

## Architecture 2030

### 14x Stimulus Plan: Financial Analyses

Energy Efficiency and Conservation Block Grants Allocated \$1,000,000

Program	14x Stimulus	Residential Infrastructure
Suggested Allocation	\$1,000,000	\$1,000,000
Private Spending Generated	\$14,000,000	\$0
Total Jobs Created	218	13
Federal Taxes Generated	\$3,041,220	\$217,230
State and Local Taxes Generated	\$1,001,667	\$71,548

### Refinanced (HERS 70)

Mortgage Amount (incl. Energy Reduction Cost)	\$150,000	\$200,000	\$250,000	\$300,000	\$350,000	\$400,000
Private \$ / Public \$	2	2	2	2	2	2
Monthly Mortgage Payment - 6%, 30 yr	\$899	\$1,199	\$1,499	\$1,799	\$2,098	\$2,398
Cost of Buy-Down (1.0%) <sup>1</sup>	\$6,000	\$8,000	\$10,000	\$12,000	\$14,000	\$16,000
Minimum Energy Reduction Investment (HERS 70)	\$12,000	\$16,000	\$20,000	\$24,000	\$28,000	\$32,000
Monthly Mortgage Payment - 4.0%, 30 yr	\$716	\$955	\$1,194	\$1,432	\$1,671	\$1,910
Monthly Mortgage Savings	\$183	\$244	\$305	\$366	\$427	\$489
Minimum Monthly Energy Savings (below IECC) <sup>2</sup>	\$60	\$60	\$60	\$60	\$60	\$60
<b>Minimum Monthly Savings</b>	<b>\$243</b>	<b>\$304</b>	<b>\$365</b>	<b>\$426</b>	<b>\$487</b>	<b>\$549</b>

<sup>1</sup> The cost to the government for each 1 percent reduction in mortgage interest is 4 percent of the loan principle (Nick Timiraos, Wall Street Journal, Home Builders Make Plea for Federal Aid, <http://online.wsj.com/article/SB122748520112251743.html>, November 24, 2008). The buy-down is from the current market rate which is assumed to be 5.0% for this analysis.

<sup>2</sup> Example Performance Targets and Efficiency Packages Greensburg, Kansas, Dr. Ren Anderson, NREL. Pg. 4.

**New Mortgage (HERS 70)**

<b>Mortgage Amount (incl. Energy Reduction Cost)</b>	<b>\$150,000</b>	<b>\$200,000</b>	<b>\$250,000</b>	<b>\$300,000</b>	<b>\$350,000</b>	<b>\$400,000</b>
Monthly Mortgage Payment - 5%, 30 yr	\$805	\$1,074	\$1,342	\$1,610	\$1,879	\$2,147
Cost of Buy-Down (0.5%) <sup>1</sup>	\$3,000	\$4,000	\$5,000	\$6,000	\$7,000	\$8,000
Monthly Mortgage Payment - 4.5%, 30 yr	\$760	\$1,013	\$1,267	\$1,520	\$1,773	\$2,027
Monthly Mortgage Savings	\$45	\$60	\$75	\$90	\$105	\$121
Minimum Monthly Energy Savings (below IECC) <sup>2</sup>	\$60	\$60	\$60	\$60	\$60	\$60
<b>Minimum Monthly Savings</b>	<b>\$105</b>	<b>\$121</b>	<b>\$136</b>	<b>\$151</b>	<b>\$166</b>	<b>\$181</b>

**New Mortgage (HERS 50)**

<b>Mortgage Amount (incl. Energy Reduction Cost)</b>	<b>\$150,000</b>	<b>\$200,000</b>	<b>\$250,000</b>	<b>\$300,000</b>	<b>\$350,000</b>	<b>\$400,000</b>
Monthly Mortgage Payment - 5%, 30 yr	\$805	\$1,074	\$1,342	\$1,610	\$1,879	\$2,147
Cost of Buy-Down (1.0%) <sup>1</sup>	\$6,000	\$8,000	\$10,000	\$12,000	\$14,000	\$16,000
Monthly Mortgage Payment - 4.0%, 30 yr	\$716	\$955	\$1,194	\$1,432	\$1,671	\$1,910
Monthly Mortgage Savings	\$89	\$119	\$149	\$178	\$208	\$238
Minimum Monthly Energy Savings (below IECC) <sup>2</sup>	\$97	\$97	\$97	\$97	\$97	\$97
<b>Minimum Monthly Savings</b>	<b>\$186</b>	<b>\$216</b>	<b>\$246</b>	<b>\$275</b>	<b>\$305</b>	<b>\$335</b>

<sup>1</sup> The cost to the government for each 1 percent reduction in mortgage interest is 4 percent of the loan principle (Nick Timiraos, Wall Street Journal, Home Builders Make Plea for Federal Aid, <http://online.wsj.com/article/SB122748520112251743.html>, November 24, 2008). The buy-down is from the current market rate which is assumed to be 5.0% for this analysis.

<sup>2</sup> Example Performance Targets and Efficiency Packages Greensburg, Kansas, Dr. Ren Anderson, NREL. Pgs. 4 and 12.

<b>Federal Funding</b>	<b>Funds Allocated<sup>1</sup></b>	<b>% of Funds Allocated<sup>1</sup></b>	<b>Average Cost of Buy-Down</b>	<b>Buy-Down</b>	<b># of Mortgages</b>	<b>% of Homes Affected</b>
Refinanced Mortgages (HERS 70)	\$697,917	70%	\$11,000	1.0%	63	58%
New Home Mortgages (HERS 70)	\$202,083	20%	\$5,500	0.5%	37	34%
New Home Mortgages (HERS 50)	\$100,000	10%	\$11,000	1.0%	9	8%
	<b>\$1,000,000</b>				<b>109</b>	

<sup>1</sup> Assumes 70% of the federal funding is spent on buying down refinanced mortgages (HERS 70), 20% of the federal funding is spent on buying down new home mortgages (HERS 70) and that 10% of the federal funding is spent on buying down new home mortgages (HERS 50).

#### **National Job Creation**

	<b># of Mortgages</b>	<b>Average Private Investment / Mortgage</b>	<b>Total Private Investment</b>	<b>Direct Jobs<sup>1</sup></b>	<b>Indirect Jobs<sup>1</sup></b>	<b>Induced Jobs<sup>1</sup></b>	<b>TOTAL JOBS<sup>2</sup></b>
Refinanced Mortgages (HERS 70)	63	\$22,000	\$1,395,833	3	7	4	14
New Home Mortgages (HERS 70)	37	\$275,000	\$10,104,167	53	65	46	164
New Home Mortgages (HERS 50)	9	\$275,000	\$2,500,000	13	16	12	41
	<b>109</b>	<b>TOTAL PRIVATE INVESTMENT</b>	<b>\$14,000,000</b>	<b>68</b>	<b>88</b>	<b>62</b>	<b>218</b>

#### **National Job Creation Notes**

<b>Job Creation (per million \$)</b>	<b>Direct Jobs<sup>1</sup></b>	<b>Indirect Jobs<sup>1</sup></b>	<b>Induced Jobs<sup>1</sup></b>	<b>TOTAL JOBS</b>
Residential Renovation	1.8	5.2	3.0	10.0
New Residential	5.2	6.4	4.6	16.2

<sup>1</sup> Political Economy Research Institute (PERI). Indirect jobs are jobs created in industries such as transportation, administrative services, etc. Induced jobs are jobs that are created when workers spend their earnings on retail goods, fuel, food, etc.

<sup>2</sup> National job estimates do not include indirect and induced jobs that may be created by other local governments implementing similar plans, or jobs from consumer spending.

## Federal, State and Local Taxes

### Federal

	# of Mortgages	Average Private Investment / Mortgage	Total Private Investment	Income taxes paid by employees <sup>1, 2</sup>	Income taxes paid by businesses <sup>1, 2</sup>	Social security taxes <sup>1, 2</sup>	Taxes on production & imports <sup>1, 2</sup>	TOTAL FEDERAL TAX
Refinanced Mortgages (HERS 70)	63	\$22,000	\$1,395,833	\$68,526	\$116,748	\$106,439	\$11,504	\$303,217
New Home Mortgages (HERS 70)	37	\$275,000	\$10,104,167	\$496,045	\$845,114	\$770,491	\$83,277	\$2,194,928
New Home Mortgages (HERS 50)	9	\$275,000	\$2,500,000	\$122,733	\$209,100	\$190,637	\$20,605	\$543,075
	109	<b>TOTAL PRIVATE INVESTMENT</b>	<b>\$14,000,000</b>	\$687,304	\$1,170,963	\$1,067,567	\$115,386	<b>\$3,041,220</b>

### State and Local

	# of Mortgages	Average Private Investment / Mortgage	Total Private Investment	Sales taxes <sup>1, 2</sup>	Income taxes paid by employees <sup>1, 2</sup>	Income taxes paid by businesses <sup>1, 2</sup>	Permit, hook-up, impact, etc. fees <sup>1, 2</sup>	TOTAL STATE AND LOCAL TAX
Refinanced Mortgages (HERS 70)	63	\$22,000	\$1,395,833	\$22,092	\$18,070	\$25,370	\$34,336	\$99,869
New Home Mortgages (HERS 70)	37	\$275,000	\$10,104,167	\$159,922	\$130,803	\$183,650	\$248,555	\$722,930
New Home Mortgages (HERS 50)	9	\$275,000	\$2,500,000	\$39,568	\$32,364	\$45,439	\$61,498	\$178,869
	109	<b>TOTAL PRIVATE INVESTMENT</b>	<b>\$14,000,000</b>	\$221,583	\$181,237	\$254,459	\$344,389	<b>\$1,001,667</b>

### Federal, State and Local Taxes Notes

NAHB Table <sup>1</sup>	New Single Family	New Single Family - 2030 Adjusted <sup>2</sup>	Renovated Single Family - 2030 Adjusted <sup>2</sup>
Federal	\$61,886	\$59,738	\$4,779
Income taxes paid by employees	\$13,986	\$13,501	\$1,080
Income taxes paid by businesses	\$23,828	\$23,001	\$1,840
Social security taxes	\$21,724	\$20,970	\$1,678
Taxes on production & imports	\$2,348	\$2,267	\$181
State and local	\$20,383	\$19,676	\$1,574
Sales taxes	\$4,509	\$4,353	\$348
Income taxes paid by employees	\$3,688	\$3,560	\$285
Income taxes paid by businesses	\$5,178	\$4,998	\$400
Permit, hook-up, impact, etc. fees	\$7,008	\$6,765	\$541
Average Single Family Home Price	NAHB New Home <sup>1</sup> \$284,887	2030 New Home \$275,000	Conversion Factor 0.97
			2030 Renovation \$22,000
			Conversion Factor 0.08

<sup>1</sup> Fiscal Impacts of Building an Average Housing Unit on the U.S. Economy in 2005. Source: NAHB estimates, based primarily on data from the U.S. Bureau of Economic Analysis, <http://www.nahb.org/generic.aspx?genericContentID=44096>.

<sup>2</sup> Assumes a direct relationship between money spent and tax revenue.

**Local Estimates**

	# of Mortgages	Average Private Investment / Mortgage	Total Private Investment	Direct and Indirect Local Jobs <sup>1, 2</sup>	Induced Local Jobs <sup>1, 2</sup>	Ongoing Local Jobs <sup>1, 2</sup>	TOTAL LOCAL JOBS <sup>3</sup>
Refinanced Mortgages (HERS 70)	63	\$22,000	\$1,395,833	4	2	0	7
New Home Mortgages (HERS 70)	37	\$275,000	\$10,104,167	32	15	18	66
New Home Mortgages (HERS 50)	9	\$275,000	\$2,500,000	8	4	5	16
	109	<b>TOTAL PRIVATE INVESTMENT</b>	<b>\$14,000,000</b>	44	21	23	<b>88</b>

	# of Mortgages	Average Private Investment / Mortgage	Total Private Investment	Local Taxes from Direct and Indirect Jobs <sup>1, 4</sup>	Local Taxes from Induced Jobs <sup>1, 4</sup>	Local Taxes from Ongoing Jobs <sup>1, 4</sup>	TOTAL LOCAL TAXES
Refinanced Mortgages (HERS 70)	63	\$22,000	\$1,395,833	\$24,890	\$9,897	\$0	\$34,787
New Home Mortgages (HERS 70)	37	\$275,000	\$10,104,167	\$180,174	\$71,644	\$163,504	\$415,322
New Home Mortgages (HERS 50)	9	\$275,000	\$2,500,000	\$44,579	\$17,726	\$40,455	\$102,760
	109	<b>TOTAL PRIVATE INVESTMENT</b>	<b>\$14,000,000</b>	\$249,643	\$99,267	\$203,959	<b>\$552,869</b>

**Local Estimates Notes**

100 New Single Family Homes <sup>1</sup>	Direct and Indirect Impact of Construction Activity	Induced (Ripple) Effect of Spending the Income and Taxes	Ongoing, Annual Effect that Occurs When New Homes are Occupied	Per New Single Family Home	Direct and Indirect Impact of Construction Activity	Induced (Ripple) Effect of Spending the Income and Taxes	Ongoing, Annual Effect that Occurs When New Homes are Occupied
Local Taxes	\$508,000	\$202,000	\$461,000	Local Taxes	\$5,080	\$2,020	\$4,610
Local Jobs Supported	90	43	52	Local Jobs Supported	0.90	0.43	0.52
Per New Single Family Home - 2030 Adjusted <sup>2, 4</sup>	Direct and Indirect Impact of Construction Activity	Induced (Ripple) Effect of Spending the Income and Taxes	Ongoing, Annual Effect that Occurs When New Homes are Occupied	Per Renovated Single Family Home - 2030 Adjusted <sup>2, 4</sup>	Direct and Indirect Impact of Construction Activity	Induced (Ripple) Effect of Spending the Income and Taxes	Ongoing, Annual Effect that Occurs When New Homes are Occupied
Local Taxes	\$4,904	\$1,950	\$4,450	Local Taxes	\$392	\$156	\$0
Local Jobs Supported	0.87	0.42	0.50	Local Jobs Supported	0.07	0.03	0.00
Average Single Family Home Price	NAHB New Home <sup>1</sup>	2030 New Home	Conversion Factor	2030 Renovation	Conversion Factor		
	\$284,887	\$275,000	0.97	\$22,000	0.08		

<sup>1</sup> The Local Impact of Home Building in a Typical Metropolitan Area: Income, Jobs, and Taxes generated, National Association of Home Builders, Prepared by the Housing Policy Department, October 2005, [http://www.nahb.org/fileUpload\\_details.aspx?contentTypeID=3&contentID=35601&subContentID=28002](http://www.nahb.org/fileUpload_details.aspx?contentTypeID=3&contentID=35601&subContentID=28002).

<sup>2</sup> Assumes a direct relationship between money spent and job creation.

<sup>3</sup> Local job estimates do not include additional national jobs that may be located in the implementing governments jurisdiction; or indirect and induced jobs that may be created by other local governments implementing similar plans; or jobs from consumer spending.

<sup>4</sup> Assumes a direct relationship between money spent and tax revenue.