with improvements of surrounding standard projects.

### **Repair/Replacement Requirements**

Following is a suggested list of items that would be required for all units, but may not be all inclusive of the scope of work that will be requested to be done:

- 1) Visually inspect the service equipment, feeders and panel boards as to condition and capacity to handle the load.
- 2) Assure proper service grounding.
- 3) Ensure that properly sized overcurrent devices are installed in all instances upon completion of work.
- 4) Ensure all outlets work, repair as needed.

- 5) Replace broken and/or defective receptacles and switches.
- 6) Ensure that appropriate covers are installed around all receptacles and switches.
- 7) Ensure that at least two receptacle outlets exist in every living room, family room, dining room, den, bedroom or similar room.
- 8) Ensure that at least one ground-fault protected receptacle exists in every bathroom.
- 9) Ensure that all receptacles within 6' of a kitchen sink are provided with ground-fault protection.
- 10) Install "hard wired" 110v U.L. Listed smoke detectors interconnected in each bedroom with a battery backup and positioned throughout home per code.
- 11) Check range, dryer, and water heater wiring for code compliance.
- 12) Ensure that at least one wall-switch controlled lighting outlet is installed in every habitable room; in bathrooms, hallways, stairways, attached garages and detached garages with electric power; and at outdoor entrances and exits. In other than kitchens and bathrooms, a switch controlled receptacle may serve as the lighting outlet.
- 13) Report any electrical related health, safety or code violations that are found.
- 14) Light fixtures may be included.
- 15) Install jelly jar type light fixture at all exterior doors.
- 16) Exterior outlets should be covered and protected from water infiltration with a bubble cover
- 17) Light bulbs used for a minimum of 2 hours per day or more (limit 10) shall be replaced with Energy Star Rated CFL light bulbs with equivalent or better Lumen output.
- 18) Average cost without new wiring or service = \$1,000

#### New Electrical Service Panel

- 1) Although 100 amp is required, a new 200 amp service may be necessary. The new service should include but is not limited to: a new breaker box and distribution breakers per code. Include separate circuits to all kitchen areas, laundry circuit, bathroom and AFCI circuits for bedroom outlets. Remove all unused interior and exterior tubing, visible wiring, and old exterior enclosures and devices. Required junction boxes shall remain accessible but covered with a trim style cover in a workman like manner as code permits. Repair all surfaces on interior and exterior affected by the change to match existing surfaces. Label all breakers clearly. Average \$3,000 = 1000 s.f. home including items 1-17 above.

#### Complete rewiring of electrical system

- 1) Abandon wiring and completely rewire structure with new three wire grounded system. Remove old wiring if required by code. Location of existing switches, outlets, and light fixtures to remain, unless not to code. New wiring to allow for all fixtures to be controlled by switches (to be included) and a minimum of three outlets in all rooms except baths, service areas, and non-habitable rooms. GFIs in all areas required by code including minimum of kitchen (2), bath (1) and service area (1). Work to include replacement of switches, outlets, covers, required GFI outlets and 110v U.L. Listed smoke detectors interconnected in each bedroom with a battery backup. Remove old boxes, visible wiring and tubing. Install new doorbell and chimes including wiring and transformer. Repair all surfaces affected by the change to match

existing. All work to be to code. Average \$2,200 = 1500 s.f. home including items 1-17 above.

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## **PLUMBING**

### **General**

- 1) New or replacement piping shall be of approved materials.
- 2) Piping shall be properly installed and supported.
- 3) No plastic piping shall be exposed to sunlight unless it is approved by listing for such installation.
- 4) Each property equipped with facilities for a clothes washer shall have both hot and cold water supplied and drain shall be connected to an approved waste system.
- 5) Faucets, drains, valves, piping and supply lines shall be leak-free, functionally adequate and in proper operating condition.
- 6) Plumbing repairs requiring installation of new fixtures shall be done with water conserving devices including low flow faucets, low flow showerheads and low flow toilets, where appropriate.

### **Domestic Water Supply**

- 1) Each home shall be connected to a potable water source.
- 2) No unit shall have lead water-supply piping. The use of lead solder shall not be allowed for repairs or replacements.
- 3) Multi residential buildings must be provided with backflow prevention devices on the water service, according to applicable code. All exterior hose bibs shall be provided with approved anti-siphon devices.

### **Drain, Waste, Vent**

- 1) Gray water systems are not acceptable unless inspected and approved by the local building authority.
- 2) Waste lines shall be made of approved materials.
- 3) The waste disposal system shall be connected to an approved public or private disposal system capable of handling the occupant load of the unit(s).
- 4) The system shall be free of leaks, damaged, or corroded pipe. Waste lines shall be free of blockage or gurgling.
- 5) Existing waste systems must be properly vented, have a functional trap, and leak free connections. Vents considered to be inadequate or unsafe shall be replaced or repaired. Plumbing vents within 10' of a cooler must be at least 1' taller than the cooler.
- 6) A determination shall be made regarding the need for additional clean-outs for the waste disposal system.
- 7) Waste disposal systems shall be free of health hazards or unsafe conditions.
- 8) Connection to the sewer system and abandonment of the septic tank can be completed with CDBG funds.

### **Gas**

- 1) All repair and replacement of gas installations shall be with proper materials and in accordance with local codes.
- 2) The main gas shut-off shall be in good operating condition and free of leaks.
- 3) Flexible gas supply connections shall not exceed 3' in length.
- 4) Flexible gas supply connections shall be appropriately installed.

## **Fixtures**

- 1) Individual sinks, toilets, clothes washers, and other plumbing devices shall have individual water-supply shut-offs.
- 2) All kitchens shall have a sink and faucet, in proper operating condition with a sink trap and hot and cold running water.
- 3) Every bathroom shall be in good operating condition with water supply.
- 4) Faucets shall be free of leaks and drips.
- 5) Sinks shall be free of excessive cracking, chipping or other damage that makes cleaning difficult or hazardous.
- 6) The plumbing shall be free of leaks in supply lines and sewer connections.
- 7) Supply lines and waste lines shall be in good condition.
- 8) Each bathroom shall have a water closet in proper operating condition and connected to an approved public or private sewer system.
- 9) Water closets must be in proper operating condition and free of cracks in the bowl, tank or tank lid.
- 10) Each water closet shall have a washable seat, and be free of leaks in either the water supply or the sewer connections.
- 11) Wall-mounted water closets shall be properly installed and secured.
- 12) Installation of high efficiency water saving plumbing fixtures required.

## **Valves**

- 1) Water supplies shall have individual shut-offs, where practical.
- 2) An exterior shut off valve is required.

- 3) Loose or broken handles and levers shall be repaired or replaced.
- 4) Flexible gas supply connections shall be provided with an approved gas cock.

## **Water Heaters**

- 1) Every unit shall be supplied with hot water at a minimum temperature of 120 degrees.
- 2) Gas water heaters shall be properly vented.
- 3) If the water heater unit is located outside, the unit must be protected from the weather and listed for an exterior location.
- 4) Each water heater shall have a properly installed, approved temperature/ pressure relief valve with a 3/4" drain line installed to comply with current code.
- 5) The water heater shall be rigid and properly supported at the proper elevation.
- 6) Flexible gas supplies shall not exceed 3' and all plumbing fittings must be free of leaks.
- 7) Solar water heating devices shall be considered on a case by case basis.

## **Repair/Replacement Requirements**

- 1) When replacing an electric water heater in a garage with a home occupancy of no less than 4 people, a Hybrid Heat Pump water heater must be used or Where practical, replacement water heaters must be upgraded to meet or exceed minimum energy efficiency rating of 80. Each water heater shall have a properly installed, approved temperature/ pressure relief valve with a 3/4" drain line installed to comply with current code. Installation of water heaters should include all

plumbing connections and shall be plumb and solid.  
Install strapping and insulation.

- 2) Low flow faucet aerators and shower heads (1.5GPM showerhead) must be installed in all faucets and showers. Replacement fixtures shall all be high efficiency water saving devices. Fixtures may be Moen, Delta, American Standard, or Kohler. Stainless steel only, minimum \$50.

#### Complete re-plumb

- 1) The installation of new water lines should include the removal and replacement of existing hot and cold lines with new copper hot and cold supply lines to replace existing fixtures, inclusive of all concealed runs-both vertical and horizontal, supports, diverters, unions, elbows, valves, and associated connections. All wall/ceiling surfaces affected shall be repaired to match existing. All work to be completed per city code. Average \$3,000 = 1500 s.f.

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## **HVAC SYSTEMS**

### **General**

- 1) Air conditioning units shall be capable of cooling each room to 30 degrees below the outside temperature.
- 2) Filters shall be secure, clean and appropriate for unit.
- 3) Heat pumps shall perform to the same standards as refrigeration and heating units.
- 4) HVAC units and evaporative coolers shall be free of corrosion and water damage.

- 5) Equipment housings and access panels must be intact and properly secured/installed. No exposed electrical connections, belts, pulleys, or blowers shall be allowed.

### **Heating**

- 1) Every furnace shall be cleaned, serviced, and certified to be safe, operable and adequate and provide a room temperature required by code.
- 2) Each forced air unit shall have a filter.
- 3) Each unit shall be provided with a programmable thermostat which operates both heating and cooling.
- 4) Air handlers shall be quiet, well balanced and clean.
- 5) The heat exchanger shall be in good condition. Excessive corrosion, soot, chemical deposits, cracks, back-draft or burners or other evidence of heat exchanger failure may be cause for replacing the unit.
- 6) All heating elements shall all be connected to a power source and functioning properly.
- 7) Where practical, wall furnaces, which are the main source of heat for the unit, shall be replaced with central heating equipment.
- 8) A room heater may be used, provided it is used as supplement to central heating, such as in a room addition. Room heaters shall be listed appliances, installed properly and sufficiently sized enough to heat the room in which they are installed.
- 9) Unvented gas heaters, except those designed to be unvented, are not acceptable and shall be replaced with a listed appliance.
- 10) Solar heating systems shall be considered on a case by case basis.

## **Ventilation**

- 1) Ventilation for each bathroom shall comply with local codes.
- 2) Ventilation devices not in good operating condition shall be repaired or replaced.
- 3) Exhaust hoods or fans and filters must be in sanitary condition.

## **Air Conditioning**

- 1) Refrigeration units shall be serviced and certified in good working condition by a licensed mechanical contractor qualified as an air conditioning technician.
- 2) Refrigeration units under the drip line of roofs, or under rain gutters or canals shall be moved or protected from excessive run-off on the unit.
- 3) Condensate drain lines shall drain away from the roof.
- 4) Heat exchange fins shall be in good condition. The compressor shall be free of excessive debris. The unit shall be free of excess debris, vegetation or any obstruction that prevents the free circulation of air around the unit.

## **Evaporative Coolers**

- 1) All evaporative coolers shall be removed and replaced with a central heating and air conditioning unit.
- 2) All duct work shall be removed and replaced with the appropriate duct work for the new systems.
- 3) The existing duct work shall not be reused with the new system.

## **Combustion Air**

- 1) Gas furnaces and water heaters shall have sufficient combustion air. In no case shall a proper volume of combustion air be dependent on a door, a window, or any other opening which is prepared for easy closing.
- 2) Newly installed or repaired gas furnaces and water heaters dependent on infiltration for combustion air, shall have available at least 50 cubic feet of room volume per 1000 btu/hour of aggregate input rating.
- 3) Furnaces or water heaters enclosed in spaces too small to provide combustion air by infiltration shall be provided with air in accordance with the current code.
- 4) Furnace enclosures shall be enclosed in a manner that prevents any intermingling of combustion air with the recirculating air. Furnace enclosure doors, which open inside the building, shall be free of gaps.
- 5) The furnace shall be properly caulked to its floor or platform.
- 6) Each furnace enclosure shall be free of damaged or incomplete walls, floor, or ceiling, which in any way allow communication of air from the enclosure to the home.

## **Repair/Replacement Requirements**

### **Room Pressure Balancing**

- 1) No room in the home (including CAZ) shall exceed  $\pm 3$  Pa of pressure. In the case where passive return or a live return system must be installed to correct these issues, the goal should be to accomplish as close to a 0.0 Pa of pressure as possible. Consider the installation of a jump duct or high low duct. No transfer grilles will be accepted.



### Air Barrier/Thermal Barrier

- 1) The whole house leakage should not exceed .35 ACH.
- 2) The Thermal Barrier must be installed in complete contact with an effective air barrier, and to IECC 2009 installation standards and levels specific to the climate zone the home is in as defined by IECC Climate map.

<http://energycode.pnl.gov/EnergyCodeReqs/?state=Arizona>  
[na](#).

- 3) Based upon the results of testing with an infrared camera, Dense Pack Wall Insulation (blown insulation) or spray foam insulation shall be used and should meet an R30 rating in the roof and R19 in the walls and under the floor (if applicable). Where practical, properties without insulation in the ceiling, or where the insulation in the ceiling has an R-value less than 11 shall have ceiling insulation added. All insulation shall have 100% contact with the air barrier and be installed with no gaps, voids, air intrusions, compressions, or misalignments.

#### Climate Zone 2

Ceiling R-value	30
Wood Frame Wall R-value	13
Mass Wall R-value	4/6
Floor R-value	13
Slab R-value, depth	0
Crawlspace Wall R-value	0
Fenestration U-factor	.65
Skylight U-factor	.75
Glazed fenestration SHGC	.3

<http://energycode.pnl.gov/EnergyCodeReqs/?state=Arizona>

### HVAC Static Pressure

- 1) Static pressure tests must be taken after all work is complete and the pressures must not exceed manufacturer's specifications.
- 2) AC systems should all be verified to have proper charge and airflow by a licensed AC technician.

### Air Conditioning

- 1) A Manual J must be completed and followed reflecting any of these listed measures that will be done to that home and the report submitted to the City for any replacement system (1 ton/400 s.f. block homes or 1 ton/550 s.f. of stick built home).
- 2) Replacement HVAC units shall be a minimum SEER rating 14 on all high efficiency Energy Star HVAC units including programmable thermostats per IECC 2009 edition standards. Unit shall be hooked to existing linesets and duct work unless otherwise specified. If replacing a split system, replacement must include the condenser and air handler. Furnace may also be required to be replaced. Replacement of unit shall also include but is not limited to the installation of 1) a programmable thermostat, 2) fused electrical disconnect at unit, 3) ensure the service panel has the appropriate designated breaker and 4) necessary electrical wiring for disconnect and panel. For split systems include 1) 220v outlet and 2) drain pan. An upgraded service panel may be required if the existing panel is not sufficient. See duct work for requirements. If damage is done to sheetrock, this must be repaired to its original state to include tape, texturing, and painting to match existing. Acceptable products are York, Goodman, Trane or Day & Night. Max value \$7,000.

- 3) All replacement split system units should include an air handler and condensor.
- 4) Consider the installation of mini-splits in place of a standard system which requires duct work.

#### Duct Work

- 1) In the case of a comprehensive duct System replacement in conjunction with an AC replacement, a Manual D report must be followed and a copy of the report should be given to the City.
- 2) Replacement ductwork shall be 26 gauge metal ridged, with R8 flex from the main line to the drop (roof to trunk and return) and service all rooms with a register.
- 3) All accessible joints, seams and connections in the duct system must be sealed using a UL 181 approved duct mastic.
- 4) All Boot-Sheetrock gaps must be sealed.
- 5) All supply or return ducts on the roof that are exposed to direct sunlight must be painted with white elastomeric paint after they are sealed.

#### Ventilation

- 1) Ventilation must be installed to meet the ASHRAE 62.2-2010 standards.
  - a. **Passive air inlet.** This is a tube in the exterior wall with a flapper that lets in air. The least expensive option, but you need to drill through exterior wall and often time homeowners just stuff the tube with a sock to keep the air from leaking.
  - b. **Supply-only air.** This is a pipe with an automatic flow damper that allows fresh air to enter the return of the

system. Honeywell makes one found here:

<http://yourhome.honeywell.com/home/Products/Ventilation/Economy+Ventilation+System/>

This may run about \$500 to install. The air handler return might be hard to connect this to, but the contractors should be able to ultimately determine that. It has a control box that allows for automatic operation. Because new air is being introduced, the home would be slightly pressurized with this system, which would be good.

c. **Exhaust-only air.** These are fancy bathroom fans set for continuous operation. Homeowners must be told how to override and shut off the fan, but they really should never turn it off. These run about \$700 installed.

Panasonic makes a whole line of them, found here:

<http://shop.panasonic.com/shop/ventilation-systems-ceiling-insert-fans>

This fan would cause the house to be depressurized, meaning outside air would be sucked in as the stale air is exhausted by the fan. There are no gas appliances or garages where cars can build up CO, so this would not be a problem. This requires more ducting than the supply-only air option and the ducting can't be necked down from 4" to 3". New ducting must be installed if necessary.

d. **ERV/HRV.** This option is quite expensive at around \$2000 installed, but it is the most efficient system. This system both exhausts stale air and brings in fresh air. The air leaving and the air coming in pass through a heat exchanger, allowing up to 80% of the conditioned air energy to be recovered. This option needs filters to be replaced. Panasonic makes these too found here:

<http://shop.panasonic.com/shop/model/FV-04VE1>

These require the most ductwork installation.

#### CAZ Tests

- 1) If the home is occupied during the rehab process a CAZ test must be completed at the end of each day that work is done to the home.

#### Evaporative Coolers

- 1) Evaporative coolers are to be removed and all vents pulled. Cooler is to be disposed of in an approved manner. Remove and cap electrical. Cap cooler holes inside and out. Close and insulate all interior registers and reinstall existing registers or finish the surface to match existing adjacent surfaces. Any exposed holes on the interior that are to be covered must match existing finishes. Reskin roof with like product and material. Install new drip edge.

#### Furnace

- 1) Every furnace shall be cleaned, serviced, and certified to be safe, operable and adequate. Where practical, replacement furnaces must be upgraded to meet or exceed minimum energy efficiency rating of 80.

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## **STRUCTURAL**

### **General**

- 1) Damaged or weathered siding shall be repaired or replaced, as appropriate, to ensure structural integrity.

- 2) Excessive or prevalent broken stucco or stucco with cracks in excess of 3/16" shall be repaired.
- 3) Unstabilized adobe must be completely protected from weather by a layer of suitable material in keeping with neighboring structures.

### **Concrete**

- 1) Foundations and footings shall be sound.
- 2) Repairs at the direction of a structural engineer may be required.
- 3) Slabs shall be free of excessive cracking, movement and trip hazards.
- 4) Cracks or displacement of more than 1/4" in slabs shall be repaired.
- 5) Cracks that have shifted more than 1/4" shall be beveled, filled and the adjoining structural elements examined for weakness or failure.

### **Masonry**

- 1) Exterior and load-bearing masonry walls shall be in good condition.
- 2) Cracks passing through masonry units, cracks of more than 1/4" in width, cracks caused by lateral displacement of more than 1/4", or half moon cracks should be examined for structural weakness. Repairs may be required to be undertaken at the direction of a structural engineer.
- 3) Masonry fireplaces shall be in good repair if used as a primary heat source.
- 4) Hoods, walls, chimneys, caps, hearths, firebrick and all other structural portions of fireplace and chimney shall be

sound and free of excessive missing mortar, missing bricks or loose masonry.

### **Metals**

- 1) Grilles or louvers that cover ventilated openings provided for attic or sub-floor ventilation shall be removed and replaced if they are damaged and/or ineffective in protecting against entrance of rain and/or rodents or pests.
- 2) Damaged or weathered metal siding shall be repaired or replaced, as appropriate, to ensure structural integrity and weather-tightness.

### **Carpentry**

- 1) Bearing walls and structures with obvious deficiencies shall be repaired as is appropriate.
- 2) Exposed framing and wood construction shall be examined for structural soundness and good workmanship. Defects shall be corrected.

### **Repair/Replacement Requirements**

#### **Stucco**

- 1) The exterior walls shall consist of 3 or approved 1 coat stucco over 1" foam and an approved moisture barrier. Walls shall be constructed with 2" X 6" studs 16" O.C. The exterior of the home shall be painted with exterior Low VOC latex paint. A light color palette is recommended.

#### **Concrete**

- 1) Foundation shall include the footing, stem, and slab using 2500 PSI concrete.

## **SITE WORK**

### **Pest Control**

- 1) The building must be free of wood boring insects. If termite activity is detected, the entire building shall receive termite pesticide treatment. Where detectable, structural damage caused by wood boring insects must be repaired. Visible, excessive non-structural damage shall be repaired. Any conditions conducive to termite activity, such as wood-to-earth contact shall be corrected.
- 2) Each unit must be free of mice, roaches, rats, or other disease-carrying pests. If such pests are detected, extermination must be undertaken until the existing problem has been eliminated.

### **Walls and Fences**

- 1) Retaining walls must be in good condition.
- 2) Excessive cracking, bowing, leaning or heaving must be repaired.
- 3) Cracks and displacements of more than 1/4" must be repaired.
- 4) Walls which lean enough to make the center of the top course fall outside the middle 1/3 of the base must be replaced.
- 5) Retaining walls must have weep holes in sufficient number and size to relieve water trapped behind the wall.
- 6) Fences or masonry walls may be installed.
- 7) Existing fences should be in good repair.
- 8) Holes, broken pickets, torn chain-link fabric, missing top-rails, defective posts or supports, broken or missing

masonry units, wobbly gate posts, gates which don't open and close properly, etc. shall be repaired.

### **Siting of building(s)**

- 1) The site must allow water to drain away from the foundation and for water to be channeled around the building in a manner capable of draining away heavy rains.

### **Pedestrian Traffic**

- 1) Walks, driveways, and concrete or asphalt paved pads or parking areas must be free of trip hazards.
- 2) Cracks more than 1/2" in width or any crack that causes a trip hazard must be repaired.
- 3) Walkways and areas subject to pedestrian traffic shall be finished in such a manner as to minimize slip hazards when wet.

### **Accessory Buildings**

- 1) Accessory storage sheds in need of minor repair may be repaired.
- 2) Storage sheds in poor condition may be removed or replaced.
- 3) Storage sheds may be installed if this is a feature in keeping with improvements of surrounding standard projects.

### **Landscaping**

- 1) Installation of new irrigation and sprinkler systems is acceptable.
- 2) Dead trees or shrubs shall be removed.

- 3) Plants that are undermining any structure (i.e. walls, masonry fences, and slabs) or interfering with drainage shall be removed.
- 4) Plants blocking access to electrical panels, windows, doors, sidewalks, or walkways, or interfering with overhead electrical, telephone, or television cables shall be trimmed or removed.
- 5) Plants that are abrading the roof surface shall be trimmed.
- 6) Palm trees having build-up of dead palm fronds, may be trimmed or removed.
- 7) Plants, trees or shrubbery posing personal safety hazards must be trimmed or removed.
- 8) High water use landscaping may be removed or converted to drought tolerant landscaping if this is a feature in keeping with improvements of surrounding standard projects.

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## **KITCHEN**

### **Cooking Units**

- 1) Each unit must have a working stove.
- 2) Each unit must have sufficient space and facilities for the storage, preparation and serving of food.
- 3) Newly-installed gas stoves must have an approved automatic lighter for all the burners.
- 4) Existing gas stoves shall be free of leaks, clogged burner ports, missing parts or any defect that makes cleaning or repair of the stove difficult, or that makes part of the stove inoperable or unsafe.

- 5) Electric stoves shall have a power supply capable of providing power for all those heating elements the stove is capable of using at one time. Elements should be capable of producing red heat except in those cases where design prohibits this, as in the case of ceramic elements.
- 6) Electric stoves shall be connected to an approved electrical outlet.

### **Refrigerators**

- 1) The unit must have a working refrigerator.

### **Miscellaneous Appliances**

- 1) Garbage disposals and dishwashers may be replaced or provided if these features are in keeping with improvements or surrounding standard projects.

### **Repair/Replacement Requirements**

- 1) All appliances including furnaces, water heaters, refrigerators and stoves should be replaced with Energy Star approved appliances that meet or exceed minimum energy efficiency rating of 80.
- 2) Replacement refrigerators must be Energy Star rated with a minimum energy efficiency rating of 80. Top freezer and side by side products shall be used as replacements. Replacement must be like for like except for bottom freezer products. No ice makers shall be provided. Acceptable brands are GE, Kenmore, Frigidaire, and Whirlpool. Max value \$1,000.00.
- 3) Replacement stoves must be Energy Star rated with a minimum energy efficiency rating of 80. Replacement

must be like for like. Acceptable brands are GE, Kenmore, Frigidaire, and Whirlpool. Max value \$700.00.

- 4) Appliances 10 years or older shall be replaced, the homeowner shall not be allowed to keep/reuse the old appliance.

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## **FINISHES AND SURFACES**

### **General**

- 1) All surfaces, particularly those that can be damaged by water or direct sunlight, shall have a protective finish.
- 2) Paneling, wallpaper, mirror tiles, corkboards, etc. in good condition and not posing any form of hazard shall remain in place. Such wall coverings shall be replaced only at the sole cost of the owner.
- 3) Loose tiles, broken or missing grout, missing tiles, loose wall panels, delaminating surfaces, and joints without caulking or grout are not acceptable.

### **Paint**

- 1) Exterior paint shall be free of excessive peeling, checking, cracking, flaking, blistering or other defects.
- 2) All new wood shall be primed prior to painting.
- 3) Interior paint shall be in sound condition.
- 4) Paint that is damaged, difficult to clean, peeling, cracking, etc. shall be properly prepared and recoated.

### **Walls and Ceilings**

- 1) Walls and ceilings shall be in sound condition and free of hazardous defects.

- 2) Cracks in plaster or gypsum wall board surfaces 1/8" or wider shall be repaired.
- 3) Loose drywall, broken plaster, loose paneling, etc. shall be repaired.
- 4) Tape, texture and paint sheetrock to match adjacent surfaces.

### **Cabinetry**

- 1) All cabinets and vanities shall be in good condition and appropriately secured.
- 2) Cabinets, drawers, and doors shall be free of broken or dysfunctional hardware, holes, peeling, chipping, sloughing, or any other damage rendering them difficult to clean or otherwise unsanitary.

### **Countertops**

- 1) Counters shall have a surface that can be easily cleaned and impervious to repeated cleaning.
- 2) Counters shall be free of holes, gouges, burns, peeling, cracking or any condition making them absorbent.

### **Repair/Replacement Requirements**

#### **Paint**

- 1) Interior Paint – Clean and fill all holes and imperfections. Prime coat all bare surfaces. Apply two coats or full coverage of Low VOC interior semi-gloss latex paint.
- 2) Exterior Paint – Prepare and paint complete exterior body and trim. Caulk all intersections of body with windows, doors, and other dissimilar materials. Prime all bare surfaces with primer recommended for surface type. Exterior paint to be Low VOC first quality exterior semi-gloss latex. Light shades recommended.

#### **Sheetrock**

- 1) All interior drywall shall be 1/2" sheetrock, textured and painted with Low VOC interior semi-gloss paint.

#### **Cabinetry**

- 1) Cabinets should be models approved by the National Kitchen and Bath Assn. and labeled with the manufacturers name and FHA approval.

#### **Countertops**

- 1) Replacement countertops should be new pre-formed laminated plastic counter top with bullnose front and 4" backsplash at all adjacent walls. Top to be scribed to adjacent surfaces. Include end caps and caulking. Properly secure to base cabinets.

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## **FLOORING**

### **General**

- 1) Floor framing shall be capable of supporting existing dead load and anticipated live loads as defined by the UBC as appropriate for type of structure and class of occupancy. Swales, sags, and ridges that do not present a trip hazard or otherwise jeopardize the health and safety of the occupant(s) shall be repaired.
- 2) Flooring shall be in good, sanitary condition and free of any hazardous conditions.
- 3) Flooring in kitchens, bathrooms and laundry areas shall be impervious to water.

### **Resilient Flooring**

- 1) Resilient flooring with excessive gouges, breakage, bubbling, lifting, or shrinking shall be repaired or replaced.

### **Wood Flooring**

- 1) Wood floors shall be in sound condition and free of excessive damage from wood-boring insects.
- 2) Wood flooring with excessive gouges, breakage, lifting, curling, buckling, or shrinking shall be repaired or replaced with resilient flooring or carpet.

### **Carpet**

- 1) Carpet that is improperly attached, badly worn, torn, or soiled shall be replaced if the cost of repair is greater than the cost of replacement
- 2) Existing carpet shall be in clean and sanitary condition.
- 3) Carpet may be replaced with resilient flooring, where appropriate.

### **Ceramic Flooring**

- 1) Ceramic tile shall be repaired, when possible to match the existing tile.
- 2) Ceramic tile requiring replacement shall be replaced with resilient flooring or carpet unless ceramic tile is a feature in keeping with improvements of surrounding standard projects.

### **Repair/Replacement Requirements**

Replacement flooring may be carpet or resilient flooring. The city will not replace existing flooring with wood flooring. If

applicable, subfloor must be replaced with ¾" plywood. Flooring options include:

- 1) Sheet vinyl maximum \$3.00/s.f. including installation
- 2) Ceramic tile if ceramic tile currently exists. 4 X 4 max \$1.50 or 12 X 12 \$3.50/s.f. including installation
- 3) Carpeting – stain resistant residential carpeting with a minimum face weight of 32 OZ FHA approved grade texture style nylon carpeting, minimum \$13 s.y. Padding should be minimum 7/16", 8lb. including installation

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## **DOORS AND WINDOWS**

### **Doors**

- 1) Doors, frames, jambs and casings shall be in good condition and free of excessive scratches, gouges, chipping, peeling or other unsightly damage or wear, and in good working order.
- 2) Doors with holes too large to be repaired, delaminating skins, broken stiles or rails shall be replaced.
- 3) Gaps shall be sufficient to prevent rubbing and no larger than 1/4".
- 4) Entry doors to storage or auxiliary structures may be hollow-core.
- 5) Exterior doors shall have a properly working threshold and shoe or sweep to seal against infiltration.
- 6) Gaskets, seals, glazing compound, caulking, weather-stripping or other weather sealants at doors and windows shall be in good condition.
- 7) Open joints at windows, doors or other areas shall be caulked and sealed.



## Door Hardware

- 1) Door latches and locks shall operate freely.
- 2) Hinges shall have no free play.
- 3) The latch-set shall be in good working order.
- 4) Those doors with locksets shall be capable of being locked.

## Windows

- 1) Glass shall be free of open holes or movable cracks.
- 2) New glazing installed in locations defined as hazardous by the Uniform Building Code System 5406 (d) or by the Arizona Revised Statutes, shall be safety glass.
- 3) Windows that open to the outside should have a screen that is in good condition.
- 4) All habitable rooms shall have at least one window that can be opened and locked.
- 5) Gaskets, seals, glazing compound, caulking, weather-stripping or other weather sealants at doors and windows shall be in good condition.
- 6) Open joints at windows, doors or other areas shall be caulked and sealed.

## Security Doors and Screens

- 1) Existing security doors shall be in good working condition. Security doors not in good working condition shall be repaired or removed.
- 2) Latches and locks must work properly and conform to applicable codes.
- 3) Security bars shall not impede the full and proper operation of any window.

- 4) Security bars on windows located in sleeping rooms must be provided with latches and dimensioned so that current code egress requirements are met.
- 5) Security bars not meeting these requirements shall be modified to fully comply or else removed.

## Repair/Replacement Requirements

### Doors

- 1) All replacement or new exterior doors shall be an Energy Star rated pre-hung insulated metal door which includes a lockset single cylinder deadbolt. Exterior doors shall be protected from sunlight with a proper coating of varnish, paint or other suitable weather protection. Before adding the interior trim, apply an expanding foam caulking to seal the new door frame to the rough opening and threshold. Apply necessary threshold or weather stripping to prevent air infiltration.  
[http://www.energysavers.gov/your\\_home/windows\\_doors\\_skylights/index.cfm/mytopic=13620](http://www.energysavers.gov/your_home/windows_doors_skylights/index.cfm/mytopic=13620)  
[http://www.energysavers.gov/your\\_home/windows\\_doors\\_skylights/index.cfm/mytopic=13320](http://www.energysavers.gov/your_home/windows_doors_skylights/index.cfm/mytopic=13320)  
[http://www.energystar.gov/index.cfm?c=windows\\_doors\\_pr\\_anat\\_window](http://www.energystar.gov/index.cfm?c=windows_doors_pr_anat_window)
- 2) Sliders are to be replaced with Low E dual pane aluminum framed slider with lock. Apply necessary threshold or weather stripping to prevent air infiltration.
- 3) Interior doors and closets shall be hollow core doors and painted swiss coffee white with Low VOC interior semi-gloss paint. The closet doors shall be a 5' bi-pass 6-panel with track. The laundry room shall include a full bound door for the water heater closet.

- 4) Exterior doors shall have a properly working threshold and shoe or sweep to seal against infiltration.
- 5) Weather-stripping at doors shall be in good repair.
- 6) Open joints at doors shall be caulked and sealed.

## Windows

- 1) If a window is facing east, west, or south and is not covered by an awning or any other such item to eliminate sun exposure, a solar sunscreen shall be installed (80 rated).
- 2) Open joints at windows shall be caulked and sealed.
- 3) Gaskets, glazing compound, caulking, weather-stripping or other weather sealants shall be in good condition.
- 4) All replacement or new windows shall be dual pane low E Energy Star insulated vinyl framed slider window and shall be weatherproofed and stripped to prevent infiltration per IECC 2009 edition standards. The replacement window shall include the appropriate screen, locks, weather stripping, gaskets, seals, caulking, and trim. Bedroom windows shall meet building safety requirements for egress and be a minimum 4 X 4. Should an enlargement of the window be required, the interior and exterior of home shall be finished to match the existing which includes but is not limited to siding, brick work, stucco, sheetrock, texturing, painting, and other necessary work to return the home to the same look. Additionally, the necessary framing and supports must be present to support the new window. If a window is facing east, west, or south and is not covered by an awning or any other such item to eliminate sun exposure, a solar sunscreen shall be installed.

<http://www.lower-my-energybill.com/window-efficiency.html>

[http://www.energysavers.gov/your\\_home/windows\\_doors\\_skylights/index.cfm/mytopic=13380](http://www.energysavers.gov/your_home/windows_doors_skylights/index.cfm/mytopic=13380)

[http://www.energystar.gov/index.cfm?c=windows\\_doors\\_pr\\_anat\\_window](http://www.energystar.gov/index.cfm?c=windows_doors_pr_anat_window)

[http://www.energysavers.gov/your\\_home/windows\\_doors\\_skylights/index.cfm/mytopic=13320](http://www.energysavers.gov/your_home/windows_doors_skylights/index.cfm/mytopic=13320)

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## **BEDROOMS, BATHROOMS, AND LAUNDRY ROOMS**

### **Bedroom**

- 1) Bedrooms must be a minimum of 81 square feet in floor area with no dimension less than 7 feet.
- 2) Each bedroom must have its own separate access to a common room or area. A bedroom cannot be used as the only means of ingress and egress for another bedroom.
- 3) No more than two persons shall occupy any bedroom;
- 4) Each bedroom equipped with a closet must be equipped with a rod and shelf.
- 5) Every bedroom shall have at least one window that can be opened and securely locked. If bedroom is equipped with a door that opens and locks to exterior of house, window does not need to open.

### **Bathroom**

- 1) The bathroom must be located in a separate room with a privacy door that can be locked.

- 2) In units with more than one bedroom and only one bathroom, a bedroom cannot be used as the only means of ingress or egress to the bathroom.
- 3) Each unit must have at least one shower or tub with hot and cold running water.
- 4) The facilities must use an approved public or private waste disposal system.
- 5) Shower doors should be sanitary and in proper operating condition. If shower doors are not constructed of tempered glass, or those with open holes or cracks shall be removed and replaced with shower rod.
- 6) Shower and tub enclosures shall be in sanitary condition and properly sealed. Walls shall be sound, made of waterproof materials and sealed against water penetration at all joints.
- 7) Bathroom areas shall have at least one window that opens to the outside or adequate exhaust ventilation.
- 8) Each bathroom must have a towel rod, shower rod and toilet paper holder.

### **Fireplaces**

- 1) Existing fireplaces can be repaired.
- 2) Fireplace flues shall be free of debris, restrictions, holes, or excessive soot deposits. Flue liners, where present, shall be in good condition. Missing or broken liners shall be replaced.
- 3) Chimneys shall be in good repair and high enough to induce a draft that shall keep smoke from being allowed into the dwelling.
- 4) Fireplaces shall have freely operable dampers, except where gas logs are permanently installed. Gas log

installations shall have dampers permanently affixed in the open position.

- 5) The hearth shall comply with current code.

### **Repair/Replacement Requirements**

#### **Bathroom**

- 1) Replacement tubs should be white porcelain on steel or a two piece fiberglass shower/tub unit. Installation must include but is not limited to a bathtub shower/diverter valve, one piece construction with slip resistant bottom surface, connected to new or existing supply and drain lines including water seal, hardware, and finish. Damaged walls shall be finished to match the adjacent. Caulk walls to ensure a weather tight condition with matching silicone.
- 2) Replacement shower surrounds should be cultured marble surrounds with a fiberglass base (shower stalls only). Install green board on walls. Caulk walls to ensure a weather tight condition with matching silicone.
- 3) Replacement vanities due to water damage must be a new factory made and finished oak frame vanity with panel type door complete with a white manmade marble integral countertop and sink including two handled faucet. Install hot and cold water shut off valves at rear of cabinet. Scribe cabinet to fit the wall. Furnish and install all moldings to cover openings between vanity and wall. Caulk with paintable latex caulking. Cabinets should be models approved by the National Kitchen and Bath Assn. Labeled with manufacturers name and FHA approval.
- 4) Replacement toilet shall be a white high efficiency water saving toilet with a plastic seat. Plumbing should be included within 3 feet of fixture.

- 5) Low flow faucet aerators and shower heads (1.5GPM showerhead) must be installed in all faucets and showers. Replacement fixtures shall all be high efficiency water saving devices. Fixtures may be Moen, Delta, American Standard, or Kohler. Stainless steel only, minimum \$50.

#### Laundry Room

- 1) All laundry rooms, interior and exterior, should be to code. This may include but is not limited to the installation of sheetrock, tape and texture; installation of Energy Star exhaust fan (minimum 110 CFM); installation of laundry box with shut off valves; installation of vapor proof fixture; and ensure all electrical in not exposed. Dryers shall be vented to the outside using an approved pipe, sleeve, and vent cap. Washer should drain in approved public or private waste disposal system.

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## **CONTRIBUTIONS**

Contributions to the completion of this document are provided by:

- 1) Arizona Department of Housing
- 2) U.S. Department of Housing and Urban Development
- 3) Energy Star
- 4) U.S. Department of Energy
- 5) Arizona Governor's Office of Energy
- 6) City of Apache Junction Development Services
- 7) ADOH Owner Occupied Housing Rehabilitation Weatherization Standards
- 8) BPI/BA Standards

- 9) IECC 2009
- 10) ASHRAE 62.2-2010
- 11) Standardized Work Specification

For details on the building codes adopted by the City of Apache Junction, visit: <http://www.ajcity.net/index.aspx?nid=303>

## **HOME REPLACEMENT PROJECT SCOPE**

Contractors are required to submit their bids to include the cost for demolition, site preparation, and applicable waste disposal requirements. Contractors are asked to provide a cost per square foot that does not exceed \$90.00 for all work. This is a competitive process and the selected contractor will be considered based upon the lowest most responsive bid provided.

All submitted bids are required to follow the bidding requirements as identified on the city website at [www.ajcity.net/rehab](http://www.ajcity.net/rehab) under contractor participation; or <http://www.ajcity.net/index.aspx?NID=504>; and <http://www.ajcity.net/DocumentView.aspx?DID=2524>

An additional requirement for this project will require that a minimum of three references be provided where your firm or an individual within the firm who will be directly managing the project has managed the process for or has completed a complete demolition-rebuild. Character references are not acceptable nor are references for work done on additions or renovations. Unfavorable reference checks may result in a denied bid.

The City of Apache Junction will be utilizing drawings adapted from the City of Casa Grande Housing program. Although these drawings reflect the basics for the new structures to be built the City of Apache Junction's local building codes and policies trump any contradictory items printed on the Casa Grande plans.

The contractor is responsible for following all adopted city codes and for submitting plans, permits, and a site design/layout for each property to be replaced. For details on the city's policies regarding planning and building visit: <http://www.ajcity.net/index.aspx?NID=81>.

All aspects of this construction shall attempt to make the home as energy efficient as possible. For details on each component of the project please refer to the city's Housing Rehabilitation Program Construction Guidelines.

All fixtures to be installed in the home shall be contractor grade fixtures, unless otherwise specified by the city or as part of the energy efficiency requirements. Recommended products can be found in the city's Housing Rehabilitation Program Construction Guidelines.

Please note, unless otherwise specified the carport/garage and/or the laundry facilities shall be excluded from the plans and shall not be constructed.

#### Demolition and Site Preparation

1. Each home shall be removed and disposed of in an approved manner. If testing is determined necessary for safe disposal, the contractor shall be responsible for all

necessary costs. If possible, the existing home shall remain occupiable until the new home is built.

2. Clear the lot of all unused structures and concrete slabs and dispose of in an approved manner. The site must be properly graded and conform to the city's requirements for set-backs, drainage, and any other flood control requirements set forth by the city's Planning and Engineering Division.
3. The homeowner is responsible for packing all personal belongings prior to the contractor arranging for the items to be removed from the existing home prior to demolition and removal. It is the contractor's responsibility to work with the homeowner to provide a timeline for when items need to be packed.

#### Masonry and Concrete

1. Due to the location of the projects – driveways or walkways will not be installed, excluding the carport and walkway from carport to the entrance. The concrete pad for the home and carport shall be as identified in the plan.
2. Foundation – install footing, stem, and slab as shown on the plan and as per foundation details using 2500 PSI concrete.

#### Insulation

1. The insulation shall be R-19 batt in the walls and R-30 in the attic.

#### Exterior Stucco

1. The exterior walls shall consist of 3 or approved 1 coat stucco over 1" foam and an approved moisture barrier.

Walls shall be constructed with 2" X 6" studs 16" O.C. The exterior of the home shall be painted with exterior Low VOC latex paint, with the color to be selected by the homeowner. A light color palette is recommended.

#### Roofing

1. The roof shall be pre manufactured 24" O.C. trusses with 24" overhangs all around. The sheathing shall be ½" OSB plywood when not exposed and CDX plywood when exposed with #15 felt and 30 year dimensional shingles. The color, although selected by the homeowner shall be a light color to promote energy efficiency. The exterior trim shall be 2" X 6" fascia painted with exterior latex paint. The paint shall be Low VOC paint.
2. The home shall be equipped with the proper gutters and downspouts to promote water to be drawn away from the home.

#### Windows and Doors

1. Exterior doors shall be an Energy Star rated pre-hung insulated metal door which includes a lockset single cylinder deadbolt. The door shall be painted with a Low VOC exterior paint in a light color to be selected by the homeowner.
2. Windows shall be dual pane Low E Energy Star rated insulated vinyl framed slider and include a bug screen. All windows should be able to open and lock.
3. Interior doors and closets shall be hollow core doors and painted swiss coffee white with Low VOC interior semi-gloss paint. The closet doors shall be a 5' bi-pass 6-panel with track. The laundry room shall include a full bound door for the water heater closet.

#### Sheetrock

1. All interior drywall shall be ½" sheetrock with knockdown texture and painted with Low VOC interior semi-gloss paint. The interior shall be painted swiss coffee white.

#### Electrical

1. Proper inspection of the existing electrical service shall be completed in order to install a new 200 amp service. Please consult SRP for details and design requirements. The home should not include natural gas or propane, all appliances and services should be electric. If natural gas or propane currently exists on the property, they must be removed in an approved manner.
2. Install receptacles, a light and wall switch per code in each room. Include GFCI outlets in the bathroom(s), kitchen and appropriate exterior outlets. Install the necessary 220 v outlets for the appliances. Install the appropriate exterior lights per the city code. Install Energy Star exhaust fans in the bathroom(s), minimum 110 CFM.
3. Install the necessary phone and television jacks per the plan.
4. Install doorbell for the front door in the hallway.
5. Install light fixtures as identified in the plan. All fixtures shall be contractor grade and shall have CFL light bulbs installed for use. The allowance for each fixture is:
  - a) Standard fixtures - \$20.00
  - b) Two bulb fluorescent - \$35.00
  - c) Light and fan - \$50.00
6. Install U.L. listed smoke detectors wired in house circuitry in all bedrooms and hallways and approved locations as required by city code.

## HVAC

1. Each home shall have adequate heating and air conditioning.
2. Ductwork shall be 26 gauge metal ridged and service all rooms with a register. Seal all register vent openings between the metal duct and drywall.

## Plumbing

1. The new structure should be hooked to an approved private waste disposal system.
2. Each home shall be provided with a water heater that adequately provided hot water to the home. The water heater shall be an electric 40 gallon minimum or greater and shall include supply lines and T & P valve. Any new water heaters shall be electric and not solar powered.
3. Hot and cold water lines shall supply the laundry room.
4. Install new water line from meter to fixtures. Install an exterior shut off valve.
5. Replace the sewer line from the septic tank to all fixtures including tap.
6. All bathroom fixtures shall be white. The toilet shall be high efficiency water saving devices with a plastic seat cover. Faucets for the sink, shower, tub and the shower head shall be a high efficiency water saving device. The shower/tub shall be a one piece unit.
7. The kitchen sink shall be a double stainless steel sink with supply lines, trap and faucet.

## Paint

1. Low VOC paint is required to be used on all paintable surfaces. It is recommended that light shades be used on exterior surfaces. Exterior paint should be an exterior

latex paint. The interior should be an interior semi-gloss finish on all surfaces.

## Flooring

1. The approved flooring products for the replacement homes shall be minimum 32 OZ (\$10/yard) FHA approved carpet with pad (1/2") and FHA approved VCT tile, peel-n-stick is not acceptable. The carpeting shall be in the bedrooms and living/family rooms. The tile shall be placed in the kitchen, bath, entry, and any other high traffic areas approved by the homeowner. The homeowner shall select the color. Install the appropriate doorstops and thresholds.

## Cabinets and countertops

1. The kitchen shall include upper and lower cabinets. All cabinets shall be models approved by the National Kitchen and Bath Assn. and labeled with the manufacturers name and FHA approval.
2. The approved countertops for the replacement homes shall be:
  - a) Kitchen - laminate
  - b) Bath – marble integrated countertop with sink
3. Bathrooms shall include a tissue holder, towel bar, shower rod, and medicine cabinet with mirror. The cabinet shall be a 30" cabinet with a white marble integrated countertop with sink and backsplash, supply lines, trap and faucet. The medicine cabinet shall be 24" X 30" tri-view cabinet with oaktone finish.

#### Termite/pest control

1. The finished home shall be treated for termites with a minimum of a one year warranty and an option for the homeowner to renew. A certificate must be provided.

#### Other

1. When applicable, reuse the homeowners existing kitchen appliances. However if an appliance is gas, we will need to replace the appliance with and approved electric appliance. New appliances shall be white Energy Star rated appliances. Appliances required in the home are a refrigerator, stove, and dishwasher. Details on the approved products can be found in the city's Housing Rehabilitation Program Construction Guidelines.

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