

Texas Energy Efficiency Field Study

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TECCC

February 25, 2015

Richard Morgan



The South-central Partnership for Energy Efficiency
as a Resource

The Field Study is:

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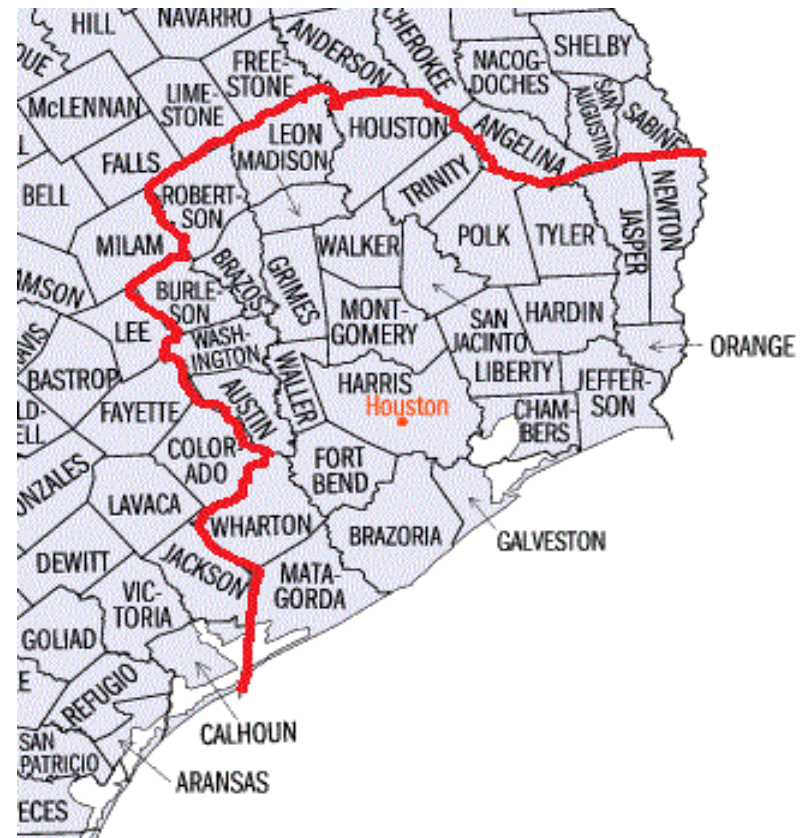
A joint project of SPEER and NASEO in collaboration with SECO and funded by DOE to determine whether an investment in building energy code education, training and outreach can produce a significant, measurable change in residential energy savings.

Data Collection Area

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Thirty counties in SE Texas:
Matagorda to LA,
Coast to above Bryan-
College Station

One of eight states currently
engaged :
Alabama, Arkansas, Georgia,
Kentucky, Maryland,
North Carolina, Pennsylvania



Phases

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1. Data collection and analysis to establish energy efficiency building practices baseline.
2. Education, outreach and training influenced by data collection findings.
3. Working with EUMMOT (utilities) to design programs to support compliance.
4. Repeat data collection and measure success.

Phase One

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Baseline Study Performed by a Third Party

- Obtain permit applications lists from Permit Departments
- Contact builders for access
- Site visit of homes under construction – rough mechanical or at final – prior to occupancy.
- One visit per home to ensure that no home can be identified as code compliant or not compliant
- Builder will be provided duct and envelope test data
- Data will be anonymous – no link to address, builder or jurisdiction
- Data will be analyzed by PNNL

Statistical Validity

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- **Random sampling of homes**
 - PNNL has established how many samples from which jurisdiction based on permit numbers
 - Data Collection continues until each jurisdiction has the prescribed number of observations of:
 - Window SHGC and U-factor
 - R-value and grade of insulation
 - HVAC & WH equipment characteristics
 - High Efficacy Lighting
 - Duct tightness test
 - Envelope tightness test

Data Compiled in Great Detail



ID	Code Section	Description	Meets Requirement	Does Not Meet Requirement	Not Applicable	Not Observable	Field Observation	Format	Units	Comments	REScheck, HERS, or Other Compliance Documentation Value (if available)
Envelope Air Leakage											
F117	402.4.2.1	Blower door test results from Project Team test using RESNET Protocol (ACH @ 50 PA)						Number	ACH50		
BD1	NA	Blower door test results from previous test by other parties (ACH @ 50 PA) (for comparison only)						Number	ACH50		
FR23a	402.4.1	All joints, seams, and penetrations in building thermal envelope sealed						Check Box			
FR23b	402.4.1	Site-built windows, doors, and skylights sealed						Check Box			
FR23c	402.4.1	Openings between window and door assemblies and their respective jambs and framing sealed						Check Box			

<http://www.energycodes.gov/residential-energy-code-field-study>

Phase Two

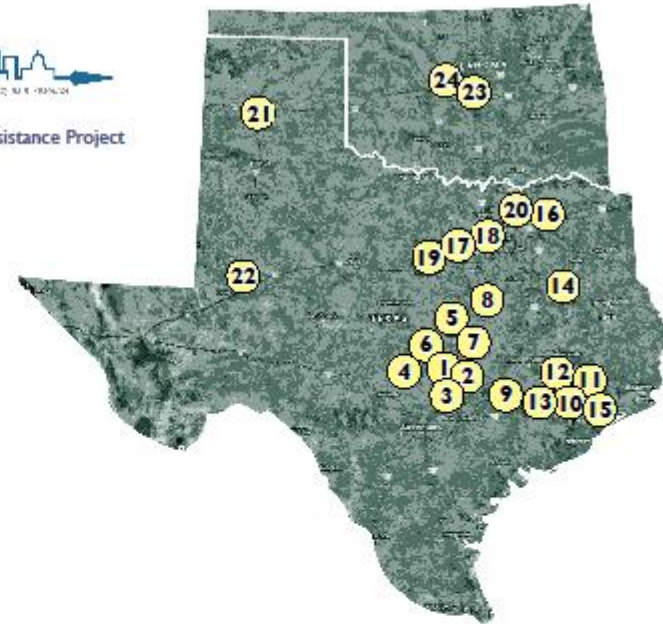
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- **Education, outreach and training**
 - Establishing local groups for training outreach
 - Speakers Bureau to provide presentations and expertise
 - SPEER staff will provide additional targeted trainings
 - Webinars will be launched for access by rural contractors or jurisdictions
 - CEU credits with all training available
 - Ambassadors provide local area assistance
 - ✦ 24 Energy Code Ambassadors, 6 in Field Study area
 - ✦ Peer to Peer resource for code officials, builders, etc

SPEER Ambassadors



Building Codes Assistance Project



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Additional Resources

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SPEER provides Advanced Energy IECC 2009 and 2012 Energy Code modules, workbooks and checklists for code officials and builders

<http://successwithenergycode.com/>



SECO has online video Energy Code Training currently available

<http://www.txenergycodetraining.org/>



Phase 3: Utility Review and Analysis

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EUMMOT collaborating with Field Study to help design new programs to support code compliance.

Could include incentive programs, educational programs, or manufacturer rebates...



Making Texas Energy Efficient

Phase Four

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Repeat data collection and baseline study to evaluate success of education, outreach and training program

2017			Holidays & Observances
January	February	March	Jan 01 New Year's Day Jan 16 Martin Luther King Day Jan 28 Chinese New Year Feb 12 Lincoln's Birthday Feb 18 Valentine's Day Feb 20 President's Day Mar 05 Ash Wednesday Mar 12 Daylight Saving Begins Mar 17 St. Patrick's Day Mar 20 Vernal equinox Apr 01 April Fool's Day Apr 16 Easter Apr 11 Texas Day Apr 26 Adm'n. Assn.'s Day May 05 Cinco de Mayo May 14 Mother's Day May 29 Memorial Day Jun 04 Juneteenth Jun 14 Flag Day Jun 18 Father's Day Jun 21 June Solstice Jul 04 Independence Day Sep 04 Labor Day Sep 15 Patriot Day Sep 22 Autumnal equinox Oct 09 Columbus Day Oct 16 Osh's Day Oct 31 Halloween Nov 05 Daylight Saving Ends Nov 11 Veterans Day Nov 23 Thanksgiving Dec 25 Christmas Dec 25 Christmas Day Dec 25 Kwanzaa Begins Dec 31 New Year's Eve
<small>Mo Tu We Th Fr Sa Su</small> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	<small>Mo Tu We Th Fr Sa Su</small> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<small>Mo Tu We Th Fr Sa Su</small> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	
April	May	June	
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July	August	September	
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October	November	December	
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2017 Calendar with Holidays by Verbeo.com <http://www.verbeo.com/calendars/2017.html> © 2016 Verbeo LLC. Free to Print

Project Take-Aways

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The project will:

- Develop baseline of industry practices in new home construction
- Using education and outreach, encourage the industry to deliver energy savings
- Expand awareness and understanding of successful practices for code compliance and energy efficiency
- Develop new programs to drive energy savings for homeowners

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Questions?



ERI Resources



- RESNET – Energy Rating Index Performance Path
http://www.resnet.us/uploads/documents/EnergyRatings_FactSheet6_Final.pdf
- U.S. D.O.E. Identification of RESNET HERS Index Values Corresponding to Minimal Compliance with IECC Performance Path
http://www.energycodes.gov/sites/default/files/documents/HERSandIECCPerformancePath_TechnicalReport.pdf
- Leading Builders of America/NAHB Research Center, IMT, Fact Sheet-Re:188-13 Adding a ratings based compliance path to the IECC
http://www.imt.org/uploads/resources/files/Fact_Sheet_on_ERI_Proposal.pdf

- Implications of the 2015 IECC Energy Rating Index, BCAP

<http://energycodesocean.org/resource/implications-2015-iecc-energy-rating-index-eri>