

Coconino County Cost Analysis:
2006 International Energy Conservation Code
2012 International Energy Conservation Code

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Introduction

To better understand the financial implications of Coconino County adoption of the 2012 International Energy Conservation Code (IECC), Coconino County Community Development has prepared the following cost estimate. This estimate compares the increased local construction costs associated with compliance with the 2012 IECC over the construction costs associated with compliance with the 2006 IECC. The objective of this document is to outline, item-by-item, the increased costs to builders, and ultimately consumers associated with a forthcoming Coconino County adoption of the 2012 IECC.

Process

This document was produced by the Coconino County Sustainable Building Program in support of Coconino County Building Division's code adoption process. The data for this estimate was collected from the *Craftsman 2013 National Construction Estimator* and from surveys of local building materials and services providers. The Building Division at Coconino County and the Coconino County Sustainable Building Program Citizens' Advisory Committee have reviewed and provided feedback through the development of this document.

This document also seeks to replicate, at a local level, the efforts of NAHB in their 2012 IECC Cost Effectiveness Analysis. NAHB's 2012 IECC Cost Effectiveness Analysis provides a basis for both national and regional comparison to the figures of a Coconino County estimate.

Next Steps

To further refine this document and provide the most accurate information, we will invite review and comment from the Northern Arizona Building Association. As a community of active building experts, building businesses and industry leaders, NABA's feedback will ensure that this cost estimation is up-to-date and accurate for the local community.

Going forward, the Coconino County Sustainable Building Program hopes to work with community partners to estimate the change in mortgage rates with the added costs of 2012 IECC adoption to provide an estimated payback period that also includes utility savings for a localized evaluation on the return on investment.

Notes:

1: Local estimation is based on 2,000sf home with window area 15% (216sf) of wall area (1440sf).

2012 IECC Cost Estimation: Coconino County / Flagstaff

2012 IECC Requirement	Cost		Cost Increase		Source
	2012 IECC	2006 IECC	per unit	2,000 sf house	
R-20 2x6 wall insulation		R-19		1440sf	
R-21, Kraft-faced, 16" OC	\$0.93/sf	\$0.70/sf	\$0.23/sf	\$331	Craftsman Construction Estimator
R-21, Kraft-faced, 24" OC	\$0.86/sf	\$0.68/sf	\$0.18/sf	\$259	Craftsman Construction Estimator
R-21 Cellulose	\$0.55/sf	\$0.50/sf	\$0.05/sf	\$72	Craftsman Construction Estimator
Unfaced batts R-21	\$0.62/sf	\$0.45/sf	\$0.07/sf	\$100	Banker Insulation
R-20.5 Cellulose	\$0.71/sf				Banker Insulation
Avg Local Increase				\$191	
R-13+5 2x4 wall insulation				1440sf	
R-13, Kraft-faced, 16" OC	\$0.48/sf	\$0.48/sf			Craftsman Construction Estimator
R-13, Kraft-faced, 24" OC	\$0.51/sf	\$0.51/sf			Craftsman Construction Estimator
R-13 Batt	\$0.37/sf	\$0.37/sf			Banker Insulation
R-13 Cellulose	\$0.38/sf	\$0.38/sf			Craftsman Construction Estimator
R-5 Insulation Board	\$0.86/sf	\$0.86/sf			Craftsman Construction Estimator
R-49 Ceiling/roof insulation		R-38		2000sf	
R-30 + R-19, Kraft-faced, 24" OC	\$1.68/sf (\$1.00+\$0.68)	\$1.21/sf	\$0.47/sf	\$940	Craftsman Construction Estimator
R-38 + R-11, Kraft-faced, 16" OC	\$1.77/sf (\$1.22+0.55)	\$1.22/sf	\$0.55/sf	\$1,100	Craftsman Construction Estimator
R-30 + R-19	\$1.16/sf	\$0.52/sf	\$0.64/sf	\$680	Banker Insulation
R-49 Cellulose	\$0.72/sf	\$0.52/sf	\$0.20/sf	\$403	Banker Insulation
R-49 Spray Foam	\$4.47/sf	\$3.59/sf	\$0.88/sf	\$1,754	Banker Insulation
Avg Local Increase				\$780^a	
Window fenestration U.32	<U.32	U.35			
3-0 x 5-0, slider		\$278			Local Survey
3-0 x 5-0, casement	\$281		\$3 (\$0.20/sf)	\$43	Local Survey
4-0 x 2-0, awning	\$100	\$83	\$17 (\$2.125/sf)	\$459	Local Survey
5-0 x 4-0, slider	\$162	\$133	\$29 (\$1.45/sf)	\$313	Local Survey
6-0 x 8-0, patio	\$675	\$652	\$23 (\$0.48/sf)	\$104	Local Survey
Avg Local Increase				\$230	
Hot water pipe insulation R-3				(150 pipe ft)	
1/2", R-3.2	\$2.84/lf		\$2.84/lf	\$426	Pex Supply
3/4", R-3.1	\$2.93/lf		\$2.93/lf	\$440	Pex Supply
Avg Local Increase				\$866	
Blower Door Testing/Duct Testing					
E3 Energy, LLC	\$550 - \$750/test		\$550 - \$750/house	\$550 - \$750	E3 Energy, LLC
Avg Local Increase				\$650	
High efficacy lighting					
CFL (estimate does not include use of LED)				\$50	NAHB Analysis
Avg Local Increase				\$50	
Fresh Air Kit					
Fresh Air Kit	\$150			\$150	Local Survey
Avg Local Increase				\$150	
Insulated Attic Hatches					
Gasketing, insulation, etc				\$50	Local Survey
Avg Local Increase				\$50	
Programmable thermostat					
Programmable thermostat	\$25/per house		\$25/per house	\$25	Local Survey
Avg Local Increase				\$25	
Whole house mechanical ventilation					
HRV	\$750 - \$1,000			\$750 - \$1000	Local Survey
Ventilation	\$100			\$100	Local Survey
Avg Local Increase				\$582	
Raised heel trusses					
Western Truss Raised heel trusses	\$4866.12/pkg			\$773.65/pkg	Local Survey
Western Truss Standard trusses		\$4092.47/pkg			
Avg Local Increase				\$774	
			Price increase @ 2,000 sf	\$4,348	

^a : Spray foam not included in avg.