Efficiency Kansas

Program Manual

Cuidelines for Participants, Partners, Energy Auditors, and Contractors

Kansas Corporation Commission | Kansas Energy Office Version 4 | August 27, 2010



EfficiencyKansas.com | 785.271.3185

ii

Table of Contents

Section 1: Efficiency Kansas Overview	1
1.1 Introduction	1
Future Updates	1
Objectives	1
American Recovery and Reinvestment Act of 2009 (ARRA)	1
Energy efficiency goals of the KCC	1
Two Tracks	2
1.2 Eligibility Requirements	2
Residential Structures	2
Owner-occupant	2
Rental units	3
Mobile homes	3
Small Commercial and Industrial Structures	3
Owner-occupant	3
Rental	3
1.3 Amount and Term of Financing	4
Section 2. Energy Auditors and Energy Audits	5
2.1 Auditor Requirements and Responsibilities	5
Auditor Training	5
Auditor Certification	5
Required insurance	8
Auditor General Provisions	8
Code of Ethics	8
Auditor Conduct and Continued Qualification	9
Software	10
2 2 Energy Audit Requirements	10
Customer interview	11
	11
Assessment of huilding envelope: Exterior	11
Assessment of building envelope. Exterior	14
Mechanical systems	16
Duct leakage	17
Moisture control	17
	1/

Unvented space heaters	17
Blower door/Air-tightness test	17
Inspecting mobile homes: Special considerations	18
State Historical Preservation Office Requirements	19
Project Financing	20
Davis-Bacon Act	21
2.3 Audit Report and Energy Conservation Plan	21
Energy Conservation Plan	21
Necessary repairs to existing infrastructure	22
Priority listing of energy-efficiency improvements	22
Mandatory minimums for equipment replacements	22
Cost-effectiveness of recommended improvements	23
Building Report	23
Permanence of recommended improvements	23
Non-approved improvements	23
Cost of each improvement	23
Projected savings	24
Monthly costs (utility track only)	24
Health and safety considerations	24
Audit expiration	25
Fuel switching (utility track only)	25
Liability	25
Mandatory Audit Information and Submittals	25
2.4 Bids for Recommended Improvements	26
Contractor Requirements	27
2.5 Post-retrofit Audit	27
2.6 Monitoring by the Kansas Energy Office	28
Section 2. Carilalizer for Contant	20
21 Clatting Standard	29
3.1 Getting Started	29
3.2 Arranging for Energy Audit	29
	29
Selecting an Auditor	29 20
3.5 Selecting Improvements and Soliciting Bids	5U 21
3.4 Submitting Energy Conservation Plan for Approval	31
3.5 Submitting Certificate of Project Completion	31

3.6 Repaying the Efficiency Kansas Loan	31
3.7 Maintenance of Equipment	32
3.8 Disclosure Requirements (Utility Track Only)	32
Owner-occupants	32
Rental properties	32
Landlords and tenants	32
3.9 Self-Performance and Do-it-Yourself Regulations	32
Risks to consider	32
Allowable work items	33
Work items requiring special consideration	34
Impact on auditors	34
Impact on partner lenders/utilities	34
Section 4: Guidelines for Utility Track	36
4.1 Utility Requirements and Responsibilities	36
Eligibility Screening	36
Definition of residential and commercial customers	36
Rental properties	36
Directing Customers to Energy Auditors	37
Facilitating Approval of Energy Conservation Plan & Customer Projects	37
Verifying Completion	37
Receiving Efficiency Kansas Funds from the KCC	38
Paying Contractors	38
Placing Charge on Bill	38
Term of the obligation	38
Program charge as a percentage of projected savings	38
Utility administrative fees	38
Kansas Energy Office administrative fees	39
Level payment plan option	39
Payment-in-full option	39
Repayment of funds to KCC	39
Option 1	39
Option 2	40
Revert to Owner	40
Disclosure and Notification Requirements	41

UCC filing	41
Additional public information and outreach	41
Prudent Procedures	41
4.2 KCC and Kansas Energy Office Responsibilities	42
Management and Oversight	42
Review and approval of Energy Conservation Plan	42
Field inspection	42
Payment to utilities	42
Maintaining online information	42
Tracking availability of Efficiency Kansas funds	42
4.3 Coordinating with Partner Utilities on Promotion	43
Branding / Co-branding	43
Section 5: Guidelines for Lender Track	44
5.1 Lender Requirements and Responsibilities	44
Eligible Lenders	44
Providing Program Information	44
Directing Customers to Qualified Energy Auditors	44
Establishing Borrower Creditworthiness	44
Submitting Energy Conservation Plan	45
Receiving Efficiency Kansas Funds	45
Making Loans to Customers	45
Submitting Certificate of Project Completion	45
Repayment of Funds to Treasurer's Office	46
Pledging Securities as Collateral	46
Reporting Requirements	46
5.2 Treasurer's Office Requirements and Responsibilities	46
General Management of Revolving Loan Fund	46
Establishing Eligibility of Partner Lenders	46
Releasing Funds to Lenders	46
Receiving Funds from Lenders	46
Reporting Requirements	47
Invoicing the KCC	47
5.3 KCC and Kansas Energy Office Responsibilities	47
Management and Oversight	47
Review and approval of Energy Conservation Plan	47

Field inspection	47
Maintaining online information	47
Tracking availability of Efficiency Kansas funds	47
Notifying Lenders and Treasurer's Office of Approval	48
Reimbursing Treasurer's Office for Administrative and Other	48
5.4 Coordinating with Partner Lenders on Promotion	48
Branding / Co-branding	48
Section 6: Guidelines for Contractors	49
6.1 Contractor Requirements and Responsibilities	49
Role of Contractors	49
Contractor Qualifications	49
Preparation of Bids	49
Building Permits and Local Codes	50
Implementation of Work	50
Payments to Contractors	50
Insurance Requirements	50
6.2 EPA Renovation, Repair and Painting (RRP) Regulations	50
Efficiency Kansas Material & Installation Standards Manual	50
6.3 Davis-Bacon and Related Acts	50
Applicability	51
Wage Rates and Worker Classifications	51
Fringe Benefits	51
Deductions	52
Certified Payroll Requirements	52
Weekly Payment and Overtime Pay	52
Retention of Payroll Records	52
Apprentices and Trainees	53
Display of Davis-Bacon Poster	53
Inclusion of 29 CFR 5.5 Clauses in Contracts	53
6.4 Checklist for Contractors	53
Checklist for Submitting a Bid	53
Checklist for Compliance with Davis-Bacon Requirements	54
Section 7: Glossary	55
Appendix 1: Customer Checklist	57

Appendix 2: Fuel Information Release Form	58
Appendix 3: Efficiency Kansas Energy Auditor Identification Form	59
Appendix 4: Notice of Disclosure	60
Appendix 5: Recommended Questions for Client Interview	61
Appendix 6: Sample Site Data Collection Form	62
Appendix 7: Unvented Heater Removal Agreement	63
Appendix 8: Mechanical Testing Forms	64
Efficiency Kansas Combination HVAC Test Record Form	
Form "F" Forced Air Units	65
Form "G" Gravity Units	67
Form "H" Mid/High Efficiency Furnace Jobsite	69
Form "S" Console Heater; Floor and Wall Furnaces	72
Form "W" Domestic Water Heaters	74
Form "M" Mobile Home Units	75
Form "B" Boilers	77
Appendix 9: Efficiency Kansas "N" Factors	79
Appendix 10: Contractor Terms and Conditions	80
Appendix 11: Self-Performance Terms & Conditions	81
Appendix 12: Davis-Bacon Acknowledgment	82
Appendix 13: Davis-Bacon Poster	83
Appendix 14: Project Budget Calculations	84
Appendix 15: Energy Savings Report	85
Appendix 16: Certificate of Project Completion	86
Appendix 17: Project Submittal Checklist	87
Appendix 18: Utility Contact Form	88
Appendix 19: Section 106 National Historical Preservation Act Agreement	89
Appendix 20: Variance for 12 Months of Continuous Utility Usage	106

Section 1: Efficiency Kansas Overview

1.1 Introduction

Beginning July 15, 2009, the Efficiency Kansas loan program was established by the Kansas Corporation Commission (hereafter, "KCC") to promote energy conservation through energy-efficiency improvements in existing Kansas homes and small businesses. Operated by the Kansas Energy Office, a division of the KCC, Efficiency Kansas was funded with approximately \$34 million in federal economic stimulus dollars, authorized by the American Recovery and Reinvestment Act of 2009 (ARRA).

The Efficiency Kansas loan program is a revolving loan program. In other words, as funds are repaid, the loan fund will replenish and thus provide a long-term source of financing for cost-effective energy conservation and efficiency improvements in buildings throughout the state.

To better accomplish the program objectives (detailed below), the Kansas Energy Office is partnering with Kansas utilities and lenders to promote energy-efficiency improvements in Kansas homes and small businesses. To ensure cost-effectiveness, all structures will first undergo an energy audit that results in a customized energy conservation plan (see Section 2 for more details about energy audits and auditors). Only those improvements for which estimated energy savings cover or exceed the project cost will be approved for Efficiency Kansas financing (see Appendix 14 for project budget calculations); customers may have the option to make upfront payments to "buy down" project costs to meet this requirement.

Future Updates

This manual may be updated or revised at any time; the version number will be changed with each substantive update. Participants, Partners, Auditors, and Contractors should refer to the Efficiency Kansas website (www.efficiencykansas.com) for the most current version.

Objectives

American Recovery and Reinvestment Act of 2009 (ARRA)

Efficiency Kansas meets the ARRA objectives of saving energy, reducing greenhouse gas emissions, creating and/or retaining jobs, and increasing energy independence. By making it easier for Kansans to make energy-efficiency improvements in existing homes and small businesses, Efficiency Kansas will reduce the state's energy consumption and emissions of both regulated pollutants and carbon dioxide. By increasing demand for energy auditors and building contractors, Efficiency Kansas will stimulate local economies in the short-term and provide a long-term funding stream, the revolving loan fund, to ensure sustainable demand going forward.

Energy efficiency goals of the KCC

The new loan program is closely aligned with the KCC's overall goals for energy efficiency programs, as laid out in the final KCC order in Docket 08-GIMX-442-GIV (the "442 Docket"), in that it (1) produces cost-effective, firm energy savings; (2) requires a comprehensive approach based on sound building science principles; (3) works well with Midwest Energy's existing

How\$mart[®] program, as well as similar meter-based programs that may be offered by other utilities; and (4) allows for targeting of rental units.

Efficiency Kansas offers Kansans an affordable approach to making energy-saving improvements in existing buildings statewide. By using local contractors, the program will stimulate economic activity throughout the state. And by allowing the funds to recycle though the revolving loan fund, the program provides the state with a long-term source of funding for smart energy efficiency improvements to help reduce energy consumption and emissions of regulated pollutants and carbon dioxide now and in the future.

Two Tracks

Eligible Kansans will have two ways to access the Efficiency Kansas financing for energy conservation and efficiency retrofits in residential and small commercial/industrial buildings: the "utility track" and the "lender track." The utility track is available to Kansans whose electric and/or natural gas utility has elected to partner with Efficiency Kansas (see definition of Partner Utility in Section 3). The lender track is available to all Kansans who wish to take out a low-interest loan directly through Partner Lenders, which are located throughout the state. (See Sections 3 and 4 for more details about the utility and lender tracks, respectively.)

In some areas of the state, participants will have the option to use either the utility or the lender track to access **Efficiency Kansas** financing. In other regions, the banking option may be the only one available to eligible participants.

1.2 Eligibility Requirements

Efficiency Kansas has no income limits. All Kansas owners of existing homes and small businesses, regardless of their income, are eligible to participate in Efficiency Kansas and may apply for financing through either Partner Lenders or Partner Utilities (provided their electric or natural gas utility offers a program). Tenants whose utility offers a meter-based program may also be eligible for financing.

Efficiency Kansas participants must have access to 12 consecutive months of utility bills. While it is preferred that these bills be the participant's, if a participant has not lived in the home for 12 full months, they may be eligible if they have access to the previous occupant's bills.

Residential Structures

Owner-occupant

All Kansas homeowners may participate in the program, provided they meet the following criteria:

- 1) they are deemed creditworthy by participating utilities or lenders,
- 2) they are Kansas residents,
- 3) the existing house is in need of energy-efficiency improvements (proposed improvements must meet program guidelines), and
- 4) the home is located within the state of Kansas.

Rental units

Owners of property (landlords) as well as occupants/operators of small businesses (tenants) may participate in the program, provided they meet the following eligibility criteria:

- 1) they are deemed creditworthy by participating utilities or lenders,
- 2) they are Kansas residents,
- 3) both landlord and tenant are informed of their respective obligations and agree to participate,
- 4) the rental unit is in need of energy-efficiency improvements (proposed improvements must meet program guidelines), and
- 5) the rental unit is located within the state of Kansas.

Mobile homes

Owner-occupants, landlords, and tenants of mobile homes may participate in program, provided the following conditions are met:

- 1) they are deemed creditworthy by participating utilities or lenders,
- 2) they are Kansas residents,
- 3) if mobile home is a rental unit, both landlord and tenant are informed of respective obligations and agree to participate,
- 4) the mobile home is on a permanent foundation or basement,
- 5) the mobile home has had all wheels removed,
- 6) the mobile is in need of energy-efficiency improvements (proposed improvements must meet program guidelines),
- 7) the mobile home is located within the state of Kansas, and
- 8) the audit is performed by an energy auditor who has received Mobile Home Certification from a qualified training institution.

Small Commercial and Industrial Structures

Owner-occupant

Any Kansas small business owners may participate in the program, as long as they meet the following eligibility criteria:

- 1) they are deemed creditworthy by participating utilities or lenders,
- 2) they are Kansas residents (applies to business partners),
- 3) the existing structure uses residential-sized heating and air conditioning equipment,
- 4) their small business or commercial structure is in need of energy-efficiency improvements (proposed improvements must meet program guidelines), and
- 5) the small business or commercial structure is located within the state of Kansas.

Rental

Both owners of property (landlords) and occupants/operators of small businesses (tenants) may participate in the program, provided they meet the following eligibility criteria:

- 1) they are deemed creditworthy by participating utilities or lenders,
- 2) they are Kansas residents,
- 3) both the landlord and tenant are informed of their respective obligations and agree to participate,
- 4) the structure uses residential-sized heating and air conditioning equipment,

- 5) the small business or commercial structure is in need of energy-efficiency improvements (proposed improvements must meet program guidelines), and
- 6) the small business or commercial structure is located within the state of Kansas.

1.3 Amount and Term of Financing

Participants approved for Efficiency Kansas financing will receive 100% of the approved project costs, up to the specified maximums. For both the utility and lender tracks, the maximum amount of funding for approved improvements to existing residential structures is \$20,000 (we estimate the average residential project size will be between \$5,000 and \$6,000). For approved improvements to existing small commercial and industrial structures, the maximum amount of funding is \$30,000, regardless of whether the financing is obtained through Partner Lenders or Partner Utilities.

The maximum term of all financed energy-efficiency projects is 15 years (180 monthly bill payments), regardless of customer type or track followed to access Efficiency Kansas financing. Efficiency Kansas financing will not be approved for items purchased prior to the approval of an Efficiency Kansas project by the Kansas Energy Office.

Section 2: Energy Auditors and Energy Audits

2.1 Auditor Requirements and Responsibilities

Auditor Training

All projects that are approved for Efficiency Kansas financing must be based on energy audits that have been performed by Efficiency Kansas "qualified" auditors. "Qualified auditors" have (1) met the criteria established by the Kansas Energy Office and (2) requested that they be included in the listing of qualified auditors. This list is maintained by the Kansas Energy Office and is available on the Efficiency Kansas web site (www.efficiencykansas.com). All energy auditors on the Efficiency Kansas qualified auditor list will have undergone training and been certified by one of the qualified training institutions listed on the Efficiency Kansas website (www.efficiencykansas.com). In addition to this requirement, auditors must pass an Efficiency Kansas certification to be listed as a qualified auditor.

All auditors will be asked to indicate their service area, and the Kansas Energy Office will include this information in the online list of qualified auditors.

Auditors performing audits on mobile homes must be certified by receiving mobile home audit training at a qualified institution.

Auditor Certification

After attending an approved training course, or upon application to become Efficiency Kansas Auditor, energy auditors will be expected to complete additional requirements to receive Efficiency Kansas certification.

Approved auditors on the Efficiency Kansas list as of September 15, 2010, will remain on the list of qualified auditors until December 15, 2010. At that time, only auditors that have met the Efficiency Kansas Auditor Certification requirements shall be listed as qualified auditors.

Efficiency Kansas Auditor Certification will have three parts: (1) Program-specific training, (2) Field testing, and (3) Continuing education requirements.

Program-specific training

The Kansas Energy Office will provide auditors with program-specific information to help them effectively market and explain Efficiency Kansas to customers. The training will include a review of the Program Manual, the Efficiency Kansas website, and introductory brochure. Auditors will also receive training on how to present the Energy Conservation Plan to the Kansas Energy Office and to homeowners.

Field testing

Field-testing will involve both an on-site test and a test of the auditor's proficiency in REM/Rate or REM/Design. It will be monitored by Kansas Energy Office staff energy auditors, hereafter "Monitor."

On-site test

Field testing is limited to on-site testing procedures that will follow each auditor through the data collection portion of the energy audit. The auditor will identify a house that meets criteria as defined by the Kansas Energy Office. The house **must** have combustion appliances and a minimum of two of the following:

- kneewalls (walls common between house and attic),
- vaulted (sloped) ceilings,
- crawlspace,
- cantilevered floor, or
- floored attic.

Once auditors have identified the house they wish to use, they will contact the Kansas Energy Office to verify the house will be a good choice for the field testing and schedule the on-site test. Auditors are encouraged to select a house that includes all of the features listed above, for the optimum scoring opportunity.

Auditors will have three hours to complete the on-site test, though it is expected that the actual time for on-site data collection will be approximately two hours. The testing will conclude after three hours. Any inspection procedure performed after the time has expired will not be scored. The Monitor will document the end of the test and what procedures have not been completed. The items not completed will be scored with a zero (0).

A photo of the auditor will be taken at this time and used to make an ID card that will be mailed to the auditor, provided they successfully pass both parts of the field testing. The photo will be stored for future use, in the event that an auditor does not pass the first time.

The Monitor will instruct the auditor that:

- 1) there is a three hour time limit;
- 2) no questions can be asked about procedures;
- 3) the test is an open-book, open-note test; the auditor can use any reference material desired;
- 4) the training/certification scoring forms can NOT be used as reference during the testing;
- 5) the auditor is to talk throughout the inspection process to ensure that the Monitor is aware of what they are doing and why.

The Monitor will do the following during the on-site test:

- 1) Follow and observe auditors as they conduct an inspection of the dwelling.
- 2) Score the auditors' efforts on the field-evaluation form by circling the most appropriate score for each activity area.
- 3) Explain to the auditor that they will be followed through the house and asked questions as they go.
- 4) Record observations and measures throughout the house to compare with the findings the auditor submits.
- 5) Evaluate the accuracy of auditor performance on each line item and assign points, from 0 to 5, for each item on the field-evaluation form. (Monitors will mark NA if the item doesn't apply to house.) Any attempt at a procedure should result in a score

above zero, unless the auditor creates a harmful or hazardous condition. The recognition, accuracy, proficiency, and number of attempts to perform the procedure will be scored to recognize the auditor's knowledge and abilities.

- 6) Ask the auditor if they need anything prior to starting the audit.
- 7) Follow the instructions on the field training documents to evaluate and grade the auditor performance.

REM/Energy Conservation Plan testing

The remaining portion of the certification involves REM submittal and the preparation of the Energy Conservation Plan. Auditors will receive a packet of information at the end of the field testing session, which includes information—pictures, drawings, and notes—about a house already audited by the Kansas Energy Office. It will be up to the auditor to complete the REM and Energy Conservation Plan for this house on their own. They will have one full week (7 days) to complete and submit the REM file and the Energy Conservation Plan to the Kansas Energy Office.

Auditors will be tested on the following:

Correctly identified improvement measures to consider Calculations for building, windows, doors, attics, etc. Calculations for ACH50 Calculation for NACH Property information input Correct library creation Utility costs reconciliation Work order specifications Two Building File Report Improvement analysis Retro-fit Report creation Compilation of the Energy Conservation Plan

Auditors will receive a letter informing them of their "pass/fail" result and their score on field-testing certification. Auditors must receive at least an 80% or better to pass the on-site test portion and 90% or better to pass the REM/Energy Conservation Plan portion of the test.

- If auditors pass both portions of the field testing, they will be presented a certificate and a photo ID.
- If auditors pass only one portion, they will be sent a letter explaining the test result and options for retesting.
- If auditors fail to pass either portion, they will receive a letter explaining the retest criteria.

A minimum of thirty (30) days must pass before a retest can be completed.

Continuing education

The Kansas Energy Office believes that continuing education is an important element of auditor certification. Auditors will be required to attain twenty (20) hours of Continuing Education in order to be recertified. Recertification will be required every two (2) years. The auditor has the

option to perform a Field/REM/Energy Conservation Plan test again if the required CEU credits have not been obtained for recertification after two (2) years.

Required Insurance

Qualified auditors must hold general liability insurance. They are also strongly encouraged to carry errors and omissions insurance. The Kansas Energy Office requires proof of insurance to list an auditor as a qualified auditor.

Auditor General Provisions

All audits must be completed by the Efficiency Kansas Energy Auditor certificate holder, including all data collection and analysis. No other person may perform audit service, inspection or evaluations for the Efficiency Kansas program.

Every Energy Conservation Plan submitted to the Kansas Energy Office for approval must include a completed Efficiency Kansas Energy Auditor Identification form (Appendix 3).

To become a qualified auditor in the Efficiency Kansas loan program, auditors must complete the Application for Qualified Energy Auditors and submit it to the Kansas Energy Office along with proof of completed training and general liability insurance. All auditors are required to complete the additional Kansas Energy Office certification prior to being considered a qualified auditor and achieve an active listing on the Efficiency Kansas website.

Auditors on the qualified list may be removed or suspended at the discretion of the Kansas Energy Office (see below).

Code of Ethics

Qualified auditors in the Efficiency Kansas loan program are expected to abide by a code of ethics in providing services to their customers. This code of ethics requires a commitment to confidentiality, accuracy, integrity and honesty. The Kansas Energy Office expects that qualified auditors practice the profession according to the following code of ethics.

Auditors representing the Efficiency Kansas Loan Program will meet the standards listed below.

- 1) Make statements based on facts that are supported by the inspection, audit results, or research done by an industry-recognized professional source.
- 2) Always act in good faith toward each client. A disclosure form (Appendix 4) indicating the Qualified Auditor's connection to any energy efficiency products or services other than audits must be presented to the client prior to the audit being performed or purchased.
- 3) Never allow business interests to affect the quality or results of an audit or recommendations.
- 4) Recommend that the customer obtain more than one bid with references, prior to selecting a contractor to provide the needed improvements.

- 5) Never disclose any information concerning the results of the audit without the written approval of the customer or his/her representative, except to submit the results to the Kansas Energy Office for program evaluation purposes.
- 6) Not accept or offer commissions or allowances directly from or to other parties dealing with the customer in connection with work for which they are responsible.
- 7) Make every effort to uphold, maintain, and improve the professional integrity, reputation, and practice of the Efficiency Kansas loan program, the energy auditing profession, and its auditors.

Auditor Conduct and Continued Qualification

The Kansas Energy Office expects all auditors on the List of Qualified Auditors to uphold the high standards of both their profession and the Efficiency Kansas loan program. Auditors may be removed, suspended, or placed on probation at the discretion of the Kansas Energy Office. Auditors must renew their certification with Efficiency Kansas every two years.

The Kansas Energy Office is responsible for investigating complaints against qualified auditors. Auditors found to be in violation of the standards of practice outlined in this Program Manual will receive written notification from the Kansas Energy Office of the offense and the action taken. These actions include the following:

- *Probation:* The auditor will remain on the List of Qualified Energy Auditors, but no audits will be approved until the auditor is removed from probation. Failure to comply with program requirements while on probation may cause the auditor to be suspended. Such requirements may include seeking additional training.
- *Suspension:* An auditor will be temporarily removed from the List of Qualified Auditors, and suspended from submitting audits to the Efficiency Kansas loan program until the Kansas Energy Office determines that the problem has been resolved. Failure to comply with program requirements during suspension may cause the auditor to be removed from the List of Qualified Auditors. Such requirements may include seeking additional training.
- *Removal of qualified auditor status:* An auditor will no longer be listed on the List of Qualified Auditors and cannot reapply for a period of one year. The auditor will not be able to submit audits for approval for the Efficiency Kansas loan program.

Probation

The Kansas Energy Office may refuse to renew or revoke the qualification of energy auditors for the reasons outlined below:

- 1) misrepresentation of qualifications when applying to become a qualified auditor;
- 2) intentional misrepresentation of data provided to customers or the Kansas Energy Office;
- 3) any gross negligence, incompetence, or misconduct in performing an energy audit;¹ or

¹ This includes (1) actions performed by auditors during the inspection or testing that puts a person or property in danger, (2) recommending or performing work that leaves a hazardous condition, or (3) acting with disregard or disrespect to a customer or to their property.

4) any violation of provisions of this Program Manual.

Suspension

Moreover, the Kansas Energy Office may suspend auditors or place them on probation for the following reasons:

- 1) Submitting audits performed by a person other than the Efficiency Kansas qualified auditor.
- 2) Repeatedly refusing to do Efficiency Kansas program audits when approached by potential customers.
- 3) Submitting audits that are not based on the house-as-a-system approach and recommending replacements or upgrades biased by any conflict of interest.
- 4) Regularly submitting audits that do not conform to the Program Manual requirements.
- 5) Performing work or making recommendations that creates a potentially dangerous harmful situation.
- 6) Failure to identify potentially dangerous situations.
- 7) Failure to comply with the Efficiency Kansas Program Manual.
- 8) Failure to complete the auditing or reporting requirements once a property has been inspected.
- 9) Failure to disclose fees for auditing or any associated costs in advance of services.
- 10) Failure to respond in a timely manner to Efficiency Kansas audit information requests.

The Kansas Energy Office will continue to provide timely and reasonable support for qualified energy auditors. The Kansas Energy Office may host periodic meetings for qualified auditors, attendance at which will be mandatory.

Software

Computer modeling is required for a qualified energy audit. Auditors will be required to use either REM/Rate or REM/Design audit software.

2.2 Energy Audit Requirements

The purpose of the energy audit is to determine the energy-use characteristics of the building and develop a cost-effective plan, using a "whole house" approach to energy efficiency.

The following section details the minimum requirements for an energy audit. Auditors should review this section to ensure that all audits have met these requirements.

Additional forms and other information for energy auditors can be found in the Appendixes. These forms will also be available on the Efficiency Kansas web site (www.efficiencykansas.com).

Customer interview

Prior to initiating the energy audit, auditors will interview customers to identify the customer's priority comfort and health concerns and other questions. Auditors will use the interview to explain the general audit process and procedures (including the technical processes), how information is gathered, and how that information will be used to create the Energy Conservation Plan. Efficiency Kansas qualified auditors are expected to keep customers involved to the greatest extent possible at all times. See sample questionnaire in Appendix 5.

The customer interview should include a disclosure of the cost of the audit, including the required post-retrofit audit. Auditor should inform customer of any audit rebate or subsidy that may be available from the Kansas Energy Office. If an auditor is charging hourly fees, they should clarify with customers a maximum fee to be charged. All fees should be disclosed prior to beginning the energy audit. Auditors should also disclose any potential conflicts of interest, as required by Codes of Ethics (see previous section).

Inspection

A thorough inspection is essential to an accurate energy audit. Inspections performed by Efficiency Kansas qualified energy auditors will include the following general components, which are detailed below:

- Assessment of building envelope through exterior observation and measurements;
- Assessment of building envelope through interior observation, measurement, and preparation;
- Combustion testing (health and safety);
- Assessment of mechanical systems;
- Treatment of duct leakage;
- Assessment of moisture infiltration;
- Dealing with unvented space heaters; and
- Blower door / Air-tightness testing.

Assessment of building envelope: Exterior observation and measurements

Energy auditors will do the following during their inspection of the building envelope:

- 1. *Create plan view,* illustrating the outline and dimensions of the structure. Many auditors find it helpful to begin consistently at a given point (say, the northwest corner of a structure) and measure in a particular direction (say, clockwise). Thus, all sides are viewed in a given order, reducing potential for confusion and duplication. The "plan view" drawing should indicate which way is North for easy reference. The drawing should be the work of the auditor, not a pre-drawn document from appraisal records.
- 2. *Create elevation views,* showing the overall shape and the location of doors, windows, and other features of each side or face of a structure. Effort should be made to produce an

illustration that is neat and provides a reasonably accurate representation of dwelling. Photographs may be included in lieu of hand-sketched elevation views. Pictures must show all four sides of the house and also clearly show any relevant items to be addressed in work specification forms. Note that pictures are required, even if hand-sketched elevations are developed by the auditor.

3. Measure doors and windows and assess shading and solar exposure.

- a. Door and window dimensions are written in inches, with the width first, then the height.
- b. Observation should be made during the measurement phase to determine whether work will be applied to doors and windows.
- c. If no additional work will be applied on a given door or window, only rough opening measurements are required. Contractors are required to perform their own measurements for accuracy when supplying bids.
- d. Assess the degree to which windows are shaded, thereby reducing the amount of solar heat gain transmitted through them. Shade can be provided by blinds and curtains on the inside of windows, insect and solar screens on the outside, overhangs and wing walls which are part of the building's shape and form, trees and shrubs which may seasonally lose and gain foliage, and nearby buildings and land forms.

4. Check side wall construction and insulation factors.

- a. Check to determine the feasibility of installing additional sidewall insulation.
- b. Document the type of siding, insulation, approximate R-value, and type of construction. Siding condition should also be noted.
- c. Siding removal should be included as an option in insulation bid packages.

Auditor Notes: The existence of various types of replacement siding (i.e., steel, aluminum, vinyl, and asbestos-cement) will not necessarily constitute a justification to omit sidewall insulation unless extenuating circumstances exist and are documented. All types of installation should be considered including an interior installation using crown mold and chair rail to cover holes.

- d. The presence of sidewall insulation will not necessarily constitute a justification to omit sidewall insulation, unless extenuating circumstances exist and are documented.
- e. Auditors must complete their own sidewall tests, such as drilling test holes to determine whether sidewalls are insulated.
- f. It is important when conducting blower door tests to know whether or not sidewalls are insulated. **Sidewall testing is not to be conducted by insulation contractors.**
- g. In some situations, it is possible to observe wall insulation by removing outlet and switch plates, or by drilling through interior walls in closets or behind cabinets.
- h. Uninsulated wall cavities on exterior walls shall receive a blown fibrous insulation (if audit approved), unless circumstances make it impossible to install insulation. The presence of pre-existing insulation is not necessarily a reason to not insulate.

Project Specifications: Dense-packed, tube-filled insulating technique is the preferred method and should be included as an option in all insulation bid packages.

- i. The dense-packed method must be employed unless the wall condition prohibits its use.
- j. It is the auditor's responsibility to determine whether or not the walls are in a condition that allows for the dense-packed insulation method.

- k. If the dense-packed method is not used, the inspection report must document the reason.
- 1. The Kansas Energy Office will approve payment for insulation of only those sidewall areas that actually receive insulation.
- m. All sidewall insulation bids will specify insulation of "net" wall area. Any payment to contractors for insulation of "gross" wall areas (doors, windows, etc., that <u>cannot</u> be insulated) is not allowed.
- n. Document air sealing that can be done at utility bypasses, vents, and other penetrations that allow air leakage that is inaccessible from the interior. These items should be clearly and specifically identified to allow them to be easily located and identified by contractors. Examples might include the sill plate, band joist area in homes with very low crawlspaces, cracks or holes in foundations, and crawlspaces or foundation entry hatches.
- o. Pre-blower door air sealing measures which can be accomplished only from the exterior of the dwelling should be noted during this phase.
- p. Infrared scans may be performed to confirm areas of heat loss and gain. However, infrared scans shall not replace any of the above required analysis.

5. Exterior observation of roof condition.

a. Determine if, and where, roof leakage problems may exist.

Project Specifications: Roof leaks may be sealed to protect the integrity of the structure. Roof leaks may be sealed to protect attic insulation.

6. Assess water-shedding functions of the dwelling.

a. Site drainage problems which cause moisture to enter the structure and may compromise the integrity of the structure and/or foundation can be addressed as repairs to protect the structure against moisture damage and related health and safety problems.

Auditor Notes: The costs associated with these activities would be a portion of the aggregate project costs since they cannot be input into the software for analysis.

Project Specifications: A drainage swale could be cut to cause water to drain around the structure, or fill dirt could be added to cause water to drain from the structure.

- b. Other water-shedding or site drainage problems that are specific to the structure should be noted during this observation phase.
- c. A failing guttering system may result in moisture damage to the dwelling and may be addressed as repairs to protect the sidewall insulation.

Project Specifications: Gutters may be cleaned, repaired, replaced or installed as protective measures to prevent or repair water damage that could affect the performance of installed measures.

Assessment of building envelope: Interior observation, measurement, and preparation

The inspection of the building interior will include the following:

1. Inspect attic insulation.

a. Un-insulated or partially insulated attics shall be insulated to R-30 or R-38, according to the cost-effectiveness of the measure.

- b. Auditors may require that customer have some form of access to the attic as a requirement to perform the audit. Attic inspection *must* be completed as a part of the audit.
- c. If no attic access exists, and it is not possible to obtain access through an exterior vent, then an attic hatch or access vent may be installed at the customer's expense.

Auditor Notes: "Access hatches" can be pre-fabricated using 1×10 lumber for the sidewalls (to act as an insulation dam), 1×4 lumber for ceiling trim, and a piece of $\frac{3}{4}$ -inch plywood for the door. The pre-fabricated units can be sized to fit standard rafter widths of 16 inch and 24 inch on center.

Project Specifications: Attic and crawlspace hatches in conditioned areas shall be weatherstripped to prevent air leakage. Kneewall access should be insulated to at least R-19. Attic access panels should be recommended to be installed at the same R-value as the entire attic. All accesses shall remain operable after the job is completed.

d. Access hatches to knee-wall areas are subject to the same requirements. If no access to the knee-wall area(s) exists, one may be installed at the customer's expense.

2. Inspect wiring and heat sources in the attic.

a. If knob-and-tube wiring (KTW) is present and attic insulation will be installed, auditors should test the wiring with a voltage detection device to determine whether or not it is active.

Auditor Notes: KTW is not inherently dangerous, but it is an older type of wiring that was not designed or installed with modern appliance loads in mind. Often, the KTW is a lighter gauge wire than is recommended for modern applications. Thus, KTW is potentially dangerous in situations where it can be overloaded, which may cause it to overheat and cause a fire.

The National Electrical Code requires that insulation material should not cover KTW. It is suggested, therefore, that insulation be "valleyed" under and around KTW or that insulation dams be installed to prevent contact with KTW. Special care should be taken to ensure that KTW splices remain visible and are not covered by insulation.

KTW must be protected by circuit breakers or S type fuses with an appropriate amperage limit for the gauge of wire used (15 amp for #14 wire, and 20 amp for #12 wire). S type fuses are designed to prevent both the installation of higher amperage fuses and the insertion of coins into the fuse holder for the purpose of circumventing fused amperage limitations.

Insulation can not be installed if the above precautions are not taken. Permission must be obtained from the owner to modify fuse box.

Insulation dams must be placed around any potential heat-producing sources, including recessed lights, chimneys, flues, and open electrical boxes.

Unfaced fiberglass batting may be used as an insulation damming material, but a three-inch air space must be maintained between any damming material and the heat source. Unfaced fiberglass batting, or any other damming material, must not touch the heat source.

Damming material must be sufficiently high to contain the specified depth of the insulation material to be installed. Damming material also must be sufficiently strong to ensure that the weight of the insulation product will not cause the damming material to move or collapse against the heat source.

3. Inspect ceilings.

a. The stack effect in winter is perhaps the most constant and often the strongest driving force moving conditioned air and moisture vapor from a dwelling. Holes or penetrations in the upper plane of the interior envelope are, therefore, the most important air leaks to seal in a structure. Be sure to look in all cabinets, closets and cupboards to check for gaps, holes and bypasses.

- 4. Assess ventilation.
 - a. The auditor must take into account the leakiness of the attic and its particular moisture- and heat-retention characteristics when determining the proper amount and location of additional venting to recommend.

Project Specifications: Attic ventilation shall be installed so that there is one square foot (net) of free vent area in every 300 square feet of attic floor area, with approximately half of the vent area located near the roof ridge and the remaining vent area located near the eaves.

Auditor Notes: Many older houses were originally constructed with spaced boards and have wood shakes or shingles that have a much higher natural ventilation rate than newer houses with plywood sheathing. Therefore, such structures may require less or no additional ventilation.

5. Inspect walls.

- a. Holes or penetrations in interior walls, especially in balloon-framed structures, can allow conditioned air to move from the structure through interconnected framing conduits. Do not assume a crack or hole will be a source of infiltration or exfiltration. Check the condition with the blower door testing running. Specify to seal if they leak under pressure.
- b. Infrared scans may be performed to confirm areas of heat loss and gain. However, infrared scans shall not replace any of the above required analysis.

Project Specifications: Holes or penetrations that would allow insulation to blow into the living space must be sealed prior to the installation of the insulation.

6. Inspect floors.

a. Floors between stories in many houses contain open floor joist areas that can act as air passage conduits. Cantilevered areas—where an upper story juts over a lower story or where a bay window extends beyond the wall plan—can allow major air leakage. Many leaks through and between floors will be revealed by blower door tests.

Auditor Notes: Dense-packed insulation can be used as an effective air sealant at the ends of floor joist cavities.

7. Inspect basement/crawlspace.

- a. Auditors will look for signs of air leakage at penetration sites (including any windows and doors) and inspect the condition of rim joist insulation. Signs of moisture infiltration should be noted in the Audit Report to the customer.
- b. Infrared scans may be performed to confirm areas of heat loss and gain.

Project Specifications: The sill plate rim joist area in many homes is a major source of air infiltration. Stone foundations often contain numerous holes and cracks, which are major sources of infiltration. Cracks may be caulked, stuffed with backer rod or other packing material and caulked, sealed with an expanding foam product, or sealed in other ways that provide an effective and durable seal. Expanding foam products should be used only in areas that do not receive direct sunlight, or should be coated to protect them from such light (ultra-violet rays deteriorate the product and reduce its effectiveness).

Batt or rigid-board insulation may be cut and placed neatly in the rim joist area if the auditing software determines that the addition of batt insulation to the perimeter would result in significant reduction of conductive heat loss. Rim joist insulation may also be installed using spray applied cellulose material.

c. Basement grade entries, foundation entry doors, and crawlspace entry hatches should be inspected to ensure that they provide an effective barrier to the penetration of water and a durable air seal.

Project Specifications: Wood construction in contact with soil or near the grade line should be of a treated nature. Foundation entry doors can be constructed of treated, braced plywood or can be standard exterior entry doors.

Auditor Notes: A six-mil poly vapor barrier should be installed over all dirt crawlspace floors if possible. The poly barrier can also help to make crawlspace inspection and repair work more pleasant, and it will contain the evaporation of moisture from the soil into the space above.

Crawlspace ventilation should be installed only if the site-specific situation precludes the installation of an effective vapor barrier and if there is reason to believe that ventilation is necessary to protect structural components from moisture damage.

Mechanical systems

In addition to the specific requirements below, auditors should identify the age and condition, make, model, serial number, and energy efficiency rating for all mechanical systems in the report accompanying the energy audit. See Appendix 8 for applicable forms to be completed and submitted with the Audit Report.

- 1. Heating and cooling: Auditors will check performance of equipment, and ensure equipment is operating as intended (e.g., auditors will check any drain and condensate lines).
- 2. Water heater: Auditors will examine water heater for performance, temperature setting, and signs of leakage. If furnace or boiler system is being recommended for replacement and shares a flue system with the water heater that is not going to be replaced, note on the DWH form that the water heater will be "orphaned."
- 3. Auditors will perform combustion appliance zone (CAZ) analysis on combustion appliances in the home. This will include looking for evidence of backdraft/spillage and any carbon monoxide leaks in the home. Auditor's recommendations should take into account health and safety precautions to ensure safe operation of combustion appliance and that indoor air quality is maintained at a safe level. **This testing shall be performed during test-in and test-out procedures.**
- 4. Distribution systems: Auditors will check condition of, and indicate any repairs that may be necessary for the following:
 - a. Air handlers and coils
 - b. Ductwork
 - c. Steam/hot water pipes (for boiler)
 - d. Mechanical ventilation (bath/garage exhaust fans)

Duct leakage

Auditors will follow the specifications listed below:

- 1. If duct system runs through unconditioned space in the attic, crawl space, or basement, the ducting must be sealed and insulated.
- 2. Return-air systems in CAZ area should have seams sealed to prevent possibly pulling combustion gas by-products into the system and distributed through supply system.

Project Specifications: Fiberglass mesh tape shall be installed under mastic, where needed for reinforcement. Approved caulks and mastics shall be used for duct sealing. Duct insulation shall have a minimum R-value of 4.

Moisture control

Homes that have moisture problems such as leaky roofs or foundation problems, must have these issues corrected prior to implementing the energy conservation plan recommendations.

Project Specifications: Existing moisture problems in a house may result from mechanical ventilation not being either installed or used by the customer//tenant of the property. Mechanical ventilation should be installed and customers should be advised of hazards associated with moisture when doing daily water activities such as cooking or bathing. To help ensure that the moisture is eliminated from the home, the auditor should instruct the occupants about using ventilation fans for thirty minutes following any water activity to eliminate moisture from the house and help reduce the risk of creating a moisture damage problem in the structure. Mechanical ventilation should be exhausted to gable, roof, or soffit vent, not merely into the attic. Clothes dryers must be vented to the outside.

Auditors need to ensure the minimum ventilation guidelines have been installed per ASHRAE 62-89.

Unvented space heaters

Buildings heated by unvented space heaters are considered unsafe and shall not have air sealing or building tightness measures applied unless the heaters are removed from the premises, vented to the outside, or replaced with an appropriate heating unit. Either the customer or auditor will sign this form. This form must accompany the Energy Conservation Plan report to the Kansas Energy Office (see Unvented Heater Removal Agreement, Appendix 7).

Blower door / Air-tightness testing

Auditors will perform an air-tightness test using a blower door, a piece of equipment that allows an auditor to pressurize a house to determine the tightness of the home's shell, and identify ways to improve the home's shell. Auditors will take care to ensure health and safety regarding lead paint or asbestos materials, making all efforts to cause no harm to customers. Auditors will locate all areas of significant air infiltration/exfiltration including windows, doors, duct chases, etc., and report these to the customer. Auditors and contractors will ensure that minimum air ventilation guidelines, as per ASHRAE 62-89, have been met during both test-in and test-out procedures to provide for the proper amount of air changes per hour. Combustion appliance zone testing should be performed at a level equal to or exceeding guidelines established by the Building Performance Institute (BPI), Residential Energy Services Network (RESNET), and other Department of Energy (DOE) funded research.

All contractors and crew members will be responsible for complying with the EPA's Renovation Repair and Painting (RRP) regulations, as enforced by the Kansas Department of Health and Environment. More information can be found online (<u>www.epa.gov/lead/pubs/renovation.htm</u>). Contractors should also reference the additional information included in EPA Final Rule [under the authority of 402 c 3 of the Toxic Substances Control Act (TSCA)], and New Lead Based Paint Renovation, Repair and Painting Program requirements (40 CFR 745, Subpart E), issued April 22, 2008 (73 FR 21692).

Inspecting mobile homes: Special considerations

Auditors inspecting mobile homes must have a special Mobile Home Certification. This training can be obtained at an Efficiency Kansas qualified training institution (see web site for list of such institutions: www.efficiencykansas.com).

Furnaces and ducting

The interior observation process in mobile homes should start with a visual inspection of the furnace ducting system, then move to the upper plane of the interior envelope (i.e., the ceiling), and finally work through the main body of the house to the floor and possible penetrations into or through the underbelly.

Several types of air leakage sites are common to the furnace ducting systems of mobile homes. The boot that connects the duct to the floor of the trailer is often the site of major air leakage. In many mobile homes, it is possible to lift a floor register and see into the underbelly, or see the ground under the structure through holes in the duct boot and the underbelly.

In some older mobile homes, the ends of units of ducting have been compressed to connect them to other units to form longer ducting runs. As a result, there are often air leaks at the top and bottom of the duct where the two units of ducting join. In addition, the ends of ducting runs are either poorly sealed or not sealed at all. In double-wide units, the duct that joins the two sides is often loose or misaligned.

Leaks in the supply ducting of mobile homes allow conditioned air to be blown into the underbelly or outside the house, when the furnace blower is functioning, significantly reducing the efficiency of warm air delivery within the structure. When the furnace blower is not functioning, the same leaks allow outside air to blow back into the structure. No air movement within or through the ducting system should be observed when the blower fan is not operating.

Project Specification: Mastic all duct boots to the floor and seal all trunk ends with foam board and mastic.

Framing

In the assembly process of most mobile homes, the roof structure is installed as a complete unit after the frame, floor, and walls have been constructed. The completed roof section is lifted into place with a crane and set upon the wall structure; this creates some potential for air leakage at the roof/wall joint. Appropriate sealing material may be applied on both sides of the trim piece at the roof/wall joint. However, sealing the joint between interior partition walls and the ceiling should rarely be necessary.

Holes, cracks, and penetrations in the ceiling may constitute important air leaks.

Walls and windows

Holes or penetrations on the inside of exterior walls of mobile homes can allow air to move from the structure through the corrugated exterior siding.

In almost every case, some type of interior storm window will provide the most effective, and the most cost effective, reduction of air infiltration through mobile home windows. Recent research on mobile homes has indicated that window replacements should be used *only* when repair

would be more expensive than replacement. Even for jalousie and awning windows, money is better spent on interior storm panels than on window replacement.

It is often possible (with client approval) to seal some primary windows shut if they are not normally used for ventilation.

Other repairs

Floors in mobile homes are often constructed of particle or wafer board. Moisture generally causes this type of material to deteriorate rapidly. In mobile homes, plumbing leaks and other types of moisture concentration are a common occurrence. Floor repairs may be completed using treated lumber to provide some protection against future deterioration.

Note: Caution should be used in the handling of treated material due to the toxic nature of the chemicals used in the material.

A good opportunity for combined air-sealing and thermal boundary improvements are available in mobile homes by installing insulation to R-30 in the belly of the home. Belly paper and belly board should be repaired and sealed if any gaps are evident, prior to installing insulation.

Product Specification: Recommended method for insulating mobile home floors is to use a lightweight fibrous material such as loose-fill fiberglass. Drill and blow the floor full, sealing all access points in floor. Caution should be taken to avoid filling ductwork with insulation.

Exterior doors that are misaligned due to settling of the unit may allow water leakage. It is not uncommon to find floors around exterior doors deteriorated due to moisture damage. Condensation on windows, especially replacement type windows without interior storms, can cause deterioration of the walls and floors below the window. Plumbing leaks under kitchen and bathroom cabinets, bathtubs, water heaters, washing machines, and refrigerators may also cause floor deterioration. Many of these problems could be included as an infiltration measure in the Energy Conservation Plan. Holes in floors, walls, and ceilings are common in mobile homes and can be a source of infiltration. However, plumbing leaks that would cause problems would need to have the plumbing fixed first. Sometimes, moisture problems are caused by mobile homes being inherently tight: in many instances, too many people and/or pets occupy the small space or mechanical vents at water locations are not installed, used, or working properly.

State Historical Preservation Office Requirements

Application of Section 106 of the National Historic Preservation Act in Efficiency Kansas

Whereas the projects funded are subject to review under Section 106 of the National Historic Preservation Act, 16 U.S. C 470F (NHPA), and it's its implementing regulations at 36 CFR part 800, and include rehabilitation, energy efficiency retrofits, renewables, and weatherization undertakings, the following guidelines have been set forth for any structure listed or eligible for listing on the National Historic Register. Any structure built in 1960 or before is subject to these guidelines. A copy of the Programmatic Agreement governing the Historical Preservation Guidelines can be seen in Appendix 19. Follow these guidelines will follow the following guidelines to wall insulation, and window repair, restoration, or replacement.

Wall insulation

- 1. Insulation will not result in noticeable holes on the Exterior.
- 2. Remove siding to blow and replace siding. Cause no visible damage during removal, blowing insulation, capping holes and replacing siding.
- 3. Wood siding can be drilled to install insulation but the holes must be plugged with a wood plug, sealed in place, sanded smooth and repainted with matching paint. Plugs can not be visible.
- 4. Cellulose insulation which uses aluminum or ammonium sulfate as the fire retardant can not be used. (Cellulose treated with boric acid as the fire retardant is approved).
- 5. Interior paint must offer/work as a vapor barrier at all interior surfaces/walls containing the newly blown insulation.
- 6. Insulation installed under a new siding is not permitted when it covers architectural features. (No siding and insulation overlay replacement allowed.)
- 7. Attaching insulation to inside, framed out with firring strips is not allowed if it covers original features such as cornices, chair rails, window trims, or if it causes the destruction of historical plaster or other wall finishes.
- 8. Following manufactures instructions for installing insulation with appropriate fireproofing; rigid foam insulation must be covered by appropriate fireproof covering (1/2" gypsum wallboard). The insulation is not to be left exposed.
- 9. <u>Wall insulation blown from the inside:</u>
 - a. Must not damage historical plaster or other wall finishes.
 - b. Must follow EPA Lead Based Paint guidelines.
 - c. Must be refinished (not seen when complete).

Windows

Replacement windows will not be approved except under these conditions:

- If the window is severely deteriorated and repair would be impractical or economically infeasible.
- Evaluated on a window-by-window basis and not applied as a total replacement of all windows.
- Any new window installed will:
 - Be wood or metal.
 - Closely match the historic windows in size, number of panes, mutin shape, frame color and reflective qualities of the glass.

Project Financing

For the lender track, funds will be released to partner lenders upon approval of the project by the Kansas Energy Office. Customers must submit invoices to the partner lender along with a signed Certificate of Project Completion at the completion of the post-retrofit audit by the auditor.

For the utility track, funds will be released to the utility upon project approval by the Kansas Energy Office. The utility may release funds to contractors upon receipt of a Certificate of Project Completion. The Certificate must be signed by the customer and auditor, and routed to the Partner Utility, who will send it to the Kansas Energy Office (see Appendix 16). Customers must also submit contractor invoices that clearly indicate the work completed, including itemization of materials and labor where appropriate, serial and model numbers of equipment installed, or anything else necessary for the Kansas Energy Office to clearly identify that the invoices are consistent with the previously approved Energy Conservation Plan.

Davis-Bacon Act

Certain projects that are funded through the Efficiency Kansas loan program are subject to Davis-Bacon and Related Acts (DBRA). Under the directive from the Department of Energy (received January 11, 2010), residential projects will not be required to adhere to Davis-Bacon. Small businesses that secure financing through the Efficiency Kansas loan program will be required to adhere to Davis-Bacon requirements. For more information, see detailed discussion in Section 6.

2.3 Audit Report and Energy Conservation Plan

Another key piece of an Efficiency Kansas approved energy audit is the report that the auditor prepares following the inspection. The Audit Report, which includes general information about the structure and the Energy Conservation Plan, provides both a detailed "diagnosis" and a "prescription" with options for the customer to review.

Every Audit Report will be reviewed by the Kansas Energy Office and recommended projects approved before funds are released from the Efficiency Kansas loan fund. No materials can be purchased by anyone prior to the Energy Conservation Plan being approved by the Kansas Energy Office.

Energy Conservation Plan

The Audit Report will include an Energy Conservation Plan that will detail the recommended improvements and may include several options for customers to choose among. These recommended improvements will be prioritized in terms of cost effectiveness.

Auditors should provide the appropriate number of the Contractor Terms and Conditions forms (see Appendix 10) when they present the Energy Conservation Plan to the customer. If the project is for a small business, the auditor should also provide the appropriate number of the Davis-Bacon Acknowledgment forms (see Appendix 12).

As discussed in Sections 3 and 4, it is the customer's responsibility to solicit bids from contractors after the Energy Conservation Plan has been approved by the Kansas Energy Office. Once the Plan is approved, the customer may seek final financing approval. Auditors that also perform as contractors must provide an opportunity for customer to solicit bids from additional contractors. Bid specifications must be created in a manner which allows item for item comparison and pricing for all bids.

Necessary repairs to existing infrastructure

First and foremost, the Energy Conservation Plan will detail any "as-built" problems that will require repairs to ensure the health and safety of structure's occupants; examples include repairing faulty equipment, such as pilot lights on gas furnaces and/or water heaters, and improperly sized or installed vent piping for combustion appliances. This documentation and disclosure can save lives.

Priority listing of energy-efficiency improvements

These improvements and the priority in which they should be implemented will be identified by the auditor. Priority is determined by the analytical software utilized in preparation of the energy audits (see Section 2.1).

Any mechanical system that is found to be operating with a cracked heat exchanger, unrecoverable back-drafting, spillage or other situations that cause carbon monoxide to contaminate the indoor environment **must** be corrected prior to applying any improvement measure that will tighten the thermal boundary. Thermal boundary improvements, such as airsealing and insulation, must not be installed prior to the correction of or replacement of hazardous conditions existing with mechanical equipment. Whenever such hazardous conditions are present, auditors may contact the Kansas Energy Office for a waiver of the required prioritized listing.

Recommended improvements *may* also include water conservation measures and/or renewable energy generation, provided such improvements are cost effective and permanently attached to the structure or concrete footings and bases.

Auditors are encouraged to write specifications in great detail, in order to ensure that contractors have sufficient information to make accurate bids and implement recommended improvements so that estimated savings may be achieved.

Although the focus of the audit and the Energy Conservation Plan is on saving energy, the plan will detail any "as-built" repairs needed to ensure the health and safety of the structure's occupants. As stated previously, examples include repairing faulty equipment (such as faulty pilot lights on gas furnaces and/or water heaters), and improper sizing and installation of combustion appliance vent piping.

Mandatory minimums for equipment replacements

If auditors recommend replacement of HVAC equipment, they must specify equipment that meets the minimum efficiency standards and other requirements listed below. Auditors may recommend more efficient equipment.

- 1. Furnaces must have an AFUE of at least 92%.
- 2. Boilers must have an AFUE no less than 90%
- 3. Air Conditioners must have a minimum SEER of 14.
- 4. Water heater blankets must be audited for cost effectiveness if they are not present unless such installation is not recommended by the manufacturer or for other safety concerns.
- 5. Carbon Monoxide monitors must be recommended if they are not present.

- 6. All equipment must be installed per the manufacturer's specifications.
- 7. All manuals and warrantees must be left with the customer.
- 8. It is recommended to audit programmable thermostats for effectiveness. If recommended, auditors should clearly educate customers on the proper use of the thermostat.

Cost effectiveness of recommended improvements

In order for projects to be approved for financing through the Efficiency Kansas loan program, all projects must (1) have a Simple Payback within 15 years and (2) projected energy and dollar savings must be realized within the "life-cycle" of the equipment, which can not exceed 15 years for the purpose of calculating the Simple Payback. Even though a particular item may take longer than 15 years to pay for itself strictly on its own savings, other improvements may help contribute savings that allow the entire project to pay for itself in 15 years. The Simple Payback calculation should be based on the prevailing marginal utility rates for each source of energy saved.

The life-cycle of equipment is defined by the Database for Energy Efficient Resources (DEER) of the California Energy Commission (available online at <u>http://www.energy.ca.gov/deer/</u>). Measures that require more than 15 years to provide a Simple Payback may qualify for Efficiency Kansas financing if the customer is willing to buy down some of the project costs (make an upfront payment for the additional costs), so that the total project will meet the 15-year Simple Payback (see Appendix 14 for project budget calculations).

Building report

Auditors shall use the Two Building Report system in REM to provide recommended improvements to customers and in their submission to the Kansas Energy Office. This system shall also be used to determine the estimated savings comparisons between as-built energy usage and post-retrofit energy usage. The original REM Improvement Analysis and RetroFit Report must accompany all Energy Conservation Plans submitted to the Kansas Energy Office.

Permanence of recommended improvements

In addition to the cost-effectiveness criteria outlined above, all improvements must be a permanent fixture to the building in order to be approved for financing through the Efficiency Kansas loan program.

Non-approved improvements

The Energy Conservation Plan may contain items and recommendations that will not be approved by the Kansas Energy Office, but may be valuable for the customer. Such improvements include appliance upgrades or other measures that are not permanently attached to the structure. Savings from these items can not be included in the Simple Payback calculation.

Cost of each improvement

Auditors will include detailed specifications and estimated costs for each recommended improvement in their initial Energy Conservation Plan. The customer authorizes the auditor to submit the Energy Conservation Plan, along with required audit documentation, to the Kansas

Energy Office. The submission should include work specifications for contractors and estimated costs for each item in the Energy Conservation Plan. The Kansas Energy Office reviews the Energy Conservation Plan and notifies the auditor of approval. Customers will be responsible for obtaining final bids for all work (see 2.4 below). These bids are considered final; no requests for additional funds will be approved in the event of cost overruns. Whenever such hazardous conditions are present, auditors may contact the Kansas Energy Office for a waiver of the required prioritized listing.

Projected savings

The Energy Conservation Plan should include a detailed calculation of projected savings, based on actual historical usage, for each fuel source used. Calculations and assumptions should be clearly identified. Auditors will analyze at least twelve (12) months of the most recent utility bill information (electric, gas, propane, etc.) for the purpose of determining accurate savings estimates. Using a 36-month history would provide better accuracy if data is available. Homes lacking 12 consecutive months of their own history may utilize a variance for twelve months of continuous utility usage as outlined in Appendix 20.

Savings and payback projections will be included for each measure individually, as well as for the comprehensive package of improvements. Auditors shall complete and submit the Energy Savings Report (Appendix 15), by utilizing the REM 2 Building File Report, which provides for this calculation through the REM Fuel Summary report.

Monthly costs (utility track only)

Auditors will calculate the monthly program charge that will be included on utility customer's monthly bills (see Appendix 14 for more information on calculations). In order to qualify for Efficiency Kansas financing, the repayment term can not exceed 15 years (180 months) and the amount of the monthly charge can not be more than 90% of the projected average monthly savings. In other words, the monthly charge for a project with projected average monthly savings of \$100 may not exceed \$90. Note that the calculation of savings will be based on estimated reductions in both electricity and natural gas usage, where applicable. The monthly charge will also include a \$2.00 monthly fee to cover Kansas Energy Office administrative costs and may also include an administrative fee for the Utility.

Health and safety considerations

Auditors will identify and list all combustion appliances and systems, the test performed, and any repairs or replacements necessary to ensure the health and safety of building occupants. Any mechanical system that is found to be operating with a cracked heat exchanger, unrecoverable back-drafting, spillage or other situations that cause carbon monoxide to contaminate the indoor environment must be corrected prior to applying any improvement measure that will tighten the thermal boundary. Thermal boundary improvements, such as air-sealing and insulation, must not be installed prior to the correction of or replacement of hazardous conditions existing with mechanical equipment.

Auditors and contractors will ensure that minimum air ventilation guidelines as per ASHRAE 62-89 have been met during both test-in and test-out procedures to provide for the proper amount of air changes per hour.

Combustion appliance zone (CAZ) testing must be performed at a level equal to or exceeding guidelines established by BPI, RESNET, and other DOE funded research. Documentation of the worst case CAZ testing must be included along with required HVAC forms.

Auditors will recommend installation of carbon monoxide detector if one is not currently installed within the dwelling.

Audit expiration

Audits and Energy Conservation Plans shall expire twelve (12) months from the date printed on the audit report. Customers who do not elect to move forward with a project during this time frame will be required to have another audit, should they wish to access Efficiency Kansas financing through either the bank or utility track.

Fuel switching (utility track only)

If the Energy Conservation Plan recommends improvements that necessitate a change in the type of fuel currently used (for example, a gas furnace being replaced by an air-source heat pump), the Audit Report must include the costs and projected energy savings for both the recommended equipment and fuel, and costs and savings associated with updated equipment using the current fuel source.

Liability

Auditors must include the following language on all contracts, paperwork, and the Audit Report provided to the customer: "The Kansas Corporation Commission (KCC) does not endorse, approve, or recommend any energy auditor, contractor or subcontractor associated with the Audit Report, or energy efficiency improvements. No guarantees or warranties, express or implied, are made by the KCC or the Kansas Energy Office with respect to any audit report, estimated savings, proposal for improvements, contract for improvements or any work or equipment included as part of the customer's energy efficiency project funded through the Efficiency Kansas revolving loan program. It is recommended that customers exercise due diligence in the selection of an energy auditor or contractor prior to entering into any contract or agreement for energy efficiency improvements. Customers may request references of an energy auditor or contractor and should always insist that any guarantees and warranties represented by an energy auditor or contractor, either for workmanship or equipment warranties, are provided in writing. The KCC and the Energy Office are not liable for any intentional, criminal, or negligent acts or omissions of the auditor or contractor. The KCC and the Energy Office make no representation of warranty of any kind, expressed or implied as to the quality of the work done by independent energy auditors."

Mandatory Audit Information and Submittals

Every Efficiency Kansas energy audit report must include the following specific information (see Project Submittal Checklist, Appendix 17):

1. Auditor Identification Verification (see Appendix 3)

- 2. Notice of Disclosure (see Appendix 4)
- 3. If applicable: Customer Agreement form, as required by Kansas Energy Office rebate or subsidy programs (see website for updated rebate and subsidy program details).
- 4. Computerized Audit: Include software name and version number.
- 5. Site Data Collection Forms (see sample in Appendix 6): This information should be thorough and clearly indicate all measurements, notes, conditions, and computer data inputs. It is necessary that this information be precisely detailed with information that would allow the re-creation of the entire audit at any future date.
- 6. Photos: Portrait elevation views of all sides of the building.
- 7. Mechanical Testing Forms and CAZ worst-case test results. (All appropriate forms are located in Appendix 8).
- 8. Unvented Space Heater Agreement (see Appendix 7).
- 9. Preliminary/Estimated Energy Conservation Plan.
- 10. Savings Calculations as defined in Appendix 14.
- 11. Energy Savings Report (Appendix 15).
- 12. Historical Fuel Consumption: Customers shall provide auditors with the most previous 12 consecutive months of utility information for each fuel source used in the structure and will provide customers with unit costs, average use, and average costs (annual and monthly) for each fuel source. Auditors will base the average fuel costs on this 12-month average. Auditors may obtain a signed fuel data release form from the customer and include this with the Energy Conservation Plan reports to the Kansas Energy Office (see Appendix 2).
- 13. Contractor Bids for all specified improvement measures.
- 14. Terms and Conditions Agreements.
- 15. Davis Bacon Acknowledgement (if applicable).
- 16. Revised Energy Conservation Plan, based on actual bid pricing.
- 17. Building File Report from REM/Rate or REM/Design.
- 18. REM Improvement Analysis.
- 19. REM RetroFit Report.

Auditors should provide customers with the appropriate number of the Contractor Terms and Conditions Forms (see Appendix 10) when they present the Energy Conservation Plan to the customer. If the project is a small business, the auditor should provide customers with the appropriate number of Davis-Bacon Acknowledgment Forms. As discussed in Sections 3 and 4, it is the customer's responsibility to solicit bids from contractors (these will be included in the information they provide to the utility or lender).

2.4 Bids for Recommended Improvements

Customers are responsible for soliciting bids for each of the recommended improvements they wish to implement. They will use the detailed specifications included in their Audit Report to inform contractors of specific requirements. Customers should seek final bids from contractors, as any costs in excess of the approved amount will be the customer's responsibility. Customers

will also provide contractors with the Contractor Terms and Conditions forms (which should have been provided by the auditor).

For projects in small businesses, selected contractors must sign the required Davis-Bacon Acknowledgment (see Appendix 12). As noted earlier, projects in homes will not have to adhere to Davis-Bacon, whereas small business projects must adhere to Davis-Bacon.

Customers are not required to take the lowest bid, but the amount spent on the improvement must meet the cost-effectiveness standards discussed in section 2.3. Customers must have received final bids from contractors following Kansas Energy Office approval of the Energy Conservation Plan and prior to arranging financing with the partner lender or utility. The customer must have had all contractors sign the Contractor Terms and Conditions form (Appendix 10), and if the project is a small business, the required Davis-Bacon Acknowledgment Form (Appendix 12).

After receiving bids, customers will provide these to the auditor for the Energy Conservation Plan to be updated with accurate cost data.

Contractor Requirements

Under no circumstances will the Kansas Energy Office finance more than the maximum amount approved in the Energy Conservation Plan. Contractors' invoices should not exceed accepted bids, unless they have written approval from the customer to deviate from the original bid.

All contractors and crew members will be responsible for complying with the EPA's Renovation Repair and Painting (RRP) regulations, as enforced by the Kansas Department of Health and Environment. More information can be found online (<u>www.epa.gov/lead/pubs/renovation.htm</u>). Contractors should also reference the additional information included in EPA Final Rule [under the authority of 402 c 3 of the Toxic Substances Control Act (TSCA)], and New Lead Based Paint Renovation, Repair and Painting Program requirements (40 CFR 745, Subpart E), issued April 22, 2008 (73 FR 21692).

As noted above, all small business projects funded through the Efficiency Kansas revolving loan program are subject to requirements of the Davis-Bacon and Related Acts (DBRA). Each contractor that provides a bid on a project in a small business is required to provide a signed copy of the Davis-Bacon Acknowledgment form (see Appendix 12).

2.5 Post-retrofit Audit

Auditors must perform a post-retrofit audit to ensure that all measures have been installed properly as designed by the audit. The post-retrofit audit will include the following:

- 1. Examination of all components of the approved Energy Conservation Plan to ensure they were installed properly.
- 2. Performance of a blower-door test, ensuring strict adherence to ASHRAE Standard 62-89 for minimum air change calculations. Record the Blower Door test reading on the Certificate of Project Completion.

3. Performance of combustion appliance zone testing; this test should be performed at a level equal to or exceeding guidelines established by BPI, RESNET, and other DOE funded research. Documentation of test-out must be sent to the Kansas Energy Office.

The auditor is responsible for documenting any safety concerns or improper installation in the post-audit report, which is delivered to the customer and Kansas Energy Office with the Certificate of Completion. Auditors should clearly indicate remedies for any safety concerns or improper installation so a customer may correct these. Auditors should indicate that any item that is improperly installed may cause health and safety concerns or result in the measures not producing the anticipated savings.

Upon completion of the post-retrofit audit, auditors will sign and submit the Efficiency Kansas Certificate of Project Completion (Appendix 16) to the customer, whose signature is also required (along with the signature of the partner lender or utility) for project to be considered completed.

2.6 Monitoring by the Kansas Energy Office

The Kansas Energy Office will monitor projects on a continuing basis to ensure that Efficiency Kansas Participants receive excellent service. This monitoring will include (1) reviewing all Audit Reports, including Energy Conservation Plans, prior to approving projects for financing; (2) performing random "performance" audits before or after the project's completion; and (3) performing random interviews with customers to measure their satisfaction and to determine ways to improve the program.

Should the Kansas Energy Office find unsatisfactory work, incomplete audits, or other problems causing customers to be unsatisfied, auditors and contractors may be barred from further participation in the program.
Section 3: Guidelines for Customers

3.1 Getting Started

As discussed in Section 1, Kansans can access the Efficiency Kansas loan program in one of two ways—through Partner Utilities and Partner Lenders. In both the lender and utility tracks, 100% of the project cost will be financed through the Efficiency Kansas loan program, up to a maximum of \$20,000 for improvements in existing homes and \$30,000 for improvements to existing small commercial and industrial structures.

Whether accessing Efficiency Kansas financing through Partner Lenders or Partner Utilities, customers should first contact the partner to verify their eligibility for the program (see Section 1.2).

A checklist for customers has been included as Appendix 1 to assist in recognizing the steps as well as customer responsibilities throughout the process.

3.2 Arranging for an Energy Audit

Customers must use an Efficiency Kansas Auditor. An updated list of Efficiency Kansas certified auditors can be found at **www.efficiencykansas.com**. Customers must contact the auditor directly and arrange for the energy audit of their home or small business.

Obtaining Utility Information

Before contacting auditors, customers must obtain their electricity and natural gas (or other heating source) usage for the previous 12 months from their utility providers. It is the customer's responsibility to obtain this information from the utilities. This information will be needed in order for the auditor to calculate estimated savings for proposed improvements.

Selecting an Auditor

Customers may select any energy auditor from the list of qualified auditors maintained by the Kansas Energy Office and posted on the Efficiency Kansas website (www.efficiencykansas.com). Customers are responsible for paying for the energy audit, regardless of whether the recommended project is approved by the Kansas Energy Office for Efficiency Kansas financing or whether they decide to move forward with an approved project.²

To ensure that they receive the comprehensive audit required by the program, customers are to verify that the individual performing their audit is an Efficiency Kansas qualified auditor (all such auditors will be given an official photo ID by the Kansas Energy Office) (see Appendix 3). Before agreeing to the audit, customers should also ask the auditor to fully disclose what the audit will cost. The price should include the post-retrofit audit, and reporting any and all data required by the Kansas Energy Office and detailed in this Program Manual.

² The KCC may approve meter-based programs in which the utility pays for the all or a portion of the audit cost.

Auditors are required to disclose any potential conflicts of interest that may arise as a result of their offering certain services or equipment. Customers are encouraged to ask auditors for this disclosure (Appendix 4).

3.3 Selecting Improvements and Soliciting Bids

Upon receipt of the Audit Report, customers will select the improvements to be included in their Efficiency Kansas project. The Energy Conservation Plan provided to the customer will include a list of improvements prioritized in order of cost-effectiveness—that is, those with the quickest payback will be at the top of the list. Customers are not required to implement all the recommended improvements, but they must start with the improvements at the top of the list and work down.

Once customers have selected the recommended improvements they wish to implement and the Energy Conservation Plan has been approved by the Kansas Energy Office, they will solicit bids from contractors of their choice to perform the work required to implement the improvements in their proposed project. Customers should be sure to receive final and complete bids, as no change orders increasing the price will be allowed after they've submitted their Energy Conservation Plan for approval. Customers wishing to perform their own work on items on the prioritized list shall follow the guidelines in Subsection 3.0 (Self-Performing Measures). No materials can be purchased by anyone prior to the Energy Conservation Plan being approved by the Kansas Energy Office.

Auditors should provide customers with the appropriate number of the Contractor Terms and Conditions forms (see Appendix 10) when they present the Energy Conservation Plan to the customer. Customers should ask all contractors to sign this form and submit with their final bids.

Customers seeking Efficiency Kansas financing for projects in small businesses should also be aware that these projects are subject to Davis-Bacon and Related Acts (DBRA). Any contractor that wishes to provide a bid on such projects will need to include the Davis-Bacon Acknowledgment Form with their bid (see Appendix 12). Residential projects are not required to adhere to Davis-Bacon.

All contractors and crew members will be responsible for complying with all requirements of the EPA's Renovation Repair and Painting (RRP) regulations as enforced by the Kansas Department of Health and Environment (see Section 2 for more details).

After receiving final bids from contractors, customers should submit the final bid information to auditors to update the Energy Conservation Plan.

3.4 Submitting Energy Conservation Plan for Approval

After completing the audit, auditors will submit the Energy Conservation Plan and audit documentation to the Kansas Energy Office. The Plan will include estimated costs for the improvements. The Kansas Energy Office will review the plan and notify auditors of approval. The auditor can then instruct the customer to pursue bids for the work.

After receiving bids from contractors, customers will next need to provide the hard bids to the auditor so that they may update the Energy Conservation Plan with actual pricing. The following items are required for this submission: (1) the full Audit Report—including Energy Conservation Plan—indicating the improvements they wish to include in their Efficiency Kansas project; (2) the actual costs of the specific improvements; (3) signed Contractor Terms and Conditions forms; and (4) any other information received from the auditor and contractors.

Once the Energy Conservation Plan has been approved and work has begun, customers will need to keep track of the total number of man-hours worked by each contractor on the project (contractors will be able to provide this information to the customer when submitting their invoices). This information is required by the U.S. Department of Energy and will need to be recorded on the Certificate of Project Completion, when project is concluded.

3.5 Submitting Certificate of Project Completion

After contractors have completed their work and the auditor has performed the required postretrofit audit, the customer and auditor will sign the Certificate of Project Completion, which the customer will submit to the partner lender or utility through which they are accessing the program (Appendix 16).

3.6 Repaying the Efficiency Kansas Loan

Regardless of whether they access Efficiency Kansas financing through partner lenders or utilities, customers are responsible for making monthly payments until the traditional loan or meter-based obligation has been paid in full.

Customers accessing the program through Partner Lenders have the option to make additional payments to pay the loan off earlier than the specified term; lenders may not penalize customers for early repayment.

Customers accessing the program through Partner Utilities will pay the program charge on their monthly utility bill. This charge will include the cost of the approved project and the administrative fees (see discussion of program charges in Section 4.1). Because the program charge in KCC-approved meter-based programs is considered "regular utility service," customers who do not pay their bill, or pay only a portion thereof, are subject to having their utility service disconnected. The utility must notify the customer of the amount of the program charge before the Kansas Energy Office sends project funds to the utility. The total of all charges affiliated with the Efficiency Kansas loan program on the customer's utility bill cannot exceed 90% of the projected savings.

Customers may elect to buy-down the cost of improvements with their own funds to allow projects to meet the 15-year payback requirements. However, such buy-down will not impact the calculation of the priority listing of improvements (see Section 3.2).

3.7 Maintenance of Equipment

Customers are responsible for all maintenance of equipment and should solicit and receive information on maintenance from the contractors that install the equipment. Customers should recognize that properly maintained equipment will provide better results and more sustained savings. Should the equipment fail, customers are still responsible for paying the monthly program charge on their utility bill.

3.8 Disclosure Requirements (Utility Track Only)

Customers that agree to participate in the program are required to disclose to subsequent occupants any obligation that remains on the meter (i.e., remaining monthly payments). As a condition of participation in their meter-based program, Partner Utilities will have customers sign disclosure agreements (see discussion of disclosure and notification requirements in Section 4.1).

Owner-occupants

Customers who own the home or small commercial/industrial structure must sign an agreement with the utility stating that they will disclose the meter obligation upon sale of the structure. Failure to make proper disclosure could result in the customer being responsible for immediate repayment of the remaining balance.

Rental properties

Landlords must disclose an existing meter obligation to tenants prior to their signing a lease if the tenant will be responsible for the utility bill.

Landlords and tenants

Tenants wishing to participate in the program must have agreement from landlords in order to participate in Utility meter-based program. Conversely, landlords must have agreement from current tenants (unless the landlord also pays the utility bills). As noted above, landlords must also disclose to all tenants an existing meter obligation prior to the tenants' signing a lease.

3.9 Self-Performance and Do-It-Yourself Regulations

The Efficiency Kansas Loan Program will allow certain materials to be purchased and installed by the customer. Customers interested in performing some of the work items from their custom Energy Conservation Plan must abide by certain rules and regulations. They should inform their partner lender or utility of this interest when making initial arrangements for financing.

Risks to Consider

Before considering any self-performance construction activities, customers should understand that there are inherent risks involved in self-performance. If the proper materials and installation guidelines are not followed, the risk of improper installation is high. Improper installation can

negatively impact the estimated savings that were calculated by the audit and factored into the Energy Conservation Plan. Moreover, all work must be done in accordance with all local, state, and federal regulations.

The customer should fully recognize other risks involved in assuming the role of a contractor in self-performing improvement measures as well as impacts on the potential results. Contractors have insurance to cover the risk of liability, product installation, property damage, fire and health dangers; the customer may not be protected against such risks in a do-it-yourself situation.

Customers should keep in mind the following self-performance and DIY guidelines:

- 1. Only materials that are purchased and installed will be paid for by the program.
- 2. Receipts for installed products may be submitted at the project completion, or intermittently, as allowed by the customer's partner lender or partner utility.
- 3. No tools that are needed to complete any improvement measure will be reimbursed through the program.
- 4. Labor will not be paid for any portion of the project that is performed by the customer.
- 5. Materials purchased must be high quality and have the expected life expectancy specified by auditor.
- 6. Any damage done to the structure, items, or possessions while implementing an energyefficiency measure will not be covered by Efficiency Kansas funds.
- 7. Any item required by the manufacturer to be installed by a skilled, trained professional must not be installed by a customer, without proper certifications that have been pre-approved by the Kansas Energy Office.
- 8. All work must be done in a professional manner and within a short time-frame.
- 9. Pre-purchasing of items is not allowed. Items purchased prior to the approval date for the Efficiency Kansas project will not be reimbursed.
- 10. Any item installed in an unapproved manner will not be approved for payment with Efficiency Kansas funds

Allowable Work Items

Any work item that a customer is considering for possible self-performance shall be approved by the Kansas Energy Office during the course of the audit review. Customers must fill out Appendix 11, "Self-Performance Terms and Conditions," when proposing to self-perform work. While a complete list of allowable work items cannot be provided, the following list provide examples of the types of work items that will be allowed for self-performance:

- 1. Install reinforcing mesh and mastic at ductwork splices and connections.
- 2. Install weather-stripping and sweeps at exterior doors.
- 3. Install insulation in attics and one-side walls (caution knob-and-tube wiring).
- 4. Caulking and sealing holes and openings to minimize air infiltration.
- 5. Handyman and carpentry items related to sealing and closing the envelope.

- 6. Insulating exposed ductwork and installing water heater blankets.
- 7. Insulating rim joist cavities and draping insulation on concrete walls.
- 8. Insulating foundation walls in crawlspaces and frame-floor assemblies.
- 9. Installing vapor barriers over the ground in crawlspaces.

Work Items Requiring Special Consideration

Certain weatherization work activities will not be allowed to be self-performed by the customer, without proper certifications and/or professional training licenses; these certifications and licenses must be reviewed and approved by the Kansas Energy Office. While a complete list of these items cannot be provided, examples of some of these work items are listed below:

- 1. Dense packing walls with tube filled insulation equipment.
- 2. Installing furnaces, boilers, and air conditioning equipment.
- 3. Installing electrical, plumbing, and gas piping.

Impact on Auditors

If customers elect to self-perform some of the work, auditors will have to be receptive to customer wishes and adjust the overall audit accordingly. Customers may want to purchase some of the materials out-of-pocket and not include those costs within the loan. On the other hand, customers may also want to purchase the materials through the loan funds. Auditors will need to work closely with customers to develop these particular lists of information and make sure that all of the other construction work activities have been properly assigned to individual contractors. This information will become an important part of the overall audit that must be reviewed by the Kansas Energy Office.

Bids are required for all items recommended by the auditor in the Energy Conservation Plan. For customers intending to self-perform certain improvement measures, bids will be needed for all materials needed to complete the work. No labor charges will be accepted or paid for with the project funding. Customers are required to prepare a list of materials and the actual costs, including all taxes and fees, to submit to auditors so that they can complete the Energy Conservation Plan using final pricing. Change orders are not allowed. Estimated costs for materials must be adhered to. Customers should plan the material purchases wisely to avoid a shortage of available funds to complete improvement measures.

Auditors are responsible for documenting any safety concerns or improper installation issues in the post-audit report, which is delivered to the customer and Kansas Energy Office with the Certificate of Completion. Auditors should clearly indicate remedies for any safety concerns or improper installation so a customer may correct these. Auditors should indicate that any item that is improperly installed may cause health and safety concerns or result in the measures not producing the anticipated savings.

Impact on Partner Lenders and Utilities

In the event that customers purchase materials (only after Kansas Energy Office approval) with out-of-pocket funds and want to include these costs in the loan, the partner lender or partner utility may require that the customer submit the receipts for these purchases to the partner/lender

so that the customer can be reimbursed. There may also be instances where customers may need a joint checking arrangement from the partner lender/utility that would allow customers to work with a lumber yard or supply house and pay for the materials with a check made out jointly to the customer and the vendor. Partner lenders/utilities may implement whatever guidelines they deem necessary to protect their interests.

Section 4: Guidelines for Utility Track

4.1 Utility Requirements and Responsibilities

Utilities are considered Efficiency Kansas "Partner Utilities" if (1) they offer programs that facilitate energy conservation improvements in residential and small commercial/industrial that are consistent with the KCC goals described in Section 1.1 and (2) plan to either utilize Efficiency Kansas financing or collect loan payment on utility bills on behalf of Partner Lenders.

Programs offered by Partner Utilities are likely to vary, with some utilities offering full, meterbased programs, similar to the existing How\$mart® program at Midwest Energy, and others offering a program that is not meter-based. In all instances, however, all projects receiving funds through Efficiency Kansas must be repaid in 15 years (that is, 180 monthly bill payments) or less.

Utilities subject to the jurisdiction of the KCC may become Partner Utilities upon approval of the utility's program and associated tariffs by the Commission. Non-jurisdictional utilities may become Partner Utilities upon approval of the utility's program by the Kansas Energy Office and upon signing a Memorandum of Agreement between the utility and Kansas Corporation Commission.

Eligibility Screening

Utilities are responsible for establishing the eligibility of interested customers. To be eligible for Efficiency Kansas financing, utility customers (1) must be current on their utility payments and (2) must not have had their utility service disconnected in the 12 months prior to their application for participation. Customers who do not have 12 months history with a utility will be asked to provide payment history with a previous utility. Customers currently on payment plans (to repay past bills) do not meet these eligibility requirements.

Subject to approval from the KCC and Kansas Energy Office, utilities may use additional eligibility criteria.

Definition of residential and commercial customers

Residential customers are defined as all customers taking service under the utility's Kansas residential tariff.

Commercial customers must subscribe for service under one of the utility's applicable Kansas commercial or industrial service tariffs and use residential-sized HVAC equipment in their buildings.

Rental properties

For rental properties, whether residential or commercial, the utility customer may be either the landlord or the tenant. In either instance, the eligibility screening is the same as outlined above. For rental properties, the utility will also be required to ensure that both the tenant and landlord are informed and agree to participation in the meter-based program and ensure that all required

measures for disclosure and notice are met (see below for discussion of disclosure and notification requirements).

Directing Customers to Energy Auditors

Utilities will direct eligible customers to the list of Efficiency Kansas qualified auditors (or to the utility's qualified employee auditors, provided a utility has received a waiver from the KCC). Customers will select an auditor from this list or utilize the utility employee auditor to perform the required energy audit and develop the Energy Conservation Plan.

"Qualified auditors" are those who have (1) met the criteria established by the Kansas Energy Office and (2) requested that they be included in the listing of qualified auditors. This list will be maintained by the Kansas Energy Office and be available on the Efficiency Kansas web site (www.efficiencykansas.com). All energy auditors on the Efficiency Kansas qualified auditor list will have undergone training and been certified by one of the qualified training institutions (see Section 2.1).

Qualified energy auditors are not recommended, approved, or endorsed by the Kansas Energy Office or the Kansas Corporation Commission.

Facilitating Approval of Energy Conservation Plan and Customer Projects

Following the energy audit, customers will review the prioritized recommendations outlined in the Energy Conservation Plan and decide on the scope of the project. Customers will authorize auditors to forward the Energy Conservation Plan to the Kansas Energy Office for review.

Following the Kansas Energy Office review, the utility will notify the customer of approval or disapproval of the proposed energy-efficiency improvement project. Once the Kansas Energy Office has approved a project, no adjustments can be made in the project costs.

Once the Energy Conservation Plan has been approved by the Kansas Energy Office, the Utility will sign the necessary agreements with the customer. These agreements will include requirements for the customer to disclose the meter-based obligation to subsequent occupants. (See discussion of Disclosure and Notification Requirements below.)

Once all necessary agreements have been signed, the utility will inform customers that contractors can begin work on approved projects. Utilities may work with customers to select contractors. In all instances, the utility will be responsible for paying contractors (as detailed below).

Verifying Completion

After contractors have completed their work and the auditor has performed the required post-test, the customer and auditor will provide the utility with a signed Certificate of Project Completion (Appendix 16). The utility will sign the Certificate of Project Completion, indicating their acceptance of the auditor and customer's assurances, and send the certificate to the Kansas Energy Office. Utilities have the option to conduct an on-site inspection before signing the Certificate of Project Completion.

Receiving Efficiency Kansas Funds from the KCC

Utilities will receive funds from the KCC based on a regular monthly payment schedule (they will need to first complete Utility Contact Form, Appendix 18). Payment will be based upon the project costs submitted to the KCC Kansas Energy Office with the Energy Conservation Plan. See detailed discussion of repayment of funds to the KCC below.

Paying Contractors

Upon receipt of Certificate of Completion, the utility will promptly pay all contractors for completed work.

Placing Charge on Bill

After paying the contractors for all approved project costs, the utility will place the program charge on the customer bill. The customer will be notified of this charge *prior* to the utility submitting the Energy Conservation Plan to the Kansas Energy Office, as required in the Energy Audit Specifications (see Section 2.2 of this manual).

Term of the obligation

The maximum term of the meter-based obligation cannot exceed 15 years (180 bill payments). Utilities and customers may choose a shorter repayment period, provided all other requirements are met.

Program charge as a percentage of projected savings

In calculating the program charge, the utility will assume that all savings are annualized, resulting in a level (or average) monthly repayment. Under no circumstances will the program charge exceed 90% of the estimated total savings from all fuel sources (see discussion of administrative fees below). Utilities may provide only one fuel type (e.g., natural gas or electricity); however, the calculation of projected savings will include all savings from all fuels.

Utility administrative fees

Utilities will be allowed to charge administrative fees to cover the costs of administering their program. Regulated utilities must have their administrative fees included in the tariff for the program, which is approved by the Kansas Corporation Commission. Non-regulated utilities must submit their proposals for administrative fees, including estimated costs to operate the program, to the Kansas Energy Office.

Before customers agree to move forward with the project (and agree to repaying project costs as part of their monthly utility bill), they must be informed by the utility that the monthly program charge will include the Kansas Energy Office and utility administrative fees.

The Kansas Energy Office reserves the right to examine the administrative fees charged by regulated and non-regulated utilities participating in the Efficiency Kansas program.

Kansas Energy Office administrative fees

The program charge will include a \$2.00 administrative fee that will be collected by the utilities and paid to the Kansas Energy Office. The customer must be informed of the Kansas Energy Office administrative fee *prior* to the customer agreeing to the project. The program charge, including the administrative fees of the utility and Kansas Energy Office, cannot exceed 90% of the expected savings.

Level payment plan option

Customers may elect to enter into a level, or average, payment agreement with the utility. Customers who elect not to have a level payment plan should understand that their actual savings may vary monthly and seasonally. The program charge will be a level payment, regardless of when actual savings are achieved.

Payment-in-full option

Utilities are required to offer customers the option to pay in full any remaining balance, at any time during the repayment term. There will be no penalty or extra charge for customers who choose to repay the obligation in full.

If a customer sells or transfers ownership of property subject to meter-based payments for energy efficiency improvements, the customer may pay the remaining balance in full, or the new property owner may complete the paperwork to assume the remaining balance.

Repayment of funds to KCC

Utilities are responsible for remitting to the KCC the full amount of the project cost received from the Efficiency Kansas revolving loan fund. The KCC will allow utilities to choose between two repayment options, designated Option 1 and Option 2. As described in more detail below, the options differ in how funds are remitted to the utility and how they are repaid by the utility to the KCC.

Option 1

In this option, the utility will receive funds from the KCC, on a regular monthly schedule, only after the Kansas Energy Office has approved the project. *Under Option 1, the utility is responsible for submitting monthly payment to the KCC, only upon receipt of payment from the customer.* See discussion of customer default below.

Frequency

Utilities will make regular monthly payments to the KCC. However, utilities will only submit payments for those meters at which the customer has paid the monthly bill. If a customer has not paid the bill, the utility will not be required to remit payment for that meter to the KCC, until payments resume.

Reporting

Because this option allows for deferral of payments to the KCC, the utility will be required to report the status of each meter obligation—that is, the location of the meter and the total

remaining obligation—to the KCC on a monthly basis. Likewise, the utilities will be required to identify which meter obligations have been paid and which have not.

Case of default

In the event that customers fail to make their monthly payments of the program charge, the utility will be required to report to the KCC, on a monthly basis, information regarding the collection status and disconnections resulting from the non-payment. The utility is expected to make every effort to collect payment of delinquent program charges and to exercise as much due diligence with collection of Efficiency Kansas revolving loan program funds as they would their own capital. At such time as the utility determines that it has exhausted its means of collection, the utility will notify the Kansas Energy Office and submit the "Verified Statement" form, as stipulated in the Memorandum of Agreement between the Utility and the KCC.

Option 2

If utilities select this option, they will receive funds from the KCC earlier in the process—upon approval of the Energy Conservation Plan by the Kansas Energy Office.³ Unlike Option 1, *under Option 2, the utility is responsible for submitting monthly payment to the KCC, regardless of whether the customer has paid the utility bill.* Utilities will begin making monthly payments to the KCC, once the Certificate of Project Completion has been signed.

Frequency

Utilities will make regular monthly payments to the KCC for all meter-based program charges, whether the utility has received payment from their customers.

Reporting

Under this option, the utility reports the status of each meter-based obligation on a quarterly basis (not a monthly basis, as required in Option 1). The utility will submit a quarterly report to the KCC, identifying the location of the meter and total remaining obligation.

Case of default

In the event of nonpayment by the customer, the utility will still remit payment to the KCC until the full cost of approved project has been repaid. The utility will be responsible for collection from customer and can request recovery of bad debt in a regular rate case; such recovery may or may not be approved by the Commission.

Revert to Owner

Regardless of the repayment option chosen, utilities will be required to continue charging the program charge, even for meters that have a revert-to-owner clause. As long as a bill is generated during the 15-year term, the bill must include the program charge.

³ In the event that approved project is not completed within twelve (12) months of the Energy Conservation Plan approval, the utility must return the funds to the KCC.

Disclosure and Notification Requirements

To ensure that subsequent occupants of a residential or small commercial/industrial structure receive full and timely notification of the program charge they will be assuming (i.e., the remaining obligation on the meter), the utility is required to provide written notification of this obligation to customers when service is initiated at locations that already have meter-based obligations. The utility must also require all customers to sign an agreement requiring similar disclosure by the customer to subsequent occupants. The KCC will require such agreements to be part of approved program tariffs.

UCC filing

In addition to the disclosure and notification requirements outlined above, the utility will also be required to file a UCC or other KCC-approved notice filing for each property with a meter-based obligation. The utility will be responsible for ensuring that any such UCC filing is renewed to ensure that proper notification occurs. Alternatively, if the utility can provide an affidavit to ensure notification that is approved by the KCC and Kansas Energy Office, such affidavit may be used in place of the UCC filing.

Additional public information and outreach

The Kansas Energy Office will coordinate with utilities and others (e.g., realtors and their trade associations in areas offering meter-based programs) to increase public awareness.

Prudent Procedures

In establishing the guidelines for meter-based energy efficiency programs, utilities must properly document all transactions and include notices to the customer of the following: (1) interest rates, (2) repayment terms, (3) fee structure, (4) collateral requirements, and (5) procedures for collection and recovery actions. Even if the above are not applicable, documentation must clearly state that they are not applicable (for example, state that interest rate is 0%). As discussed above, UCC and any other applicable notice requirements must be filed to provide sufficient notice to future occupants and owners. Proper documentation will be accomplished by submission of Efficiency Kansas program forms, which will be developed by the KCC and included in a subsequent version of the Program Manual.

Reporting Requirements

In addition to the monthly reporting requirements outlined above (see Repayment of Funds to KCC), utilities are required to provide quarterly reports to the Kansas Energy Office as required by the Department of Energy, detailing (1) the number and value of projects funded through the program; (2) number of buildings retrofitted, by sector; (3) square footage of buildings retrofitted, by sector; (4) projected energy savings (MWh, mmcf); and (5) number of jobs created or retained as a result of KCC funding.

4.2 KCC and Kansas Energy Office Responsibilities

Management and Oversight

The Kansas Energy Office will manage all aspects of the Efficiency Kansas loan program for both the utility and lender tracks. The Kansas Energy Office will ensure that all program participants, including utility customers, receive high-quality service at each step of the process.

The KCC Utilities Division will review the applications of regulated utilities for a meter-based program and make recommendations to the Commission regarding approval of the program. The application for a meter-based program should include the content outlined by the Commission in Docket No. 08-GIMX-441-GIV, Appendix A (available on the KCC web site at http://kcc.ks.gov/scan/200811/20081114142730.pdf). The KCC Utilities Division will also coordinate the evaluation, measurement and verification associated with all utility-sponsored energy efficiency programs.

Review and approval of Energy Conservation Plan

The Kansas Energy Office will review all Energy Conservation Plans to ensure that auditors have performed the audit properly, that savings estimates are appropriate and realistic, that project costs are not unreasonable, and that health and safety standards have been met. See Section 2 for audit specifications and other related information.

Field inspection

The Kansas Energy Office will perform random field inspections to ensure that projects have been properly executed. Inspections will include full audits, inspection of systems installed, and interviews with customers.

Payment to utilities

The KCC will make payments available to the utility on a monthly basis. Depending on the option selected by the utility (see Section 3.1), the funds will be released upon the Kansas Energy Office's approval of the Energy Conservation Plan (Option 2) or upon receipt of the Certificate of Project Completion (Option 1).

Maintaining online information

The Kansas Energy Office will be responsible for ensuring that information on Efficiency Kansas web site is accurate. Such information will include, but not be limited to, the listing of Efficiency energy auditors and of Partner Lenders and Partner Utilities.

Tracking availability of Efficiency Kansas funds

The Kansas Energy Office, working with the KCC's Fiscal Division, will track the availability of funds in the Efficiency Kansas revolving loan fund. A waiting list will be established if funds are not immediately available, and payments to utilities will be processed from the waiting list in the order in which they were received.

4.3 Coordinating with Partner Utilities on Promotion

The Kansas Energy Office launched its statewide advertising campaign in January 2010, with TV, radio and billboard ads. The ads direct consumers to the Efficiency Kansas website, where they can then identify participating partners and auditors.

To assist Partner Utilities with promoting their programs, the Kansas Energy Office developed brochures and other marketing materials, which are available to all utility partners for their use in promoting Efficiency Kansas and their own meter-based program. The Kansas Energy Office will continue to coordinate with Partner Utilities and assist with development of additional materials, as appropriate.

Partner Utilities will be expected to include the Efficiency Kansas name and brand, along with their own name and brand, in all communications related to the revolving loan program. Customers will contact utilities directly, and Partner Utilities will explain the process and goals of the program.

Branding/Co-branding

Partner Utilities will name and brand their meter-based energy-efficiency program and service separately from the Efficiency Kansas name and brand. The relationship between the utility's meter-based program (and brand) and the Efficiency Kansas loan program (and brand) will be expressed as a partnership. Promotional materials produced by the utility for programs that utilize Efficiency Kansas funds will include language expressing this relationship—for example, Midwest Energy's existing program might be promoted as "How\$mart®, an Efficiency Kansas partner"—and will be required to display the Efficiency Kansas brand.

Section 5: Guidelines for Lender Track

As discussed in Section 1, Kansans can access the Efficiency Kansas loan program in one of two ways—through Partner Utilities and Partner Lenders. In the lender track (as with the utility track), 100% of the project cost will be financed through Efficiency Kansas revolving loan funds, up to a maximum of \$20,000 for home improvements and \$30,000 for improvements to small commercial and industrial structures.

Partner Lenders will offer Efficiency Kansas loans at a *fixed* interest rate of no more than 4% through 2010. Based on market conditions, the Kansas Energy Office may, after December 31, 2010, adjust the interest rate cap for future loans, but this will not affect the fixed rate of existing loans. The term of these loans may not exceed 15 years (180 bill payments). The Kansas Energy Office will provide rebates to lenders to cover \$250 of loan origination fees.

5.1 Lender Requirements and Responsibilities

Eligible Lenders

In order to participate in this Program, a lender must have its home office or a branch located within the State of Kansas as required by K.S.A. 75-4201(d). Institutions of the Farm Credit System organized under the *Federal Farm Credit Act of 1971* (12 U.S.C. 2001), Savings Banks, Savings and Loan Associations, and Credit Unions with offices located within the State of Kansas are also eligible (see Efficiency Kansas Lender Participation Agreement, available online at the Office of the State Treasurer).

An updated listing of Partner Lenders will be maintained by the Kansas Energy Office on the Efficiency Kansas web site (www.efficiencykansas.com).

Providing Program Information

In many instances, lenders will be the first point of contact for Kansans interested in the Efficiency Kansas loan program and, thus, will need to be able to provide program information to potential participants. The Kansas Energy Office will provide information packets to all Partner Lenders.

Directing Customers to Approved Energy Auditors

Lenders will direct customers (i.e., potential borrowers) to the list of Efficiency Kansas qualified auditors, which will be available online (www.efficiencykansas.com). Customers will select an auditor from this list to perform the required energy audit and develop the Energy Conservation Plan. (See discussion of pre-approval option below.)

Establishing Borrower Creditworthiness

Lenders are responsible for reviewing each borrower's application to determine the borrower's creditworthiness. In the case of default by the borrower (see discussion below), the Lender is responsible for repaying the outstanding principal to revolving loan fund.

Lenders will not make the loan until the Kansas Energy Office has approved the customer's Energy Conservation Plan (see below for discussion of submitting the plan). However, lenders are strongly encouraged to provide customers with pre-approval to eliminate the risk of the customer having to pay for an energy audit and not being approved for financing.

Submitting Energy Conservation Plan

The lender will receive the Final Energy Conservation Plan, which includes the updated pricing gathered from actual bids, from the customer and pass along to the Kansas Energy Office for review. Upon receiving the results of the Kansas Energy Office's review, the lender will notify the customer of approval or disapproval. (If the plan is approved, the Kansas Energy Office will also notify the Treasurer's office at this time, so that funds can be released to the lender; see discussion below in Section 4.4) Costs for approved projects can not be adjusted after the Kansas Energy Office has approved the plan.

In the event that the customer's Energy Conservation Plan does not meet Efficiency Kansas guidelines, the Kansas Energy Office will inform the lender of the reason. Depending on the problem, the customer may choose to correct and resubmit the Energy Conservation Plan to the Kansas Energy Office.

Receiving Efficiency Kansas Funds

Upon receipt of Kansas Energy Office approval, lenders will submit request for funds to the Office of the State Treasurer (see Lender Participation Agreement, available online at the Office of the State Treasurer or the Efficiency Kansas web site). The Treasurer's Office will place a deposit with the lender from the Efficiency Kansas revolving loan fund; the interest rate for each linked deposit will be 0%.

The amount and duration of the linked deposit will be no greater than the amount and duration of the lender's loan to the eligible borrower (and shall not exceed program maximums). See Lender Participation Agreement for more details.

Making Loans to Customers

Upon receipt of Kansas Energy Office approval, lenders will finalize the monthly payment and term of loan, using the simple payback calculations in Appendix 14. The estimated monthly savings must be greater than or equal to the monthly loan payment, which includes both interest and the Kansas Energy Office \$2.00 administration fee.

Submitting Certificate of Project Completion

After contractors have completed work on the customer's approved project, and after the auditor has performed the required post-retrofit audit, the customer and auditor will provide the lender with a signed Certificate of Project Completion (Appendix 16). The lender will sign and send this to the Kansas Energy Office.

Repayment of Funds to Treasurer's Office

Lenders will forward all principal payments for Efficiency Kansas loans to the Treasurer on a quarterly basis and confirm each borrower's outstanding principal balance annually, as stipulated in the Lender Participation Agreement. In the event of default by borrower, the lender is responsible for payment of the outstanding principal on the linked deposit.

Pledging Securities as Collateral

If the total State of Kansas deposits with any lender (from Efficiency Kansas or any other source) exceed the maximum amount insured by the Federal Deposit Insurance Corporation (FDIC) or any other federal agency backed by the full faith and credit of the U.S. Treasury, the lender is required to pledge securities acceptable to the Treasurer as collateral for the amount of the linked deposits plus accrued interest. See Lender Participation Agreement for more details (available online at the Office of the State Treasurer or from the Efficiency Kansas web site).

Reporting Requirements

Lenders are required to provide quarterly reports to the Kansas Energy Office. These reports will consist of the number of hours worked by the lender's staff each quarter.

5.2 Treasurer's Office Requirements and Responsibilities

General Management of Revolving Loan Fund

The Office of the State Treasurer will manage the Efficiency Kansas revolving loan fund, on behalf of the Kansas Corporation Commission (KCC), of which the Kansas Energy Office is a division.

Establishing Eligibility of Partner Lenders

The Treasurer's Office will ensure that all lenders receiving Efficiency Kansas funds meet eligibility requirements, as outlined in Section 4.1 and as stipulated in Lender Participation Agreement (available online at the Office of the State Treasurer and from the Efficiency Kansas web site). Eligible lenders (this includes institutions of the farm credit system, savings banks, savings and loan associations, and credit unions) must have their home office or a branch located within the State of Kansas as required by K.S.A. 75-4201(d).

Releasing Funds to Lenders

Upon receipt of KCC Kansas Energy Office's approval, the Treasurer's Office will release funds to lenders. The Treasurer's Office will ensure that each lender pledges securities for the amount of any deposits that exceed the insurance provided by the FDIC in compliance with K.S.A. 75-4218.

Receiving Funds from Lenders

The Treasurer's Office will collect principal payments from lenders on a quarterly basis and deposit payments in the Efficiency Kansas revolving loan fund. The Treasurer's Office will notify the KCC in the event of customer default on a deposit. In the event of such default, the

lender shall remain responsible for payment of the outstanding balance, as provided in Participation Agreement.

Reporting Requirements

The Treasurer's Office will provide the KCC with quarterly reports that list the number and value of linked deposits placed with Partner Lenders, the number of jobs created or retained at the Office of the State Treasurer (as a result of administration of Efficiency Kansas revolving loan program). This information is required by the U.S. Department of Energy for all State Energy Program initiatives funded through the ARRA.

Invoicing the KCC

The Treasurer's Office will invoice the KCC on a quarterly basis for the recovery of administrative costs, lender fees, and any other transaction charges.

5.3 KCC and Kansas Energy Office Responsibilities

Management and Oversight

The Kansas Energy Office will manage all aspects of the Efficiency Kansas revolving loan program for both the bank and utility tracks. The Kansas Energy Office will ensure that all program participants receive high-quality service at each step of the process.

Review and approval of Energy Conservation Plan

The Kansas Energy Office will review all Energy Conservation Plans to ensure that auditors have performed the audit properly, that savings estimates are appropriate and realistic, that project costs are not unreasonable, and that health and safety standards have been met.

Field inspection

The Kansas Energy Office will perform random field inspections to ensure that projects have been properly executed. Inspections will include full audits, inspection of systems installed, and interviews with customers.

Maintaining online information

The Kansas Energy Office will be responsible for ensuring that information on Efficiency Kansas web site is accurate. Such information will include, but not be limited to, the listing of Efficiency Kansas qualified energy auditors, Partner Lenders, and Partner Utilities.

Tracking availability of Efficiency Kansas funds

The Kansas Energy Office, working with the KCC's Fiscal Division, will track the availability of funds in the Efficiency Kansas revolving loan fund. Following approval of customers' Energy Conservation Plans, funds will be made available to lenders on a first-come first-served basis, based on the date and time loan requests are received by the Kansas Energy Office. A waiting list will be established if funds are not immediately available, and loans will be processed from the waiting list in the order they were received.

Notifying Lenders and Treasurer's Office of Approval

Upon approval of customer's Energy Conservation Plan, the Kansas Energy Office will notify Partner Lender and the Treasurer's Office for each approved borrower.

Reimbursing Treasurer's Office for Administrative and Other Costs

Upon receipt of quarterly invoices from the Treasurer's Office for agreed-upon costs, the KCC will provide payment within 30 days.

5.4 Coordinating with Partner Lenders on Promotion

The Kansas Energy Office launched its statewide advertising campaign in January 2010, with TV, radio and billboard ads. The ads direct consumers to the Efficiency Kansas web site, where they can then identify participating partners.

To assist Partner Lenders with promoting their programs, the Kansas Energy Office developed brochures and other marketing materials, which are available to all utility partners for their use in promoting Efficiency Kansas and their own meter-based program. The Kansas Energy Office will continue to coordinate with Partner Utilities and assist with development of additional materials, as appropriate.

Branding/Co-branding

Partner Lenders will be expected to include the Efficiency Kansas name and brand, along with their own name and brand, in all communications related to the revolving loan program. The relationship between the lender and the Efficiency Kansas revolving loan program will be expressed as a partnership.

The Kansas Energy Office will coordinate, as needed, with Partner Utility staff to ensure that Efficiency Kansas promotion carries a consistent and effective message.

Section 6: Guidelines for Contractors

6.1 Contractor Requirements and Responsibilities

Role of Contractors

Private-sector contractors perform all the work on energy-efficiency projects approved for Efficiency Kansas financing. Contractors are contacted directly by customers, who must solicit final bids for all the work involved in their proposed project before the project can be approved for financing by the Kansas Energy Office (see Section 3, Guidelines for Customers).

Certain projects that are funded through the Efficiency Kansas revolving loan program are subject to Davis-Bacon and Related Acts (DBRA). Under directive from the Department of Energy on January 11, 2010, residential projects will not be required to adhere to Davis-Bacon. However, small businesses that secure financing through the Efficiency Kansas loan program will be required to adhere to Davis-Bacon.

All contractors and subcontractors working on are subject to the requirements of the federal Davis-Bacon and Related Acts (DBRA). This means they must pay workers the Davis-Bacon prevailing wages for the county in which the small business is located. See section 6.3 for detailed information about the Davis-Bacon requirements.

Contractor Qualifications

All contractors are eligible to participate, provided they are operating under current state and federal guidelines regarding labor standards and taxation requirements. The Kansas Energy Office will not pre-qualify contractors nor maintain a list of "participating" contractors.

Preparation of Bids

Contractors will prepare bids based on the specifications included in the Energy Conservation Plan provided by the customer. Contractors may not substitute equipment or change specifications, without written notification from the auditor. Bids provided to customers should be considered final bids, as these bids will be used to determine the total amount financed through Efficiency Kansas. Any additional costs that are not identified in the bids will be the responsibility of the customer. Contractors should also specify any requirements regarding timing and amounts of payments when submitting their bids (see Payments to Contractors, below).

When preparing bids for small business projects, it is important that contractors know and understand the Davis-Bacon requirements of this program. Contractors are responsible for ensuring that they are utilizing the correct wage rate for any particular type of work. Contractors will formulate and deliver bids to customers in the same fashion that they normally utilize. Bids for these projects must be accompanied with a signed Davis-Bacon Acknowledgment form (Appendix 12). See section 6.3 for detailed information about the Davis-Bacon requirements.

All contractors and subcontractors that provide bids to customers for either a residential project or a small business project are required to sign the Contractor Terms and Conditions Form (Appendix 10).

Building permits and local codes

As with any project, contractors working on Efficiency Kansas projects are responsible for securing all appropriate local, city, or county building permits prior to beginning work. The costs of these permits are to be borne by the contractors and should be included in the bid. If a building permit is required, a copy must be provided to the customer. All work must comply with local jurisdictional building codes.

Implementation of work

Customers will be notified by Partner Lenders or Partner Utilities that their Energy Conservation Plan has been approved by the Kansas Energy Office, and then customers will solicit bids. Once customers get financing, then and only then will contractors be allowed to begin implementing the work specified by the Energy Conservation Plan.

Payments to Contractors

Contractors will receive payment for their work either directly from customers or from partner lenders and utilities, who will determine payment procedures and timing according to their discretion and program requirements. Contractors should clearly specify any requirements regarding timing and amounts of payments when submitting their bids.

Insurance Requirements

All contractors are required to provide current insurance certificates to the customer before they will be allowed to perform work.

6.2 EPA Renovation, Repair and Painting (RRP) Regulations

All contractors and crew members will be responsible for complying with the EPA's Renovation Repair and Painting (RRP) regulations, as enforced by the Kansas Department of Health and Environment. More information can be found at <u>www.epa.gov/lead/pubs/renovation.htm</u>. Also refer to EPA Final Rule [under the authority of 402 c 3 of the Toxic Substances Control Act (TSCA)], and New Lead Based Paint Renovation, Repair and Painting Program requirements (40 CFR 745, Subpart E), issued April 22, 2008 (73 FR 21692).

Efficiency Kansas Material and Installation Standards Manual

All work performed for Efficiency Kansas projects should follow the guidelines in the Efficiency Kansas Material & Installation Standards manual. This manual will provide contractors with best practices and clear guidelines for the installation of projects. Download copies from the Efficiency Kansas web site (www.efficiencykansas.com) or contact the Kansas Energy Office.

6.3 Davis-Bacon and Related Acts

Davis-Bacon and Related Acts will only be enforced on Efficiency Kansas-funded projects that provide energy efficiency improvements to small business structures. Funds that are used for residential structures will not be required to adhere to Davis-Bacon.

Sections 6.3 and 6.4 apply only to small business projects.

Applicability

Davis-Bacon and Related Acts applies to all Efficiency Kansas–funded small business projects that include cumulative payments to subcontractors that total more than \$2,000.00 (including but not limited to labor, materials, and equipment). All work performed at one location is considered to be one project; therefore, if the total cost of the work performed by different contractors exceeds the \$2,000.00 threshold, all contractors must meet the Davis-Bacon requirements. Conversely, if the total cost of the work performed by one or more contractor at a home or small business is less than \$2,000.00, then the contractor need not meet the Davis-Bacon requirements.

Wage Rates and Worker Classifications

Employers performing work through Efficiency Kansas (and other ARRA-funded projects) on small business projects must pay employees an hourly wage that is not less than the Davis-Bacon prevailing wages for the appropriate worker classification and the county that the work is being performed in. The U.S. Department of Labor issued a State of Kansas Wage Determination for residential weatherization work. They have also provided two new categories for this work: (1) Weatherization Worker and (2) HVAC Installation Worker.

The Weatherization Worker classification covers work such as minor repairs, batt insulation, blown insulation, window and door repair, and weather stripping, solar film installation, air sealing, caulking, minor or incidental structural repairs, duct sealing, air sealing, installation of light bulbs, and installation of smoke detectors.

The HVAC Installation Worker classification includes the installation and repair of furnace/cooling (HVAC) systems and all associated work involved with the installation of the HVAC system including electrical, pipe and duct work.

More information about specific wage rates is available on the Efficiency Kansas web site (<u>www.efficiencykansas.com</u>). Employers should ensure they are using the most current wage determinations. Note: These classifications and wage rates are for residential work only. For commercial projects, contractors should visit the Department of Labor web site (<u>www.wdol.gov</u>) for current wage rates and classifications.

Fringe benefits

Wage determinations consist of basic hourly wages and, if required for the classification, fringe benefits. These are the minimum rates that employers must pay for work performed on Efficiency Kansas projects.

If payment of fringe benefits is required, several methods are normally employed and outlined below:

- 1. Employers who have agreed to collective bargaining contracts pay the fringe benefits into union-sponsored trust funds. These amounts usually equal or exceed the requirements in the wage determination and the employer satisfies this stipulation.
- 2. Employers may also make cash payments of the fringe benefits directly to the employee. By paying this each week along with the wages earned, the employer does not accumulate any liability.
- 3. Employers may also make payments into the employer's fringe benefit plans (such as employer provided health care plans). These payments typically comply with DBRA if the fringe benefits are controlled by a trustee or other third-party. If not, the contractor must request a determination by the Secretary of Labor that the applicable standards of Davis-Bacon have been met. In addition, the contractor may be required to set aside, in a separate account, assets for meeting the obligations of the plan or program.

Deductions

Allowable deductions under Davis-Bacon include deductions from wages required by law, those required by court process, and those meant to provide health care insurance or pensions. In addition, the contractor may apply to the Secretary of Labor for permission to make any deduction not specifically allowed. Permission may be granted if the contractor does not make a profit from the deduction, it is not prohibited by law, it is voluntary or provided for in a collective bargaining agreement, and it serves the convenience and interest of the employee.

Certified Payroll Requirements

Every employer who has workers performing work-related functions on small business projects funded through the Efficiency Kansas loan program will submit weekly certified payroll records to the Kansas Energy Office, using the Department of Labor's Form WH-347, which can be downloaded from their website along with instructions (http://www.dol.gov/esa/whd/programs/dbra/forms.htm).

Weekly Payment and Overtime Pay

Employees must be paid on a weekly basis. Employees must also be paid one and one-half times their basic rates of pay for all hours over 40 worked in a work week.

Retention of Payroll Records

Employers must maintain payroll records for a period of three years after the work is completed. These records must include the following information about each employee: (1) name, current address, and full social security number; (2) work classification(s); (3) hourly rate(s) of pay, including bona fide fringe benefits or cash equivalents thereof; 4) daily and weekly numbers of hours worked; (5) deductions made; and (6) actual net wages paid.

The contractor or subcontractors shall make all records available for inspection, copying, or transcription by authorized representatives of the Kansas Energy Office or the Department of Labor, and shall permit such representatives to interview employees during working hours at the

site of the work. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.1.

The Department of Labor reporting requirements and forms are available on the Department of Labor website (<u>www.dol.gov</u>).

Apprentices and Trainees

Apprentices and trainees may be employed at rates less than those required for worker classification on Davis-Bacon projects. Apprentices must be individually registered in an apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau. **Trainees must be employed, individually registered, and receiving on-the-job training in a program that has been approved in advance by the U.S. Department of Labor.** Additional information about the applicability of DBRA to apprentices and trainees is available online (www.wdol.gov).

Display of Davis-Bacon Act Poster

Each contractor or subcontractor must post a notice (including any applicable wage determination) at the work site in a prominent and accessible place where it may easily be seen by employees. If the employer has one location from which it dispatches its employees, the employer may also display the poster at that location. The poster can be accessed at <u>www.efficiencykansas.com</u> and is included as Appendix 13.

Inclusion of 29 CFR 5.5 Clauses in Contracts

Contractors or subcontractors must insert the Department of Labor 29 CFR 5.5 into all contracts and reference it and the clauses contained therein. All contracts must also include a clause requiring subcontractors to include these clauses in all of their subcontracts. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

6.4 Checklist for Contractors

The checklists below are intended to help contractors ensure they have met all program requirements. For more information, please contact the Kansas Energy Office.

Checklist for Submitting a Bid

- 1. Determine the county in which the work is to be performed.
- 2. Use the appropriate labor rate(s) in your bid.
- 3. Submit your bid to the customer, along with your Davis-Bacon Acknowledgment (Appendix 12), and the Contractor Terms and Conditions form (Appendix 10).

Checklist for Compliance with Davis-Bacon Requirements

- 1. Provide the customer specific information about the scope and requirements of the work you will perform and discuss how it relates to work performed by other contractors.
- 2. Secure all appropriate building permits and provide a copy to customer.
- 3. Ensure all work meets local jurisdictional code requirements.
- 4. Display the Davis-Bacon poster at the site or at central dispatch location.
- 5. On a weekly basis, pay all employees the prevailing wage rate and one-and-one-half the wage rate for any hours worked over 40 hours in a week.
- 6. Submit weekly certified payroll records (Form WH-347) to the Kansas Energy Office.
- 7. Maintain payroll records for three years.

Section 7: Glossary

"As-Built" Repairs": Repairs and suggested improvements that are identified by qualified auditors to correct potentially dangerous situations and ensure health and safety of the occupants. Although not classified or funded as Efficiency Kansas energy-efficiency improvements, they would need to be completed in any instance.

Audit Report: The Audit Report is the document that the auditor provides to the customer, which details the results of the energy audit. This report includes technical information about the building's existing condition and also includes the Energy Conservation Plan.

Blower Door: A diagnostic tool that measures the air-tightness of buildings and helps locate air leakage sites. Equipment consists of a calibrated fan for measuring an airflow rate, and a pressure-sensing device to measure the air pressure created by the fan flow. The combination of pressure and fan-flow measurements is used to determine the building air-tightness.

Certificate of Project Completion: A form which is completed by the auditor and the homeowner after finished improvements have been installed. This form is submitted to the Kansas Energy Office and finalizes the project.

Combustion Appliance Zone (CAZ): An area which contains one or more combustion appliances (water heater, furnace, etc.)

Energy Audit: An energy audit is a comprehensive assessment, survey, and analysis of energy flows and energy usage of a building, which allows the auditor to identify the most cost-effective opportunities for energy savings.

Energy Conservation Plan: This plan contains the auditor's detailed recommendations for improving the energy efficiency of the building. It gives the customer the detailed specifications for all recommended improvements, which the customer will use to get final bids from contractors.

Mobile Home: Efficiency Kansas defines a mobile home as an existing mobile home that has had the wheels removed and been placed on a permanent foundation or basement.

Meter-based Energy Efficiency Programs: These are utility-sponsored programs, in which the obligation to repay the costs of energy efficiency projects is assigned to the premise—that is, the utility meter—and survives changes in ownership and/or tenancy. These repayment costs are considered regular utility service.

Partner Lender: A participating bank, credit union or other financial institution which has entered into a contractual arrangement with the State of Kansas to participate with Efficiency Kansas to provide financing.

Partner Utility: A participating gas or electric utility, including rural elective cooperatives or municipal utilities, that has entered into an Agreement with the State of Kansas to participate with Efficiency Kansas to provide financing through their billing services. Utilities under the

jurisdiction of the Kansas Corporation Commission must also receive approval to implement a meter-based energy-efficiency program.

Projected savings: The estimate of energy and dollar savings that will be realized after the implementation of the energy-efficiency improvements recommended by the qualified auditor and outlined in the Energy Conservation Plan. These savings are calculated using the actual historical utility data for the property and applied to each improvement recommended by the auditor.

Qualified Energy Auditor: These are energy auditors who have (1) met the criteria established by the Kansas Energy Office and (2) requested that they be included in the listing of qualified auditors. This list will be maintained by the Kansas Energy Office and be available on the Efficiency Kansas web site (www.efficiencykansas.com). All energy auditors on the Efficiency Kansas qualified auditor list will have undergone training and been certified by one of the qualified training institutions, and passed the required Efficiency Kansas Certification. Qualified energy auditors are not recommended, approved, or endorsed by the Kansas Energy Office or the Kansas Corporation Commission.

Residential: Efficiency Kansas defines a residential structure as an existing structure located in the state of Kansas used as a place of residence.

Revolving loan program: Loan repayments are added back to the program fund and can be loaned out again; this recycling of the original funding allows the program to sustain itself and be available to Kansans long after the original funds have been distributed.

Simple Payback: Simple Payback indicates how quickly the energy and dollar savings resulting from the project will "pay back" the cost of all improvements. Simple Payback is calculated by dividing the total cost of each project by the estimated annual savings resulting from all improvements. For an example, see Appendix 14.

Small Commercial: Efficiency Kansas defines a small commercial structure as an existing small business structure located in the state of Kansas, which uses residential-sized heating and air conditioning equipment.

Whole house approach: An approach to evaluating energy efficiency in which the entire structure is viewed as a unified system. Using this approach, auditors use the data collected during a comprehensive energy audit to evaluate how all the elements—thermal boundaries, mechanical systems, lifestyle of occupants—interact and impact one another. This approach is used to determine cost-effective improvements that can be made to increase comfort and performance of the whole house.

Appendix 1: Customer Checklist

Schedule Your Energy Audit:

- Gather 12 months of actual historical energy data from utility companies.
- Contact a participating energy auditor.
- Schedule the audit with the chosen auditor.
- Verify auditor identity; complete and sign the Auditor ID form (Appendix 3).
- Answer the questionnaire as requested by the auditor.
- Provide auditor access to <u>entire</u> structure.
- Direct the auditor to submit the Energy Conservation Plan to the Kansas Energy Office.

After Receiving the Approved Energy Conservation Plan from Auditor:

- Decide on the final size of the project, based on the prioritized list of improvements provided by the auditor.
- Contact contractors for bids, using bid packages and specifications written by auditor.
 - All bids must include a signed Contractor Terms and Conditions form (Appendix 10, or Appendix 11 for Self Performance items).
 - For small-business projects, all bids must include a signed Davis-Bacon Wage Acknowledgment form (Appendix 12).
- Select contractors and submit final bids to auditor.
- Receive final Energy Conservation Plan from Auditor.

Arrange for Financing:

• Receive written notice of approval from Partner Lender or Utility.

Schedule the Work:

- Before contractors start working, receive from them the following items:
 - EPA "Renovate Right" booklet, if applicable.
 - Insurance certificates for each contractor.
 - Applicable local, city, county building/construction permits.
- Contact contractors and begin the work.
- Collect all maintenance and product information for materials and/or equipment installed.

Completion:

- Contact Auditor to schedule Post-retrofit Audit.
- Receive auditor-signed Efficiency Kansas Certificate of Project Completion.
- Sign Efficiency Kansas Certificate of Project Completion document.
- Submit signed Efficiency Kansas Certificate of Project Completion to lender or utility.

Follow repayment schedule as established with your lender or utility.

Appendix 2: Fuel Information Release Form

Applicant's Name:	Project #:
Address:	EK Completion:
City, State, Zip:	County:
Telephone Number:	
(TO BE COMPLET	ED BY APPLICANT)
HEATING FUEL SUPPLIER:	ELECTRIC SUPPLIER:
Name:	Name:
Address:	Address:
Bill to:	Bill to:
Account #:	Account #:
Do you use the same supplier for both heating and	electric? Yes No
I hereby authorize the above energy providers	to release information on my fuel bills to the
Iollowing:	, and

I understand that this information will be used only to provide data for the above named, and no information obtained through this release shall be made public in such a manner that the dwelling or occupants can be identified.

Client Signature

Date

Appendix 3: Efficiency Kansas Energy Auditor Identification

Only Energy Auditors that have been listed as a Qualified Auditor on the Efficiency Kansas program website may perform a qualifying energy audit. It is required that the homeowner/tenant/property owners verify the identification of the auditor and complete the information below. This completed form must accompany the submission of an energy audit for program consideration.

I, _____ have verified that the Auditor that has been contacted to perform the energy audit on my property has presented an Efficiency Kansas Auditor Identification.

Property Owner Signature:

Appendix 4: Notice of Disclosure

Notice of Disclosure

As a Qualified Auditor for the Efficiency Kansas Loan Program, I agree to abide by the Code of Ethics contained in the Efficiency Kansas Program Manual.

My client is hereby notified by this statement that potential conflict of interest may exist because of my relationship with the firms or products identified below.

When recommending building products, services or solutions, I promise to give fair representation of applicable products, services or solutions.

More than one cost estimate for any product or service is recommended.

As a Qualified Auditor I hereby disclose the following business intentions/associations and activities prior to collecting any fees or performing an energy audit on the house located at:

Street Address	City/State	Zip Code
Company Name		Products or Services

I further disclose that I will perform an energy audit on this house and that the resulting information will be fair and accurate representation of the building performance, and does not consider occupant energy use habits. As a result your actual energy use may vary from the estimates provided. The audit remains valid regardless of who lives in the house, until or unless a modification is made which will affect its energy performance.

Auditor's Signature	Efficiency Kansas Number	Date

Appendix 5: Recommended Questions for Client Interview

	Date:
Name:	
Address:	
A 17/	
Auditor:	
How long have you lived at this address?	
Have you made any changes to the structure?	Yes No
Are you in the process of remodeling or plan to remodel a	any portion of the home in the near future? Yes No
Are any part of your ceilings, walls or floors in complete	or in need of repair?
Are some rooms colder than others? Yes No	
Have your water pipes ever frozen? Yes No	
Are there drafty areas in the house? Yes No	Where?
Do you have any roof leaks? Yes No	
Do you have any foundation problems? Yes No	
Are there any broken or leaking water or sewer lines?	Yes No
Does water leak/stand in the basement/crawlspace?	Yes No
If mobile home - is the underbelly free of debris and/or st	tanding water? Yes No
Does ice form on your windows in the winter?	Yes No Which ones?
Have you noticed mold/mildew growing on windows, wa	alls or in corners? Yes No
Do you have ventilation fans at water locations?	Yes No Do you use them? Yes No
Do you use your attic for storage?	Yes No
Are any utilities turned off?	Yes No
Do you close off any rooms in the house? Yes No	Which ones? Why?
How many smokers live in the house?	
How many pets in the house? Aquariums	s? Size?
Do you use your cookstove for heat? Yes No	
Do you have any unvented space heaters in the house?	Yes No
Do you keep kerosene, gasoline, paint thinner, etc. in the	house? Yes No Where?
Do you have a fireplace? Yes No	Do you use it? Yes No
Does your furnace work? Yes No	
What temp do you set your thermostat at in the winter?	Summer?
Does your furnace produce any unusual noises or smells?	? Yes No
How often do you change the furnace filter?	
Do all registers deliver heat? Yes No	
Do you have any disconnected ductwork? Yes No	
Do you have any registers intentionally closed off?	Yes No
What type of cooling system do you have?	Does it work? Yes No

					Si	te Data Co	ollection		Created for use with F	REM/Rate REM Des	ign			
Building Na	ame		Builder	s Name			Area of Cond. Space		Zone 1 2 3 4 "N"					
Owners Nat	me		Model/	Name/No			Volume of Cond. Space			No Stories				
Property Ac	ddress		Develo	pment Na	me		House Type			Wind Well-sheid Norm Eyn			Jorm Exp	
110000000000000000000000000000000000000	uu v 555		Phone.				Level type		ACH50			torini Esip		
City		State					Elever type			NACH				
Zin		State	1					No Bedro	oms	BTL				
Phone:								No. Occupants		CFM 50				
Foundation Tu		Tumo	Longth	Haight	↑ grada	l grada			Slah Eleera	tuna Danth suissta				Eve Donimator
Name	/pe:	Туре	Length	neight	1 grade	↓ grade	Location		Name	type	area	Depth	perimeter	Exp. Perimeter
1 tunie									i tuille					
						l		• .		C I D	G i P	x 1.0		x .*
Frame Floor		Area	1 ype		Location		Rim & Band J	oists	Area	Cont. Ins. R	Cavity R	Insul ."	Joist oc	Location
Name							Name		_	-				
										-				-
Above Grade V	Walls	Туре	Area		Ext. Color	Location		Windows/Gla	ass	Area	W shade	S shade	Oriented	Wall Assign
Name								Name	Туре					
-														
Ceilings		Туре	Area		Rad Bar?	Ext.color		Doors	Opaque sf	Туре			Wall assir	ment
Name								Name						
Skylight?	Y N	Туре:	P /12	Area		W. shade:	S. shade	:	Orientation	:	Ceiling ass	sign.:	-	
Space Heat	ting	SB therm? Y N	Space 1	Heating	SB therm?	Y N	Space Coo	ling		Space Coo	ling			
Brand			Brand				Brand			Brand				_
Model #			Model #	# <u> </u>			Model #			Model #				_
Input			Input			_	Size			Size				_
Output			Output				SEER - EER - COP		SEER - EER - COP					
AFUE-COF	P-HSPF		AFUE-	COP-HSF	PF	_	Ventilation: Nat WHF		7	Ventilation: Natural Whole House Fan			Fan	
Fuel type			Fuel typ	be		-	Water Hea	ting		-				
Oven Fuel		Dryer Fuel	Drywall	thickness			Brand			Gallons		Added	Insul R-	
Ducts:	Name	type	Location		Area	Added R	Model #			EF Location				
							Measured duct leakage :							
							Supply	Retur	n					

Appendix 7: Unvented Heater Removal Agreement

Date: _____

Homes heated by unvented fuel combustion space heaters are considered unsafe and shall not have air sealing or building tightness measures applied unless the heaters are removed from the premises, vented to the outside, or replaced with an appropriate heating unit.

This home has a combustion fuel unvented heater and the homeowner/tenant has been informed of the hazards associated with these types of heating units.

I, the undersigned, have been informed and agree to have the heater removed from the premises, or permanently vented to the outside prior to any air sealing or building tightness measures being applied to the building.

Client Signature

Date

Unvented Heater Removal Refusal

I, the undersigned, have been informed and do not agree to have the heater removed from the premises, or permanently vented to the outside prior to any air sealing or building tightness measures being applied to the building. I understand Efficiency Kansas funding may not be available for upgrades as outlined in the Efficiency Conservation Plan unless the heater is permanently vented to the outside or removed from the premises.

Client Signature

Date

No Existing Condition

I, the auditor, declare there is not an unvented heater on the premises.

Auditor Signature

Date

Efficiency	Kansas	Combination	HVAC T	est Record

	Heating System	Water Heater	Comments and Work Descriptions		
Manufacturer					
Model Number					
Type of System					
Input Btu					
Output Btu					
AFUE/EF/ (Efficiency Rating)					
Electronic ignition?	Yes No	Yes No			
Gas Leaks	Yes No	Yes No			
Wiring Problem	Yes No	Yes No			
Burners Clean	Yes No	Yes No			
Scorch burn Marks	Yes No	Yes No			
Draft hood clean	Yes No				
Blower Clean	Yes No				
Vent Condition/ Type/ Pitch ok?	Y N Y N				
Fan on Temp					
Fan off Temp					
CO at startup	PPM	PPM			
CO at 5 min	PPM	PPM			
Spillage? Recover?	Y N Recover time:	Y N Rec. Time			
Supply Temp @ 5 min					
Return Temp @ 5 min					
Location Supply temp taken					
Manufacturer Heat Rise					
Number of Registers					
Air Flow at Registers	Poor Fair Good				
Duct Condition: S & R					
Unit location					
Adequate Combustion Air?	Y N Add?	Y N Add?			
Worst Case Testing Data	-				
-6 -5 -4 -3	-2 -1 0 1	2 3 4 5 6			
EFFICIENCY KANSAS INSTRUMENTED HEATING SYSTEM INSPECTION FORM "F" Forced Air Units

Audit Company		T	Date:	
				• • • • •
Auditor:			\Box This test is on the	original unit.
Furnace Information:		Mfg.		Model Number
Input Btu		Output Btu		Fuse Size/Type
Type of Heating Units:	Upflow Downflo	ow Horizontal	Fuel Type: Nat. gas Fuel Oil Elec. # of	Def elements:
Is furnace in operating cond	lition?	es 🗌 No; If "no	", describe action on page 2.	
Number of Registers:	1	Supply	Return	l
Adequate Delivery at suppl	y and return registers?	<u>Yes</u>		
Location of Heating Unit:			Enclosed Space?	es 🗌 No
If unit is located in "enclos	ed space", how does it g	et air for combustio	n?	
If there is inadequate com	bustion air, how/where w	will it be installed?		
Gas Valve Control System:	24 Volt	Mill volt	Other:	
Heat Exchanger Clean	Yes No			
Gas Leaks:	🗌 Yes 🗌 No	Comments:		
Wiring Problems:	Yes No	Comments:		
Scorch/Burn Marks:	Yes No	Comments:		
Draft Hood Clean:	Yes No	N/A	Cleaned? Yes	No
Vent Type O.K.:	Yes No	Comments:		
Vent Pitched:	\square Yes \square No	Comments:		
Vent/Chimney:	Condition O.K.	Yes No	Comments:	
Pilot Assembly Clean:	Yes No			
Burner(s) Clean:	Yes No			
*Drill holes in vent, supply	and return duct			
*Insert thermometer in sup	ply and return duct			
*Turn thermostat up				
	51AKI 5-	Initial	ACE IESI Retest	
Measured Fan ON Tempera	ature:	°F	Retest	°F
Location Temperature was	taken:			-
Heat Rise at 5 minutes:	Supply –	Return	Supply	– Return
Manufacturer Heat Rise Sp	ecifications: =		F =	°F
Carbon Monoxide in the ve	nt:	PPN	[PPM
Draft		In. w	/.g.	In. w.g.
=O.A. Temperatur	e	°F	°F	0
Induced Draft Yes	s 🗌 No			
Spillage at Draft Hood:		Yes N	o N/A	
*Turn Thermostat Down				
Fan "OFF" Set Point Suppl	y Temperature:	°F		°F
Fan "OFF" Set Time:		Seco	onds	Seconds
Measured Fan OFF Temper	rature:	°F		°F
Ductwork Condition:		O.K. Leaky	Disconnected Sea	led Reconnected
Filter Clean		Yes No		

Replaced Filter Filter Size		Yes Yes	No Width X	ζ	_ Height
Installed Filter Rack	k and Filter	Yes	🗌 No		
Blower Clean		2 Yes	No		
Belt:		Yes	N/A		
	Tension O.K. Condition O.K. Size	Yes Yes	☐ No ☐ No Inches		
A/C Coil Clean		Yes	🗌 No	Cleaned?	Yes No

* Tape and plug holes in return, supply, and vent

OWNER/CONTRACTOR REPAIR ITEMS

Owner	Contractor	Description of Repairs	Verified Complete

POST COMPLETION SAFETY TEST

* Close exterior windows and doors

* Turn Thermostat up

		-				
*	START FINAL	DRAFT	AND	CARBON	MONOXIDI	E TEST

Carbon Monoxide in Vent	PPM	
Draft at 5 minutes	iii. w.g.	
Draft at Startup	in wa	
	in. w.g.	

COMMENTS:

EFFICIENCY KANSAS INSTRUMENTED HEATING SYSTEM INSPECTION FORM "G" Gravity Units

Audit Company			Date:		
Job Number:		Re-ins	pection Date:		
Auditor:			This tes	st is on the origina	l unit.
			This tes	st is on the replace	ment unit.
Furnace Information:		Mfg.		Mo	odel Number
Input Btu		Output Btu		Fu	se Size/Type
Fuel Type: Natural gas	LP Fuel Oil	1			
Is furnace in operating condition	? 🗌 Yes 🗌 N	No; If "no", descrit	be action on pag	e 3.	
Number of Registers:	Supply			Return	
Location of Heating Unit:		¹ En	closed Space?	Yes] No
If the unit is located in "enclosed	I space", how does it get	t air for combustio	n?		
If there is inadequate combusti	on air, how/where will it	t be installed?			
Gas Valve Control System:	24 Volt II	Mill volt	Other:		
Heat Exchanger Clean	Yes No				
Gas Leaks:	Yes No	Comments:			
Wiring Problems:	Yes No	Comments:			
Scorch/Burn Marks:	Yes No	Comments:			
Draft Hood Clean:	Yes No	N/A Cl	eaned? Ye	es 🗌 No	
Vent Type O.K.:	Yes No	Comments:			
Vent Pitched:	Yes No	Comments:			
Vent/Chimney: Condition O.K.	Yes No	Comments:			
Pilot Assembly Clean:	Yes No	Cleaned? Y	es 🗌 No	Replaced?	Yes No
Burner(s) Clean:	Yes No	Cleaned? Y	es 🗌 No		
* Drill holes in vent, supply and	return duct				
* Insert thermometer in supply a	nd return duct				
* START 5-MINUTE FURNAC	F TFST				
		Initial		Reset	
Measured Supply Temperature	@ 5 Minutes		°F		°F
Location Temperature was taken	ı:		_		
Carbon Monoxide in the vent:			PPM		PPM
Draft			In. w.g.		In. w.g.
=O.A. Temperature			°F		°F
Spillage at Draft Hood:	Zes No	Comments:			
Duct Work Condition:	D.K. 🗌 Leaky	Disconnected		l Recon	nected

OWNER/CONTRACTOR REPAIR ITEMS

Owner	Contractor	Description of Repairs	Verified Complete

POST COMPLETION SAFETY TEST

* Close exterior windows and doors

* Turn Thermostat up

* START FINAL DRAFT AND CARBON MONOXIDE TEST

Development Scherederer	in. w.g.	
Draji ai Stariup	in w a	
Draft at 5 minutes		
Carbon Monoxide in Vent	PPM	
* Return House to Original Condition		

COMMENTS:

1. Divide the total input Btu of all appliances in the space by 20 to determine the required volume. [Input Btu $\div 20 =$ [Required volume in feet³]

Form "G" – Page 2

EFFICIENCY KANSAS MID/HIGH-EFFICIENCY FURNACE JOBSITE INFORMATION SHEET — FORM "H"

Client Information: Job Number	Date:
Name:	Auditor:
Street:	Furnace Data: Manufacture:
City: Zip:	Model Number:
Phone:	Serial Number:
Type: Upflow Downflow Horizontal 80% AFUE 90% AFUE A/C coil present	Fuel Type: Nat. gas LP Fuel Oil
Is furnace in operating condition? Yes No: If "no", desc Number of Registers: Supply	ribe action on back page. Return
Adequate Delivery at supply and return registers?	No Comments:
Location of Heating Unit: If the unit is located in "enclosed space" how does it get air for com If there is inadequate combustion air, how/where will it be installed Sealed Combustion Yes No Evidence of hole in heat exchanger? Yes No	Enclosed Space? Yes No bustion? Comments:
Is Heat Exchanger Clean?	
Gas Leaks: Yes No Comments	
Wiring Problems:YesNoComments	:
Scorch/Burn Marks: Yes No Comments	:
Draft Hood Clean: Yes No Comments	:
Vent Type O.K.: Yes No Comments	:
Vent Pitched: Yes No Comments	:
PVC Vent Terminus OK: Yes No Comments	:
Vent/Chimney OK: Yes No Comments	
Pilot Assembly Clean: Yes No	
 Electronic Ignition: Yes No Burner(s) clean: Fired Sequence Test: Drill holes in exhaust vent, supply and return plenum (duct) Insert thermometer in supply and return plenum (duct) Turn thermostat up START FIVE MINUTE FURNACE TEST] Yes 🔲 No
Fan "ON"Temperature:°FLocation Temperature was recorded:	N Time Seconds
Heat Rise at 5 minutes: Supply – Return	= °F

Manufactu	rer Heat Rise Specifications	:	=	°F
Carbon monoxide in the vent		PPM		
► Turn th	nermostat down			
Draft: Test completed Measured I	80% AFUE vent/chimney i Fan OFF Temperature:	mmediately after burn cycle is °F	PPM	In. w.g.
Condition of ducts:		O.K. Leaky	Disconnected	Sealed Reconnected
Filter Clean		Yes No		
Replaced Filter		Yes No		
Filter Size		Width	Χ	Height
Installed Filter Rack and Filter		Yes No		
Blower Clean		Yes No		
	0	WNER/CONTRACTOR RI	EPAIR ITEMS	
Owner	Contractor	Description of Repairs		Verified Complete

Form "H" – Page 2

POST COMPLETION SAFETY TEST

* Close exterior windows and doors

* Turn Thermostat up

* START FINAL DRAFT AND CARBON MONOXIDE TEST

Draft at Startun	in. w.g.	
	in. w.g.	
Draft at 5 minutes		
Carbon Monoxide in Vent	PPM	
* Return House to Original Condition		

COMMENTS:

1. Divide the total input Btu of all appliances in the space by 20 to determine the required volume.

[Input Btu $\div 20 =$ (Required volume in feet³)]

Form "H" – Page 3

EFFICIENCY KANSAS INSTRUMENTED HEATING SYSTEM INSPECTION FORM "S" Console Heater, Floor and Wall Furnaces

Audit Company:			Date:		
Job Number:		Reii	nspection Date:		
Auditor:			This te	st is on the origin	nal unit.
			This te	st is on the repla	cement unit.
Furnace Information:		Mfg.			Model Number
		Lunat Dta			
		Input Btu			Fuse Size/Type
Type of Units: Console	Floor Furnace	Wall Furnace	Fuel Type:] Nat. gas	LP
			Fuel Oil	Elec. # Of eler	ments:
Precleaning Required? *Turn Thermostat Up	Yes No				
Is furnace in operating condition?	Yes No; I	f "no", describe	action on page 2.		
Number of Registers:	Su	pply	_	Return	
Location of Heating Unit:		1	Enclosed Space?	Yes	No
If the unit is located in "enclosed	space", how does it ge	et air for combust	tion?		
If there is inadequate combustion	n air, how/where will	it be installed?			
Gas Valve Control System:	24 Volt	Mill volt	Other:		
Heat Exchanger Clean	☐ Yes ☐ No				
Gas Leaks:	Yes No	Comments:			
Wiring Problems:	Yes No	Comments:			
Scorch/Burn Marks:	🗌 Yes 🗌 No	Comments:			
Vent Type O.K.:	Yes No	Comments:	<u> </u>		
Draft Hood Clean:	∐ Yes ∐ No	∐ N/A	Cleaned?	es 🗌 No	
Vent Type O.K.:		Comments:			
Vent Pitched:	\square Yes \square No	Comments:			
Vent/Chimney: Condition U.K.:	\square Yes \square No	Comments:		D 1 10	
Pilot Assembly Clean: Burner(s) Clean:	\square Yes \square No	Cleaned?] Yes $[]$ No	Replaced?	Yes No
* Drill holes in vent supply and i	return duct				
* Insert thermometer in supply and	id return duct				
* Turn thermostat up					
* START 5-MINUTE FURNAC	E TEST	Traitial		Deget	
Magurad Supply Tomporature	5 Minutos	Initial	٥ <u></u>	Reset	0E
Location Temperature was taken	, 5 Willutes		Г		Г
Location remperature was allow			<u>.</u>		
Carbon Monoxide in the vent:			PPM		PPM
Draft			In. w.g.		In. w.g.
O.A. Temperature			°F		°F
Spinage at Draft Hood:	es 📋 No	Comments:			. 1
Ductwork Condition:	.K. 🗋 Leaky	□ Disconnecte	d ∐ Sealed	1 🗌 Reco	nnected

OWNER/CONTRACTOR REPAIR ITEMS

Owner	Contractor	Description of Repairs	Verified Complete
	POST	F COMPLETION SAFETY TEST	
* 01			
* Close exterior * Turn Thermos	tat up		
* START FINA	L DRAFT AND CARB	ON MONOXIDE TEST	
Draft at Startup		in. w.g.	
Dratt at 5 minute	<u> </u>	In. w.g.	
Carbon Monoxie	de in Vent	PPM	

* Return House to Original Condition

EFFICIENCY KANSAS INSTRUMENTED HEATING SYSTEM INSPECTION FORM "W" Domestic Water Heaters

Auditor Company:	Date						
Job Number:	Reinspection Date:						
Auditor:	This te	\Box This test is on the original unit.					
Manufacturer::	This te	\square This test is on the replacement unit					
Model Number:	Energy Factor (EF):						
Size: Gallons	Input Btu's:						
Fuel Type: 🗌 Natural gas 🗌	LP \square Fuel Oil \square Electric > Number of ϵ	elements					
Location of DWH:	¹ Enclosed Space?	Yes No					
If the unit is located in "enclosed sp	ace", how does it get air for combustion?						
If there is inadequate combustion a	ir, how/where will it be installed?						
Hole in Exchanger:	Yes No Comments:						
Spillage at Draft Hood:	Yes No Comments:						
Gas Leaks:	Yes No Comments:						
Wiring Problems:	Yes No Comments:						
Scorch/Burn Marks:	Yes No Comments:						
Draft Hood Clean:	Yes \square No \square N/ACleaned? \square Y	es 🗌 No					
Vent Type O.K.:	Yes No Comments:						
Vent Pitched:	Yes No Comments:						
Vent/Chimney: Condition O.K.	Yes No Comments:						
Pilot Assembly Clean:	Yes No Cleaned? Yes No	Replaced? Yes No					
Burner(s) Clean:	Yes No Cleaned? Yes No						
Hot water temperature	°F						
Reset water temperature to 120° F:	Yes No Reset to:	•F					
	Initial – Pre	Final Inspection					
Location Temperature was taken:							
Carbon Monoxide in the vent:	PPM	PPM					
Draft	In. w.g.	In. w.g.					
	•F	°F					
O.A. Temperature							
0	VNER/CONTRACTOR REPAIR ITEMS						
Owner Contractor	Description of Repairs	Verified Complete					
1. Divide the total input Btu of all ap	phances in the space by 20 to determine the required Input Btu $\div 20$	volume. Required volume in					
L	= fee	t^{3}					

EFFICIENCY KANSAS INSTRUMENTED HEATING SYSTEM INSPECTION FORM "M" — Mobile Home Units

Audit Co:			Date:		
Job Number:		Reins	pection Date:		
Auditor			This tes	t is on the origin	nal unit.
			This tes	t is on the repla	cement unit.
Furnace Information:		Mfg.		*	Model Number
-					
Input Btu		Output Btu			Fuse Size/Type
Type of Heating Units.	Downflow	Unflow	Fuel Type	Not cos	
Type of fleating Units:	$\Box = 580\% \text{ AFUE}$	$\square \Delta/C \text{ coil present}$		\Box Flec # Of	elements:
Ducalconing Descripted					<u> </u>
Precieaning Kequired?)			
Is furnace in operating cor	ndition?	Yes 📋 No; If "no", o	describe action	on page 3.	
Number of Registers:		Supply		Return	
Adequate Delivery at supp	ly and return registe	ers? 🗌 Yes 📋 No			
Location of Heating Unit:					
Combustion Air source:	Double Vent	ted	Under Home	2	
Gas Valve Control System	: 24 Volt	Mill volt	Other:		
Gas Leaks:	$\Box Yes \Box Nc$	Comments:			
Wiring Problems:	Yes No	Comments:			
Scorch/Burn Marks:	\Box Yes \Box No	Comments:			
Vent Type O.K.:	Yes No	Comments:			
Roof Jack:	Condition O.K.	∐ Yes ∐ No Cor	nments:		
Pilot Assembly Clean:		\sim Cleaned? \square Yes	s ∐ No	Replaced?	Yes No
Burner(s) Clean:	Yes No	Cleaned? Yes	s 🗌 No		
* Insert one thermometer in	nearest supply registe	er and one in the return air	opening or doo	or	
* Turn thermostat up * STADT 5 MINUTE TEST	,				
\cdot START J MIINUTE IEST		Initial		Retest	
Measured Fan ON Tempe	rature:	°F			°F
Location Temperature was	s taken:				-
Heat Rise at 5 minutes:		Supply – Return	S	upply – Retur	rn
					=
Manufacturer Heat Rise S	pecifications:	=°F	=		°F
*Turn Thermostat Down					
Fan "OFF" Set Point Supp	bly Temperature:	°F		°F	7
Fan "OFF" Set Time:		Seconds	8	Se	econds
Measured Fan OFF Temp	erature:	°F		ºF	7

	Initial			Retest	
Duck Work Condition:	□ O.K.	🗌 Leaky	Disconnected	Sealed	Reconnected
Filter Clean	🗌 Yes	🗌 No			
Replaced Filter	🗌 Yes	🗌 No			
Filter Size		Width	X	Height	
Installed Filter Rack and Filter	Yes	🗌 No			
A/C Coil Clean	Yes	🗌 No			

OWNER/CONTRACTOR REPAIR ITEMS

Owner	Contractor	Description of Repairs	Verified Complete
			<u> </u>
			<u> </u>

COMMENTS:

Form "M" – Page 2

EFFICIENCY KANSAS INSTRUMENTED HEATING SYSTEM INSPECTION FORM "B" Boiler

Audit Co:			Date:				
Job Number:		nspection Date:					
Auditor			This test is on the original unit.				
			This tes	st is on the repla	acement unit.		
Boiler Information:	_	Mfg.			Model Number		
Input Btu		Output Btu			Fuse Size/Type		
Efficiency Rating:			Fuel Type:	🗌 Nat. gas			
Is Boiler in operating condition	n?	Yes 🗌 No; If "no	", describe action	on below.			
Number of Registers:		Supply					
Adequate Delivery at supply a	egisters? Y	es 🗌 No					
Location of Heating Unit:			_				
Adequate Combustion Air?	Yes N	lo					
Gas Valve Control System:	24 Volt	Mill volt	Other:				
Gas Leaks:	Yes No	Comments:					
Wiring Problems:	∐ Yes ∐ No	Comments:					
Scorch/Burn Marks:	∐ Yes ∐ No	Comments:					
Vent Type O.K.:	Yes No	Comments:					
Pilot Assembly Clean:	Yes No	Cleaned?	res 🗌 No	Replaced?	Yes No		
Burner(s) Clean:	Yes No	Cleaned?	res 🗌 No				
* START 5 MINUTE TEST		Initial		Retest			
	CO PPM in Flue						
	Draft in w.c.						
	Outside Temp.	°F		⁰]			

OWNER/CONTRACTOR REPAIR ITEMS

Contractor	Description of Repairs	Verified Complete
 . <u> </u>		

COMMENTS:

Form "B" – Page 2

Appendix 9: Efficiency Kansas "N" Factors

The following chart is to be used in calculation of the Building Airflow Standard (Building Tightness Limit).

The Building Tightness Limit must be calculated for the home according to the air exchange requirements provided by ASHRAE standard 62-89.

Use the following Chart to identify the N-factor for your region and the condition in which the property sits with regard to wind exposure.

Provide the Building Tightness limit, the tested ACH50 and NACH calculations and conclusions below.

Building Tightness Limit:



	- " M	I" facto	rs	1993 B-104	
Zone	# of stories⇒	1	1.5	2	3
	Well-shielded	18.6	16.7	14.9	13.0
.1	Normal	15.5	14.0	12.4	10.9
	Exposed	14.0	12.6	11.2	9.8
2	Well-shielded	22.2	20.0	17.8	15.5
	Normal	18.5	16.7	14.8	13.0
	Exposed	16.7	15.0	13.3	11.7
	Well-shielded	25.8	23.2	20.6	18.1
3	Normal	21.5	19.4	17.2	15.1
	Exposed	19.4	17.4	15.5	13.5
	Well-shielded	29.4	26.5	23.5	20.6
4	Normal	24.5	22.1	19.6	17.2
weeks a	Exposed	22.1	19.8	17.6	15.4
		A STATE OF			

Climate Zone _____ # of Stories _____ Wind Exposure:
Well-Shielded
Normal
Exposed "N"=_____

Air Changes Per Hour at 50 Pascals • ACH50 = <u>CFM50 X 60</u> = _____ House Volume Natural Air Changes Per Hour NACH = <u>ACH50</u> = ______ "N"

Appendix 10: Contractors Terms and Conditions

Co	ntra	ctor	Name :						
~						Ы			

Contractor Address: _____ Phone Number: _____

Customer Name: Customer Address:

<u>Contractor Terms and Conditions</u> Efficiency Kansas Loan Program (Please initial on the space provided after reading each condition)

- I understand that the following are prerequisites for bidding:
 - _____Bids must have itemized cost of materials to be used in the energy conservation plan.
 - Labor cost must be listed separately from materials.
 - Bids must include total Man-Hours to complete the project.
 - When required in a particular jurisdiction, I must obtain all necessary building permits from the local authority for the work to be performed.
 - All bids must state exactly what will be done, so the State Energy Office has documentation for accountability purposes.
 - _____ All bids are to be based on the energy conservation plan provided by the auditor, and approved by the State Energy Office.
 - All work on homes subject to review under Section 106 of the National Historic Preservation Act, (NHPA) and it's implementing regulation 36 CFR part 800 must follow the guidelines as set forth in the Efficiency Kansas Program Manual.
 - _____ Material or labor costs are NOT paid in advance.
 - No work shall begin until such time as the State Energy Office has approved the appropriate bid and you have been notified in writing.
 - _____ All work will be done in a workman like manner and in accordance with industry standards.
 - For all commercial & industrial projects; if the cumulative amount of all contracts on a project exceeds \$2,000 (including but not limited to labor, materials, and equipment) Davis Bacon prevailing wage rates will apply.
- I understand if I am awarded the project that:
 - I shall only perform those items of work that are approved by the State Energy Office. I shall not perform any extra work requested by the homeowner. If prior approval is not granted, the State Energy Office will not be responsible for the additional costs.
 - Before beginning any home repairs, I will ensure that the customer has been informed as to what materials and supplies will be used and the customer agrees to its content.
 - I will warrant that my work is free from defects in material and workmanship for a period of one (1) year. Upon notice of a material defect in the work within that period, I shall be responsible for any repairs, replacements or corrections to the defective construction within a reasonable period of time, at no cost to the customer. Nevertheless, I shall not be responsible if: (1) my work has been modified, altered, defaced, or had repairs made or attempted by others; or (2) the material defect was caused by an Act of God.

I have read and agree to the terms and conditions of the Efficiency Kansas loan program. I understand that any expenses exceeding what was approved by the State Energy Office, or expenses that exceed the maximum award of the program, will **not** be the responsibility of the State Energy Office.

Contractor Signature

___/__/___ Date

Appendix 11: Self-Performance Terms and Conditions

Homeowner Name:	
Project Address:	Phone Number:
Person performing improvements:	

Self-Performance Terms and Conditions Efficiency Kansas Loan Program

I understand that the following are prerequisites:

- Bids must have itemized cost of materials to be used in the energy conservation plan.
- Labor costs will not be covered
- Bids must include total hours worked to complete the project.
- When required in a particular jurisdiction, I must obtain all necessary building permits from the local authority for the work to be performed.
- All bids must state exactly what will be done, so the Kansas Energy Office has documentation for accountability purposes.
- All bids are to be based on the energy conservation plan provided by the auditor, and approved by the State Energy Office.
- All work on homes subject to review under Section 106 of the National Historic Preservation Act,(NHPA) and its implementing regulation 36 CFR part 800 must follow the guidelines as set forth in the Efficiency Kansas Program Manual.
- Material costs are NOT paid in advance.
- No work shall begin until such time as the State Energy Office has approved the appropriate bid and you have been notified in writing.
- All work will be done in a workman like manner and in accordance with industry standards.
- For all commercial & industrial projects; if the cumulative amount of all contracts on a project exceeds \$2,000 (including but not limited to labor, materials, and equipment) Davis Bacon prevailing wage rates will apply.
- Only Material costs will be allowed. Purchase of any required tools, licenses or equipment needed to complete the project will not be approved for reimbursement.
- I shall only perform those items of work that are approved by the Kansas Energy Office. I shall not perform any extra work. If prior approval is not granted, the Kansas Energy Office will not be responsible for the additional costs.
- Thermal boundary improvements, such as air-sealing and insulation, must not be installed prior to the correction of or replacement of hazardous conditions existing with mechanical equipment.

I have read and agree to the terms and conditions of the Efficiency Kansas loan program. I understand that any expenses exceeding what was approved by the State Energy Office, or expenses that exceed the maximum award of the program, will **not** be the responsibility of the State Energy Office.

Contractor Signature

___/__/___
Date

Appendix 12: Davis-Bacon Acknowledgement

The Efficiency Kansas loan program is funded through the American Recovery and Reinvestment Act of 2009 (ARRA). Projects funded through the ARRA are subject to the requirements of the Davis-Bacon and Related Acts (DBRA).

The Efficiency Kansas loan program applicability of Davis-Bacon and Related Acts is for small commercial and industrial projects that have cumulative subcontractor amounts totaling more \$2,000.00 (including but not limited to labor, materials, and equipment). The U.S. Department of Labor (DOL) interprets one house to be a single project. If all project costs exceed \$2,000, DBRA requirements apply.

When the Davis Bacon threshold has been reached, all contractors and subcontractors performing energy-efficiency improvements through the Efficiency Kansas program must pay workers the Davis-Bacon prevailing wage rates for the county where the work is being performed.

Contractors and subcontractors shall ensure that the standard Davis-Bacon contract clauses found in the Department of Labor 29 CFR 5.5 are incorporated into any resultant covered contracts where the \$2,000 threshold will apply for construction, alteration or repair, including those contracts with small business owners.

More details of these requirements are available in the Efficiency Kansas program manual and at <u>www.dol.gov</u>.

I, the undersigned, have been informed and agree to abide all the terms and regulations required and as stipulated in the Davis-Bacon and Related Acts.

Contractor Signature

Date

EMPLOYED ON FEDERAL OR FEDERALLY

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

- **PREVAILING**You must be paid not less than the wage rate listed in the Davis-Bacon**WAGES**Wage Decision posted with this Notice for the work you perform.
- **OVERTIME** You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.
- **ENFORCEMENT** Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.
- **APPRENTICES** Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.
- **PROPER PAY** If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

State Energy Office 1300 SW Arrowhead Road, Suite 100 Topeka, KS 66604 785-271-3185

or contact the U.S. Department of Labor's Wage and Hour Division.



WH 1321(Revised Ap Efficiency Kansas Program Manual - 83

Appendix 14 - Project Budget Calculations

(Based on a sample project that estimated \$89.00 in monthly savings)

Bank Track

Estimated monthly savings may pay for contractors only.

Step One - Calculate Contractor's Budget: \$89.00 X 180 = \$16,020

Step Two - Determine Tax Incentives Budget Enhancer: TBD by Auditor, < or = \$1,500.00

Step Three - Calculate Final Contractors Budget: \$16,020 + (up to) \$1,500.00 = \$17,520.00

Step Four – Determine Buy-Down or Shorten Term of The Loan, if applicable.

Homeowners' monthly payment pays for contractors, interest, tax incentives, and \$2.00 Energy Office (EO) fee.

Note: When customers want estimated monthly savings to pay for the entire loan payment including contractors, the lender's interest costs, and the \$2.00 SEO fee, the auditor can calculate the appropriate budget numbers.

Utility Track - The 90% Rule

Estimated monthly savings must pay for contractors, utility fees, and \$2.00 EO fee, while the customer must realize at least 10% in savings.

Step One - Determine 90% of Estimated Savings: \$89.00 X 0.9 = \$80.10

Step Two - Subtract EO Fee: \$80.10 - \$2.00 = \$78.10

Step Three - Calculate Overall Budget: \$78.10 X 180 = \$14,058.00

Step Four - Calculate Contractors Budget: **\$14,058.00** – **Utility Fees = Contractors Budget.** Utility fees will vary from one utility to the next, so this calculation will be utility specific.

Step Five - Determine Buy-Down or Shorten Term Of The Loan, if applicable.

Homeowners monthly payment pays for contractors, utility fees, and \$2.00 EO fee.

Appendix 15: Energy Savings Report

Auditor Information
Name of Auditor:
Company:
Structure Information
Address of structure being audited
Total square feet of space
Building Type:ResidentialCommercialIndustrial
Fuel Savings Information
Annual reduction of natural gas (MCF)
Annual reduction of electricity (kWh)
Annual demand reduction (kW)
Annual reduction of fuel oil (gallons)
Annual reduction of propane (gallons)
Annual reduction of Gasoline and Diesel Fuel (gallons)
Renewable Energy (if applicable)
Installed capacity of wind generation (kW)
Electricity generated from wind (kWh)
Installed capacity of solar photovoltaic (kW)
Electricity generated from solar photovoltaic (kWh)
Installed capacity of other renewable sources (kW)
Electricity generated from other renewable sources (kWh)

Appendix 16: Certificate of Project Completion

CUSTOMER:	
ADDRESS:	
AUDITOR	

TOTAL PROJECT COST:

This is to certify that a final inspection of the above Project has been conducted jointly by the Auditor, the Customer and the Bank or Utility, and that the Parties have determined that the Project has been fully completed in accordance with the Audit Specifications submitted to Bank or Utility and approved by the State Energy Office for Efficiency Kansas financing.

The Customer accepts the project as being fully completed and assumes the responsibility for maintenance, custodial care and utilities for the premises.

AUDITOR	Final Inspection Blower Door Reading		cfm ⁵⁰
	ACH ⁵⁰	NACH	
		Date	
Printed Name	Signature		
<u>CUSTOMER</u>		**Total Hours Worked _	
Printed Name	Signature	Date _	
UTILITY/BANK			
		Date	
Printed Name	Signature		
Notes/Comments:			

** This number is the sum of all hours worked by all hired contractors and their staff on the project. Example: One contractor employed 3 people for 7 hours on Wednesday; 4 people worked 6 hours on Thursday and one person worked 5 hours on Friday. Another contractor had 2 employees working intermittently during the same week, each accumulating 7 hours. The Total Hours for this project would be: 21 + 24 + 5 + 14 = 64 Total Hours Worked

Appendix 17 - Project Submittal Checklist

Note:

1=submit at approval stage 2=Submit based on actual pricing 3=submit at project completion

	1	General Information
	1	Auditor Name
	1	Auditor ID Number - Auditor ID verification form
	1	Software used & Version
	1	Code Of Ethics/ Disclosure
	1	Customer Interview
	1	Inspection Data - Exterior
	1	Exterior Plan View
	1	Site Data collection forms and notes
	1	Photos or Elevation drawings
	1	Measurements
	1	Roof Condition
	1	Water Shedding
	1	Inspection Data - Interior
	1	Attic(s)
	1	Wiring
	1	Ventilation - ASHRAE 69-
	1	Ceilings
	1	Walls
	1	Floors
	1	Basement
	1	Crawlspace
	1	Mechanical Forms
	1	Furnace
	1	Water heater
	1	Duct Leakage & location
	1	Moisture control (no form requirement)
	1	Unvented Space Heater
		CAZ testing, Worst Case/ Combustion Appliance Zone Testing information
		Biower door testing - record of testing
		Efficiency Kansas IN Factors / Building tightness limits
		Uther Repairs
		Realth & Safety
		Estimated/Preliminary Conservation Plan - Estimated measure costs
-		
-		Improvement Analysis
-		Retront Teport
	1	Flinted Building File
	1	Electronic Building File
	1	Projected Savings Forms
	1	Efficiency Kansas Savings Calculations
-	1	Enclored Sovings Deport
-	1	Historical Fuel Consumption 12 Months Litility Lisage
	$\frac{1}{2}$	Contractor Rids
	$\frac{2}{2}$	Actual Bids
	$\frac{2}{2}$	Terms and Conditions Agreements
	2	Davis-Bacon Acknowledgement
	$\frac{2}{2}$	Revised Conservation plan - Based on actual bid pricing
	$\frac{2}{2}$	Cover letter
\vdash	$\frac{2}{2}$	Improvement Analysis
\vdash	$\frac{1}{2}$	Retrofit report
	$\frac{1}{2}$	Electronic Building File
	3	Project Completion Report Efficiency Kansas P
L	1	· · ·

Appendix 18: Utility Contact Form

Kansas Corporation Commission Efficiency Kansas UTILITY CONTACT INFORMATION

PLEASE COMPLETE & RETURN THIS FORM TO: Kansas Corporation Commission, State Energy Office, Attn: Efficiency Kansas Manager, 1300 SW Arrowhead Road, Suite 100, Topeka, KS 66604-4074

Utility Name:	
Home Office Address:	
Information Provided By:	
CONTACT(S) FOR ENERGY I	EFFICIENCY PROGRAM
Name:	Title:
Address:	City, State, Zip:
Phone: Fax:	Email:
Name:	Title:
Address:	City, State, Zip:
Phone: Fax:	Email:
<u>CONTACT(S) FOR ENERGY</u>	AUDIT CUSTOMER SUPPORT
Name:	Title:
Address:	City, State, Zip:
Phone: Fax:	Email:
Name:	Title:
Address:	City, State, Zip:
Phone: Fax:	Email:
CONTACT(S) FOR GENERAL	ACCOUNTING & BALANCE CONFIRMATIONS
Name:	Title:
Address:	City, State, Zip:
Phone: Fax:	Email:
Name:	Title:
Address:	City, State, Zip:
Phone: Fax:	Email:

APPENDIX 19 - SHPO PROGRAMMATIC AGREEMENT

PROGRAMMATIC AGREEMENT BETWEEN THE UNITED STATES DEPARTMENT OF ENERGY, THE KANSAS ENERGY OFFICE, KANSAS HOUSING RESOURCES COMMISSION AND THE KANSAS STATE HISTORIC PRESERVATION OFFICE REGARDING EECBG, SEP AND WAP UNDERTAKINGS February 18, 2010

WHEREAS, the United States Department of Energy (DOE) administers the following financial assistance programs: *the Energy Efficiency and Conservation Block Grant Program* under the Energy Independence and Securities Act of 2007 (EECBG); *the State Energy Plan* under the Energy Policy and Conservation Act of 1975 and the State Energy Efficiency Programs Improvement Act of 1990 (SEP); and *the Weatherization Assistance Program* (WAP) for Low-Income Persons under Title IV of the Energy Conservation and Production Act, the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, and the American Recovery and Reinvestment Act of 2009 (ARRA); collectively referred to as the "Programs";

WHEREAS, the unprecedented levels of funding available to the Programs, due in large measure to ARRA, has created a large volume of projects requiring expedited historic preservation reviews to ensure the timely obligation of funds, that create new jobs, and improve local and state economies;

WHEREAS, the Kansas State Historic Preservation Office (SHPO) is experiencing unprecedented numbers of requests for historic preservation review of undertakings funded by all Federal Agencies, including undertakings funded by the Programs;

WHEREAS, the Kansas Energy Office and the Kansas Housing Resources Commission (Recipients) are receiving financial assistance from DOE to carry out the Programs;

WHEREAS, the projects funded by the Programs are undertakings subject to review under Section 106 of the National Historic Preservation Act, 16 U.S.C 470f (NHPA) and its implementing regulations at 36 CFR part 800 and include rehabilitation, energy efficiency retrofits, renewables, and weatherization (undertakings);

WHEREAS, DOE has determined that these undertakings may adversely affect properties that are listed in or eligible for listing in the National Register of Historic Places (National Register) and subject to the requirements of the National Historic Preservation Act (NHPA);

WHEREAS, in accordance with 36 CFR 800.14(b)(4), the Advisory Council on Historic Preservation (the ACHP) has designated this Agreement as a Prototype Programmatic Agreement (PA), which does not require the participation or signature of the ACHP;

WHEREAS, DOE, the ACHP, and the National Conference of State Historic Preservation Officers (NCSHPO) have determined that the requirements of Section 106 can be more effectively and efficiently fulfilled if a programmatic approach is used to stipulate roles and responsibilities, exempt undertakings from Section 106 review, establish tribal protocols, facilitate identification and evaluation of historic properties, establish treatment and mitigation measures, and streamline the resolution of adverse effects;

WHEREAS, by memorandum dated August 28, 2009 (attached as Appendix C), DOE delegated certain tasks necessary for compliance with Section 106 of the NHPA to grantees and subgrantees of funding from the Programs (Recipients);

WHEREAS, according to the August 28, 2009 memorandum, the Recipients are authorized, to initiate Section 106 compliance in accordance with 36 CFR 800.2 (c)(4);

WHEREAS, the undertakings covered under this PA are not located on Tribal lands and are primarily smaller scale activities and routine projects, without the potential for adversely affecting historic properties, rather than complex undertakings with a greater potential to adversely affect historic properties, which would require completion of the typical Section 106 review process;

WHEREAS, DOE and the ACHP were guided by the principles set forth in the ACHP's Affordable Housing Policy statement, adopted on November 9, 2006, in negotiating this Programmatic Agreement upon which this PA is based;

NOW, THEREFORE, DOE, the Kansas Energy Office, the Kansas Housing Resources Commission and the Kansas SHPO agree that the Programs shall be administered in accordance with the following stipulations to satisfy DOE's Section 106 responsibilities for all individual undertakings of the Programs:

STIPULATIONS

DOE, the Recipient, and the SHPO shall ensure that the following stipulations are carried out:

I. Roles and Responsibilities

- A. DOE shall be responsible for providing oversight of the PA, executing Pas with SHPOs, participating in the resolution of disputes between the SHPO and the Recipient, and providing technical assistance and guidance as needed. DOE shall be responsible for government-to-government consultation with Indian tribes, unless the Indian tribe agrees to the delegation of this responsibility to a Recipient.
- B. The Recipient shall be responsible for consulting with consulting parties and conducting Section 106 reviews in a timely manner, preparing documentation for the SHPO and DOE, and maintaining records on undertakings. Undertakings that involve properties greater than fifty (50) years old and are not listed on either Appendices A or B shall be submitted to the SHPO for review in accordance with this agreement.
- C. Recipient shall ensure that the provisions of this PA apply to its sub-awards.
- D. The Recipient is encouraged to use qualified professionals in conducting their Section 106 requirements.
- E. The SHPO shall be responsible for reviewing project documentation and participation in consultation as set forth in this PA.

F. The ACHP shall be responsible for providing technical guidance, participating in dispute resolutions if appropriate, and monitoring the effectiveness of this PA.

II. Tribal Review

- A. Execution of this PA presumes that DOE will conduct its government-to-government responsibilities with federal recognized Indian tribes or its Section 106 consultation requirements with Native Hawaiian Organizations (NHO) consistent with Federal laws and regulations. The Recipient shall not substitute for DOE in matters related to potential effects on historic properties of cultural and religious significance to Indian tribes, except with the concurrence of the Indian tribe or NHO.
- B. DOE acknowledges that Indian tribes possess special expertise in assessing the National Register eligibility of properties with tribal religious and cultural significance, and requires the Recipient to consult with them, as appropriate, in identifying historic properties listed in or eligible for listing in the Area of Potential Effect (APE) of program areas.
- C. If the Recipient notifies DOE that an undertaking may result in an adverse effect on cultural resources with tribal religious and cultural significance, DOE shall notify Indian tribes of individual undertakings that may result in an adverse effect on cultural resources with tribal religious and cultural significance and invite them to participate in consultations. Indian tribes and the Recipient may develop a bi-party agreement that outlines their review procedures for undertakings covered in a PA. Such agreements will be submitted to DOE for review and approval, and a copy sent to the ACHP for its records.
- III. State Interagency Agreements

The Recipient may review an undertaking in accordance with the terms of an interagency agreement, in lieu of the other terms of this PA, if:

- 1. The interagency agreement was in negotiations by the Recipient and SHPO on or before February 5, 2010, and will be executed no later than February 19, 2010;
- 2. The Recipient and SHPO both agree through execution of this PA that the interagency agreement applies to the undertaking and provides a historic preservation review process that is similar to that provided by the other terms of this PA; and
- 3. DOE does not object to the use of the interagency agreement to fulfill the requirements of Section 106 of the NHPA for the undertakings.
- IV. Exemptions from Section 106 review
 - A. The Recipient shall not submit to the SHPO undertakings in accordance with Appendices A or B as they do not have the potential to cause effects on historic properties even when historic properties may be present. The Recipient and the SHPO **may agree to modify Appendix A and/or Appendix B**, with advance notification of such modifications to the ACHP and DOE. Recipient will maintain file records with

verification that undertakings were determined to be exemptions for a period of three (3) years from project completion and make them available for review if requested by DOE or the ACHP.

- B. If a property has been determined to be ineligible for inclusion in the National Register within the last five (5) years from the date the Recipient made its application for DOE financial assistance, then no further review is required under this PA.
- C. Recipients of any of the Programs may utilize either Appendix A or Appendix B in identifying exempt undertakings, regardless of whether the Exhibit on which the undertaking relates to another federally funded program.
- V. Review Procedures for Non-exempt Undertakings
 - A. For undertakings not exempted under Stipulation III or IV, if the Recipient has an executed Section 106 Agreement per 36 CFR part 800 for Community Development Block Grants (CDBG) with the SHPO that 1) is still in effect; 2) covers the same undertakings as the DOE grant programs; and 3) is up to date with reporting to the SHPO, no separate Section 106 review is needed.
 - B. Otherwise, the Recipient shall review the undertaking in accordance with Stipulations VI through X below, or consistent with SHPO approved historic preservation protocols.

VI. Identification and Evaluation

- A. The Recipient shall establish the Area of Potential Effect (APE) for all program undertakings defined in the DOE grant agreement for the State.
- B. The Recipient shall complete the identification and evaluation of historic properties utilizing existing information including the National Register, state surveys, and county and local surveys. In addition, the Recipient and SHPO may use or develop protocols that are consistent with 36 CFR Section 800.4 for the review of consensus determinations of eligibility.
- C. The Recipient shall consult with Indian tribes or NHOs to determine if there are historic properties of religious or cultural significance that were not previously identified or considered in surveys or related Section 106 reviews, as appropriate.
- D. Archaeology surveys are required only for new ground disturbing project undertakings and shall be limited in scope subject to the concurrence of Indian tribes or NHOs that may attach religious or cultural significance to historic properties in the project area. Project undertakings requiring more than minimal ground disturbance shall be forwarded to the SHPO and THPOs or Indian tribes or NHOs concurrently for review.
- E. In order to avoid potential delays, prior to initiating undertakings the SHPO may review the Recipient's scopes of work for above ground surveys and archaeology surveys that are deemed necessary to administer the Recipient's Programs and to implement the terms of this PA.
- F. The Recipient shall refer disputes regarding determinations of eligibility to DOE for review and referral to the Keeper of the National Register in accordance with 800.4(c)(2).

VII. Treatment of Historic Properties

- A. When the Recipient and the SHPO concur that an undertaking is designed and planned in accordance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68, July 12, 1995 *Federal Register*) (Standards), the undertaking will not be subject to further Section 106 review.
- B. The Recipient and SHPO will make best efforts to expedite reviews through a finding of "No Adverse Effect with conditions" when the Recipient and the SHPO concur that plans and specifications or scopes of work can be modified to ensure adherence to the Standards. If the undertaking cannot meet the Standards or would otherwise result in an adverse effect to historic properties, the Recipient will proceed in accordance with Stipulation VIII.

VIII. Resolution of Adverse Effects

- A. The Recipient shall consult with the SHPO, and Indian tribes or NHOs as appropriate, to resolve adverse effects. The Recipient will notify DOE of the pending consultation, and DOE will participate through its designated representative.
- B. The Recipient may use standard stipulations included in Attachment A of this
- C. Consultation shall be coordinated to be concluded in 45-days or less to avoid the loss of funding. In the event the consultation extends beyond this period, DOE shall formally invite the ACHP to participate in consultation. The ACHP will consult with DOE regarding the issues and the opportunity to negotiate a Memorandum of Agreement (MOA). Within seven (7) days after notification, the ACHP will enter consultation and provide its recommendation for either concluding the Section 106 review through an MOA or Chairman's comment from the ACHP to the Secretary of DOE within 21 days.
- D. In the case of an ACHP Chairman comment, DOE may proceed once DOE provides its response to the ACHP.
- IX. Emergency Situation Undertakings
 - A. When an emergency undertaking is required for historic properties associated with the undertakings, the Recipient shall allow SHPO five (5) business days to respond, if feasible. Emergencies exist when there is a need to eliminate an imminent threat to health and safety of residents as identified by local or County building inspectors, fir department officials, or other local or County officials.
 - 1. The Recipient shall forward documentation to the SHPO for review immediately upon notification that an emergency exists. Documentation should include: nature of the emergency; the address of the historic property involved; photographs showing the current condition of the building; and the time-frame allowed by local officials to respond to, or correct, the emergency situation.
 - 2. The Recipient shall consider mitigation measures recommended by the SHPO and implement them, if feasible.

- X. Public and Consulting Party Involvement
 - A. The Recipient shall maintain a list of undertakings and shall make the documentation available to the public. The Recipient shall notify the SHPO if its notified of other consulting parties or public interest in any undertakings covered under the terms of the PA.
 - B. The Recipient, independently or at the recommendation of the SHPO, may invite interested persons to participate as consulting parties in the consultation process for adverse effects in accordance with Stipulations VI, VII, and VIII.

XI. Administrative Coordination

- A. The Recipient, in consultation with the SHPO, may develop procedures allowing for the use of local reviews conducted by Certified Local Governments (CLG) when such procedures avoid the duplication of efforts.
- B. The Recipient, in consultation with the SHPO, may determine that an undertaking has already been reviewed under an existing Section 106 effect determination or agreement document, then no further Section 106 review under this PA is required.
- C. The SHPO shall provide comments to the Recipient within thirty (30) days, unless otherwise agreed upon by the SHPO and the Recipient, for reviews required under the terms of this PA with the exception of emergency undertakings. In the event that the SHPO fails to comment within the established period, the Recipient can assume the SHPO has concurred, and proceed.
- D. The Recipient shall advise sub-grantees in writing of the provisions in Section110 (k) of the Act and will advise the sub-grantees that Section 106 reviews may be compromised when project undertakings are initiated prematurely.
- E. The SHPO and the Recipient shall make every effort to expedite Section 106 reviews for a period of less than the 30-day review when consistent with the terms of the DOE grant agreements and the Recipient intends to utilize the services of qualified professionals.
- F. For projects that will require either an Environmental Assessment or an Environmental Impact Statement under the National Environmental Policy Act (NEPA), nothing contained in this PA shall prevent or limit the Recipient and DOE from utilizing the procedures set forth in 36 CFR 800.8 to coordinate and conduct the historic preservation review in conjunction with the NEPA review.

XII. Discoveries

If historic properties are discovered or unanticipated effects on historic properties located within a project's APE after the undertaking has been initiated, the Recipient will implement the following procedures:

- A. The Recipient shall immediately cease all operations for the portion of the undertaking with the potential to affect an historic property;
- B. The subgrantee shall advise the Recipient of the National Register eligibility of the historic property and the potential of the undertaking to impact its qualifying

characteristics and an explanation of the whether the SHPO or Indian tribes and NHOs concur with proposed avoidance, treatment plan or mitigation plan;

- C. The Recipient or DOE shall notify Indian tribes or NHOs of any discoveries that have the potential to adversely affect sites or buildings of religious or cultural significance to them. After reviewing such discoveries, the Indian tribes or NHOs can request further consultation on the project by notifying DOE, ACHP, and the SHPO in writing.
- D. The Recipient or subgrantee shall implement the avoidance, treatment or mitigation plan and advise the Recipient and DOE, if appropriate, of the satisfactory completion of the approved work. Once the approved work is complete may resume the activities that were halted to address the discovery situation.

XIII. Dispute Resolution

- A. Should the SHPO object within the time frames outlined in this PA to any project undertakings, the Recipient shall **consult further with the** SHPO to attempt to remove the basis for the SHPO's objection. In the event that the SHPO's objection is not withdrawn, then the Recipient shall refer the matter to DOE. The Recipient shall forward all documentation relevant to DOE, who will notify and consult with the ACHP.
- B. The ACHP will provide its recommendations, if any, within 21days following receipt of relevant documentation. DOE will take into account the ACHP's recommendations or formal comments in reaching a final decision regarding the dispute.

XIV. Reporting and Monitoring

- A. DOE, the ACHP, and the SHPO may monitor any undertakings carried out pursuant to this PA. The ACHP may review undertakings, if requested by DOE. DOE shall be entitled to address and make determinations on overall policy or administrative issues related to the implementation of these Programs.
- B. The Recipient shall adhere to DOE's established protocols for ARRA reporting program undertakings.
- C. DOE will submit annual reports to ACHP and NCSHPO commencing October
- D. 15, 2010 summarizing the Programs' undertakings, to include data on number of undertakings, the number of exempt undertakings, and reviews conducted under this PA.

XV. Amendments

DOE, the SHPO, or the Recipient may request that this PA be amended, whereupon DOE and the SHPO, and the ACHP, if involved, will consult to consider such an amendment. Any such amendments shall be developed and executed among DOE, the Recipient, and the SHPO in the same manner as the original PA, and pertain only to this State PA.

XVI. Duration of Agreement

This PA will be valid for three (3) years from the date of execution, as verified with DOE filing the PA with the ACHP.

XVII. Termination of Agreement

DOE, the SHPO, or the Recipient may terminate the PA, provided that the party proposing termination notifies the other signatories and the ACHP in writing explaining the reasons for termination and affording the other signatories at least thirty (30) days to consult and seek alternatives to termination.

Signatories:

Susan Duffy, Executive Director, Kansas Housing Resources Commission	
Gary Allsup, Executive Director, Kansas Energy Office	Date
Jennie Chinn, Kansas State Historic Preservation Officer	Date
UNITED STATES DEPARTMENT OF ENERGY OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY OFFICE OF WEATHERIZATION AND INTERNATIONAL PROGRAMS	Date

APPENDIX A—WAP UNDERTAKINGS EXEMPT FROM SECTION 106 REVIEW

All undertakings will be done in accordance with applicable local building codes or the International Building Code, where applicable. In accordance with 36 CFR 800.3(a)(1), the following undertakings have been determined to have no potential to cause effects on historic properties:

A. Exterior Work

- 1. Air sealing of the building shell, including caulking, weather-stripping, and other air infiltration control measures on windows and doors, and installing thresholds in a manner that does not harm or obscure historic windows or trim.
- 2. Thermal insulation, such as non-toxic fiberglass and foil wrapped, in walls, floors, ceilings, attics, and foundations in a manner that does not harm or damage historic fabric.
- 3. Blown in wall insulation where no holes are drilled through exterior siding, or where holes have no permanent visible alteration to the structure
- 4. Removable film on windows (if the film is transparent), solar screens, or window louvers, in a manner that does not harm or obscure historic windows or trim.
- 5. Reflective roof coating in a manner that closely resembles the historic materials and form, or with materials that restore the original feature based on historic evidence, and in a manner that does not alter the roofline, or where not on a primary roof elevation or visible from the public right-of-way.
- 6. Storm windows or doors, and wood screen doors in a manner that does not harm or obscure historic windows or trim.
- 7. Repair of primary windows, doors and door frames
- 8. Repair of minor roof and wall leaks prior to insulating attics or walls, provided repairs closely resemble existing surface composite

B. Interior Work

Special Note: Undertakings to interior spaces where the work will not be visible from the public right of way; no structural alterations are made; no demolition of walls, ceilings or floors occurs; no drop ceilings are added; or no walls are leveled with furring or moved, should be automatically excluded from **SHPO** review. This work includes:

1. Energy efficiency work within the building shell:

- a. Thermal insulation in walls, floors, ceilings, attics, crawl spaces, ducts and foundations
- b. Blown in wall insulation where no decorative plaster is damaged.
- c. Plumbing work, including installation of water heaters
- d. Electrical work, including improving lamp efficiency
- e. Sealing air leaks using weather stripping, door sweeps, and caulk and sealing major air leaks associated with bypasses, ducts, air conditioning units, etc.
- f. Repair or replace water heaters
- g. Adding adjustable speed drives such as fans on air handling units, cooling tower fans, and pumps
- h. Install insulation on water heater tanks and water heating pipes

- i. Install solar water heating systems, provided the structure is not visible from the public right of way
- j. Install waste heat recovery devices, including desuperheater water heaters, condensing heat exchangers, heat pump and water heating heat recovery systems, and other energy recovery equipment
- k. Repair or replace electric motors and motor controls like variable speed drives
- 1. Incorporate other lighting technologies such as dimmable ballasts, day lighting controls, and occupant controlled dimming

2. Work on heating and cooling systems:

- a. Clean, tune, repair or replace heating systems, including furnaces, oilers, heat pumps, vented space heaters, and wood stoves
- b. Clean, tune repair or replace cooling systems, including central air conditioners, window air conditioners, heat pumps, and evaporative coolers
- c. Install insulation on ducts and heating pipes
- d. Conduct other efficiency improvements on heating and cooling systems, including replacing standing pilot lights with electronic ignition devices and installing vent dampers
- e. Modify duct and pipe systems so heating and cooling systems operate efficiently and effectively, including adding return ducts, replace diffusers and registers, replace air filters, install thermostatic radiator controls on steam and hot water heating systems
- f. Install programmable thermostats, outdoor reset controls, UL listed energy management systems or building automation systems and other HVAC control systems

3. Energy efficiency work affecting the electric base load of the property:

- a. Convert incandescent lighting to fluorescent
- b. Add reflectors, LED exist signs, efficient HID fixtures, and occupancy (motion) sensors
- c. Replace refrigerators and other appliances

4. Health and safety measures:

- a. Installing fire, smoke or carbon dioxide detectors / alarms
- b. Repair or replace vent systems on fossil-fuel-fired heating systems and water heaters to ensure that combustion gasses draft safely to outside
- c. Install mechanical ventilation; in a manner not visible from the public right of way, to ensure adequate indoor air quality if house is air-sealed to building tightness limit

APPENDIX B – SEP AND EECBG UNDERTAKINGS EXEMPT FROM SECTION 106 REVIEW

A. Category 1 - No Consultation Required

In addition to the undertakings provided in *Exhibit A (WAP Undertakings exempt from Section 106 Review)*, DOE and the SHPO have concluded that the following undertakings do not have the potential to cause effects on historic properties per 36 CFR § 800.3(a)(1):

1. General efficiency measures not affecting the exterior of the building:

- a. Energy audits and feasibility studies
- b. Weatherization of mobile homes and trailers
- c. Caulking and weather-stripping around doors and windows in a manner that does not harm or obscure historic windows or trim.
- d. Water conservation measures like low flow faucets, toilets, shower heads, urinals and distribution device controls
- e. Repairing or replacing in kind existing driveways, parking areas, and walkways with materials of similar appearance
- f. Excavating to gain access to existing underground utilities to repair or replace them, provided that the work is performed consistent with previous conditions
- g. Ventilating crawl spaces
- h. Replacement of existing HVAC equipment including pumps, motors, boilers, chillers, cooling towers, air handling units, package units, condensers, compressors, heat exchangers that do not require a change to existing ducting, plumbing, electrical, controls or a new location, or if ducting, plumbing, electrical and controls are on the rear of the structure or not visible from any public right of way.
- i. Adding or replacing existing building controls systems including HVAC control systems and the replacement of building-wide pneumatic controls with digital controls, thermostats, dampers, and other individual sensors like smoke detectors and carbon monoxide detectors (wired or non-wired)
- j. New installation of non-hard wired devices including photo-controls, occupancy sensors, carbon dioxide, thermostats, humidity, light meters and other building control sensors, provided the work conforms with applicable state and local permitting requirements
- k. Adding variable speed drive motors
- 1. Insulation of water heater tanks and pipes
- m. Furnace or hot water tank replacement that does not require a visible new supply or venting

2. Insulation measures not affecting the exterior of the building:

- a. Thermal insulation installation in walls, floors and ceilings (excluding spray foam insulation)
- b. Duct sealing, insulation, repair or replacement in unoccupied areas
- c. Attic insulation with proper ventilation; if under an effective R8 add additional R-19 up to R-38 (fiberglass bat only)
- d. Band joist insulation R-11 to R19 as applicable
- e. Water heater tank and pipe insulation

3. Electric base load measures not affecting the exterior of the building:

- a. Appliance replacement (upgrade to EnergyStar appliances)
- b. Compact fluorescent light bulbs
- c. Energy efficient light fixtures, including ballasts (Replacement)
- d. LED light fixtures and exit signs (Replacement)
- e. Upgrade exterior lighting (replacement with metal halide bulbs, LEDs, or others) along with ballasts, sensors and energy storage devices not visible from any public right of way

B. <u>Category 2 - No Consultation Required if SOI Standards are Adhered to and Verified by Qualified Staff, if Applicable</u>

1. Efficiency and repair measures:

- a. Painting over previously painted exterior surfaces, provided destructive surface preparation treatments are not used (such as water-blasting, sandblasting and chemical removal)
- b. Installation or replacement of downspout extensions, provided that the color of the extensions is historically appropriate for the period and style of the property
- c. Repairing or upgrading electrical or plumbing systems and installing mechanical equipment, in a manner that does not permanently change the appearance of the interior or exterior of the building
- d. Installation of new HVAC equipment (such as pumps, motors, boilers, chillers, cooling towers, air handling units, package units, condensers, compressors, or heat exchangers) in a manner that does not permanently change the appearance of the building.
- e. Integrated shingle-style or thin film solar systems on the rear roof of the structure, behind the parapet or not visible from the public right of way.
- f. Solar systems (including photovoltaic and solar thermal) not visible from the public right of way and if ground-mounted can be installed without ground disturbance and if roof-mounted will not require new building reinforcement.
- g. Wind system additions to existing wind power facilities that will not require ground disturbance and if building mounted will not require building reinforcement.
- h. Lead-based paint abatement in accordance with the Standards and Preservation Brief #37
- i. Building cleaning in accordance with the Standards and Preservation Briefs #1, #6, and #10
- j. Repairing masonry, including re-pointing and rebuilding chimneys in accordance with the Standards and Preservation Brief # 2

- k. New lighting controls including photo-sensors and shading elements if not visible from the public right of way
- 1. New metering devices in a manner that does not permanently change the appearance of the interior or exterior of the building, or if the addition is on the exterior of the structure and is not visible from the public right of way
- m. New water efficient fixtures and fittings in a manner that does not permanently change the appearance of the interior or exterior of the building

2. Installation or repair of roofing, siding, and ventilation:

- a. White Roofs, Cool Roofs, Green Roofs, Sod or Grass Roofs not visible from the public right-of-way
- b. Rainwater catches and/or gray water systems not viewable from the public right of way
- c. Repair or replacement of existing exterior siding provided that new siding closely resembles the existing siding in dimension, profile and texture
- d. Flat or shallow pitch roof replacement (shallow pitch is defined as a pitch with a rise-to-run ratio equal to or less than 3" to 12") with no part of the surface of the roof visible from the ground
- e. Roof repair or replacement with materials that closely resemble the historic materials and form, or with replacement materials that are close to the original in color, texture, composition and form to restore the original feature based on historic evidence, and in a manner that does not alter the roofline
- f. Installing vents (such as continuous ridge vents covered with ridge shingles or boards, roof vents, bath and kitchen vents, soffit and frieze board vents or combustion appliance flues) if not located on a primary roof elevation or not visible from the public right-of-way
- g. Installing foundation vents, if painted or finished to match the existing foundation material.

3. Windows and doors:

- a. Installing storm windows, storm doors or wood screen doors in a manner that does not harm or obscure historic windows, doors or trim
- b. Installing insulated exterior replacement doors where the door openings are not altered and are not visible from the public right-of-way
- c. Window or glazing treatments that do not change the appearance of the interior or exterior of the building, or if the addition is on the exterior of the structure

APPENDIX C – AUGUST 28, 2009 DELEGATION MEMORANDUM (next page)



Department of Energy

Washington, DC 20585

August 28, 2009

MEMORANDUM

- TO: State Historic Preservation Officers Tribal Historic Preservation Officers
- FROM: Catherine R. Zoi Assistant Secretary Energy Efficiency and Renewable Energy
- SUBJECT: Memorandum from EERE Regarding Delegation of Authority for Section 106 Review of Undertakings, Assisted by the U. S. Department of Energy, Office of Energy Efficiency and Renewable Energy

The Department of Energy (DOE), through the Office of Energy Efficiency and Renewable Energy (EERE), provides financial assistance to states, U.S. territories, units of local government, and Indian Tribes through the Energy Efficiency and Conservation Block Grant (EECBG) Program, Weatherization Assistance Program (Weatherization), and State Energy Program (SEP). Attached hereto is a one-page summary of the three programs. Additional program information is available at the following links: http://www.eecbg.energy.gov/; <a href="http://www

Through this memorandum, DOE intends to formalize the role of the States and DOE's award recipients (Applicants) to assist DOE in carrying out its Section 106 compliance responsibilities. In order to streamline DOE's compliance with Section 106 and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800), EERE is authorizing its Applicants under the EECBG, Weatherization, and SEP programs to initiate consultation pursuant to 36 CFR § 800.2(c) (4). Effective immediately, EERE Applicants and their authorized representatives may consult with the State Historic Preservation Officers (SHPOs) and Tribal Historic Preservation Officers (THPOs) to initiate the review process established under 36 CFR Part 800 and to carry out some of its steps. Specifically, EERE Applicants are authorized to gather information to identify and evaluate historic properties, and to work with consulting parties to assess effects. EERE retains responsibility to document its findings and determinations in order to appropriately conclude Section 106 review.

EERE also remains responsible for initiating government-to-government consultation with federally recognized Indian Tribes. EERE's responsibility to consult on a government-to-government basis with Indian Tribes as sovereign nations is established through specific authorities and is explicitly recognized in 36 CFR Part 800. Accordingly, EERE may not delegate this responsibility to a non-federal party without



the agreement of the Tribe to do so. Where no such agreement exists, EERE will initiate tribal consultation.

Authorized Applicants must notify EERE whenever:

- Either the EERE Applicant or the SHPO/THPO believes that the Criteria of Adverse Effect pursuant to 36 CFR § 800.5, apply to the proposal under consideration by EERE;
- There is a disagreement between an Applicant, or its authorized representative, and the SHPO/THPO about the scope of the area of potential effects, identification and evaluation of historic properties and/or the assessment of effects;
- There is an objection from a consulting party or the public regarding their involvement in the review process established by 36 CFR Part 800, Section 106 findings and determinations, or implementation of agreed upon measures; or
- There is the potential for a foreclosure situation or anticipatory demolition as defined under 36 CFR § 800.9(b) and 36 CFR § 800.9(c), respectively.

EERE will participate in the consultation when such circumstances arise.

EERE expects its Applicants that are so authorized, to involve consulting parties in Section 106 findings and determinations and to carry out the exchange of documentation and information in a respectful, consistent and predictable manner. Technical assistance is available to Applicants from EERE regarding the coordination of Section 106 reviews, if needed.

If you have any questions, please contact Dr. F. G. (Skip) Gosling, DOE Federal Preservation Officer/Chief Historian, Office of History and Heritage Resources, (202) 586-5241or <u>skip.gosling@hq.doe.gov</u> or Steven P. Blazek, NEPA Compliance Officer, (303) 275-4723 or <u>steve.blazek@go.doe.gov</u>.

Appendix 20: Variance for Twelve Months of Continuous Utility Usage

Continuous Utility Usage Explained

The total amount of funds that a project may receive through Efficiency Kansas is determined by calculating the estimated monthly savings. In order to accurately determine the savings that a homeowner/renter could see, an auditor will need to review at least twelve months of consecutive utility bills for that home or business. This homeowner/renter will have distinct lifestyle characteristics that will be reflected in their utility bills. Twelve months of consecutive living in this home by this homeowner/renter will provide the most accurate savings calculations.

Shared Utility History

For those homeowners/renters who have not lived in their home for a full twelve months, the program will allow a homeowner/renter to use a previous homeowner or renter's utility history for this required data. Access to and use of this data must be approved by previous occupants and received legally.

Risks to Consider

Any homeowner/renter that chooses to use a previous homeowner's utility history shall understand that this could affect the anticipated estimated monthly savings. New occupants of a home could have dramatically different lifestyles than the previous homeowners.

Acknowledgement

I, the undersigned, acknowledge that there are potential risks in using utility history from previous occupants. Due to this, savings estimates provided by the auditor may not be accurate.

Printed Name of Homeowner/Renter	Signature	Date
Printed Name of Landlord (if applicable)	Signature	Date