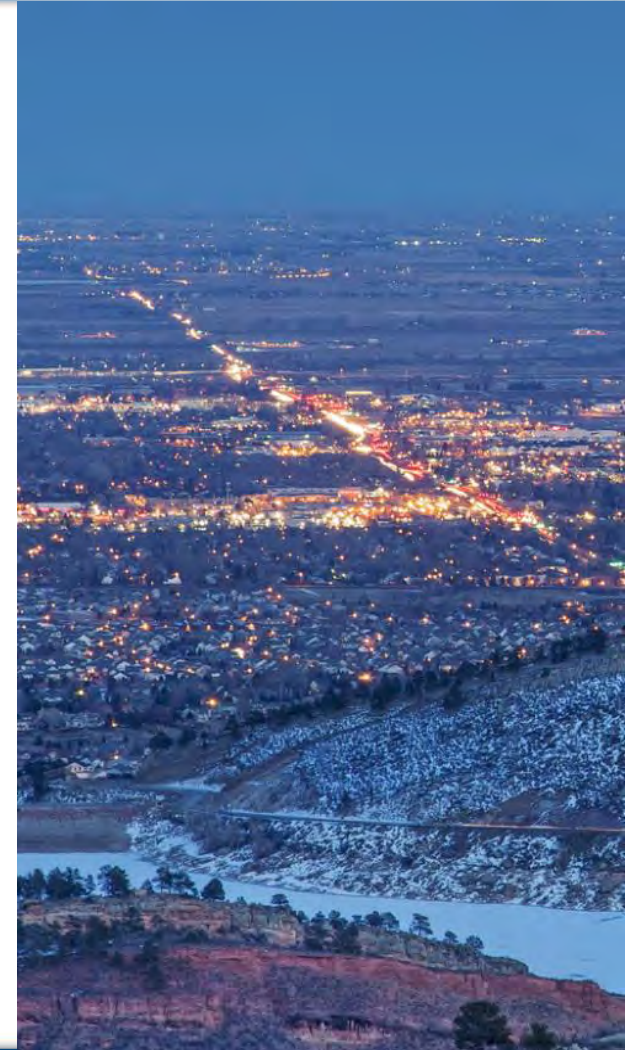




Brian Tholl

Fort Collins Utilities

- **Municipal utility**
 - Electric, water, waste & storm water, financing and broadband
 - 55 sq. mile area: 99% underground
- **80,000 customers**
 - ~ 38,000 eligible for EW-Homes
- **Resource Conservation portfolio**
 - 20 energy and water programs
 - 250+ incentivized measures



- **Energy, water, and carbon goals**
 - **Climate Action Plan**
 - First adopted almost 20 years ago
 - 80% reduction by 2030, carbon neutral by 2050
 - **Energy Policy**
 - 2.5% annual savings from efficiency by 2020

- Regional program since 2014
- Administered by Platte River Power Authority
 - Joint Action Agency / G & T



Estes Park | Fort Collins | Longmont | Loveland

- **Complexity**
- **Time**
- **Confidence**
- **Money**



Streamline path



Home Performance Assessment

- 2-3 hour evaluation of your home by a Home Performance Expert
 - 30-60 minute presentation of results and project package options
 - Explanation of HELP* (Home Efficiency Loan Program) financing option offered by Fort Collins Utilities
 - Project process and time-line
- * Must be financially pre-approved before scheduling project.

Questions? Please Contact:

Efficiency Works Neighborhoods Team
 (970) 413-6020
 Neighborhoods@efficiencyworks.CO

Complexity - Auditor Packages

- **Unbiased package options:** customizable
 - **Good:** Envelope impact
 - **Better:** Good + HVAC or windows
 - **Best:** Good + Better, and/or solar PV
- **Monthly cash flow emphasis**
- **Standardized pricing**

Joe & Jane Homeowner
123 Main Street
Fort Collins CO 80526
8/2/2016

YOUR ENERGY EFFICIENCY PACKAGES

Following are recommendations for improving the safety, comfort, indoor air quality and energy efficiency of your home. When considering energy efficiency, it is important to think of your home as one large interactive system. Each part works individually but also in concert with the other parts of your home. This is known as the Whole House Approach. In order to maximize your benefits, your investment, as well as your energy savings, your home energy advisor has grouped measures into three or four packages.

Measures are based on your Energy Specialist's evaluation:

Description	Measures are based on your Energy Specialist's evaluation:			\$11,404	\$13,154	\$27,644
	GOOD	BETTER	BEST			
Attic Air Sealing	✓	✓	✓			
Insulate Attic	✓	✓	✓			
Seal & Insulate Knee Walls	✓	✓	✓			
Seal & Insulate Cantilevered Floors	✓	✓	✓			
Seal Garage to House Air Leaks	✓	✓	✓			
Air Seal & Insulate Crawl Space Walls	✓	✓	✓			
Duct Sealing	✓	✓	✓			
Whole House Fan, AirScape 2.5e		✓	✓			
Rooftop Solar PV			✓			

Loan Term (Years):	20	GOOD	BETTER	BEST
Estimated Monthly Payment:	\$	69	\$ 80	\$ 168
Estimated Monthly Savings:	\$	10	\$ 10	\$ 72
Estimated Monthly Net Payment:	\$	59	\$ 70	\$ 96

*Loan payment estimates based on loan through the Home Efficiency Loan Program (H.E.L.P). Loan amount maximum is \$25,000 in this program. Packages with totals over \$25,000 can be partially financed through the program. Loan terms subject to change.

Confidence – Standardized pricing

Efficiency Works Neighborhoods Installation Standards & Pricing				
General Notes:				
<p>These installation standards are based on Efficiency Works - Homes (Final Installation Standards V3 Effective 7/15/15) That means that you will need to meet the Homes Final Installation Standards PLUS any additional requirements in the EW-Neighborhoods Installation Standards.</p> <p>While the EW-Homes Standards often allow multiple pathways for compliance - this program will typically have a single pathway approach only.</p>				
ENERGY EFFICIENCY MEASURE	INSTALLATION STANDARDS	REQUIRED TESTS	NOTES	STANDARDIZED PRICE
Full Vacuuming of the Attic	This means that you shall vacuum the entire attic floor to reveal all of the areas that need to be sealed.	Photo-Documentation Required	In the spirit of sustainability vacuumed insulation should be repurposed as much as possible. This should only be done if the insulation is relatively clean and not full of organic pollutants.	\$0.75/SF
Attic Prep and Air Seal	See EW-Homes Installation Standards V3 ADD REQUIREMENT TO SEAL EXTERIOR TOP PLATES. ADD ATTIC HATCH MUST BE OPERABLE WITH DURABLE INSULATION DAM	Combustion Safety Test required record results on Appendix F Blower door test required prior to air sealing and after insulating in order to measure house tightness improvement. Photo-Documentation Required	When the ACH50 is 8 or greater we expect a 50% reduction in infiltration. When ACH50 is less than 4: identified bypasses must be sealed - insulation removal method prior to airsealing at the contractors discretion.	\$0.40/SF
Air Sealing and Insulating External Top Plates	The exterior top plate shall be sealed (when accessible) by creating an insulation dam with a fiberglass batt shoved just past the top plate. Closed-cell spray foam is then applied to not only coat the entire top plate but to also fill the space between the top plate and baffle or roof deck - 3-5 inches of foam.	Combustion Safety Test required record results on Appendix F Blower door test required prior to air sealing and after insulating in order to measure house tightness improvement. Photo-Documentation Required	This is expected to be accomplished on most homes. Scissor trusses will be possible exception.	\$5.00/LF
Air Sealing Non-IC Rated Can Lights	See EW-Homes Installation Standards V3	Combustion Safety Test required record results on Appendix F Blower door test required prior to air sealing and after insulating in order to measure house tightness improvement. Photo-Documentation Required	This is a real opportunity to replace Non-IC rated recessed light cans with modern air tight ICT cans.	\$24.00/Each

Confidence - Quality Assurance

QA is expensive: used photo-documentation of all work before and after

Verification of important areas in 100% of program homes, at low cost

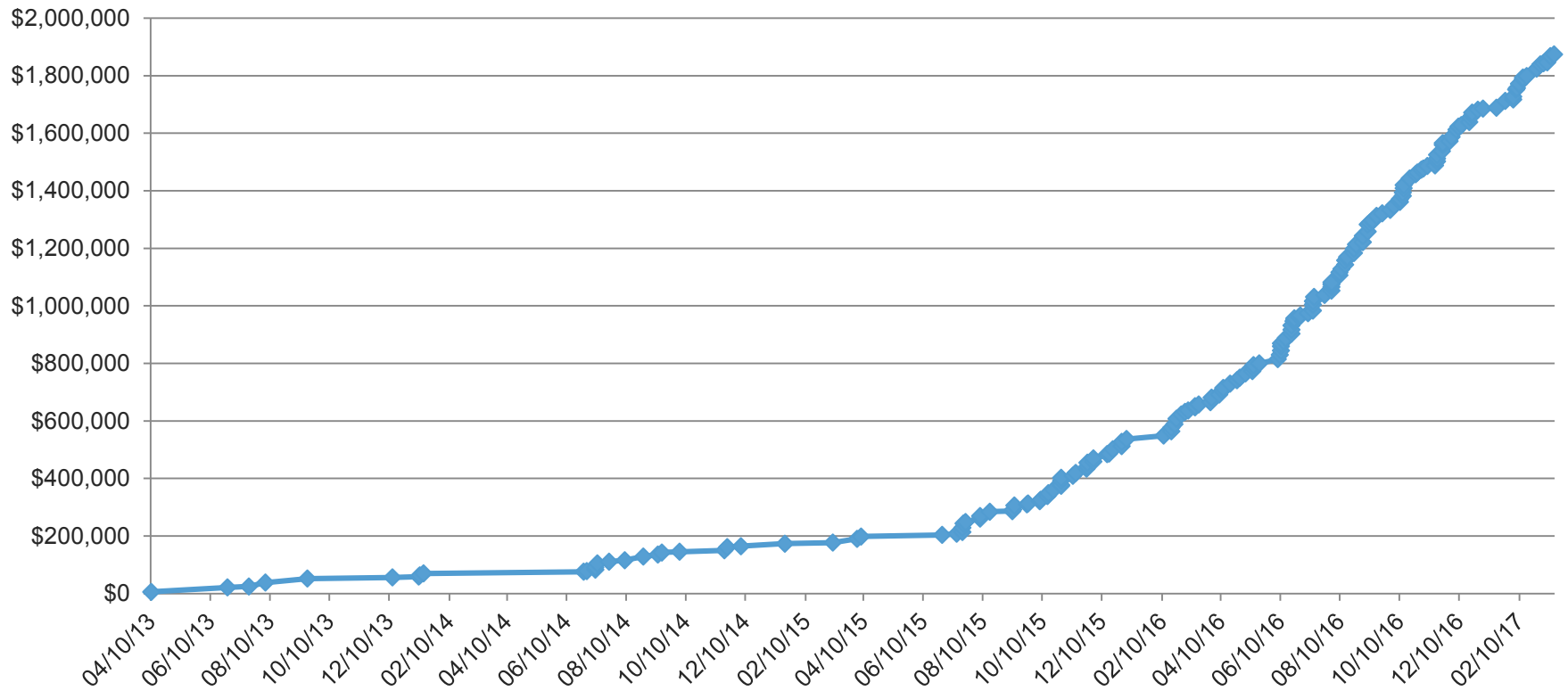
Contractor performance is significantly better: now have their own internal QA

Efficiency Works Neighborhoods Quality Assurance Photo Documentation Guide			
General Notes:			
<p>This photo documentation guide is to establish a great paper trail of the before and after on our more important details in the program. This is a piece of the EW-N program and are required on ALL jobs. While this may feel like a lot of extra work initially - we firmly believe that this will improve your internal quality control which will help the overall program.</p> <p>Please use as high a resolution setting that your camera will allow so we end up with good photos.</p>			
EXPECTED PHOTOS	EXAMPLE	EXAMPLE	EXAMPLE
Clean Attic Floor - Top Plates - Bypasses - Large Holes			
Sealed top plates- Exterior and Interior, electrical/plumbing/HV AC penetrations, chases, rulers, dams, etc.			
Unsealed Can light - Sealed Can Light			

- First 2 years low utilization: not simple or attractive
 - Complex application, contractors not promoting, market rates
- Revised qualifications and rates – 2015
 - 640 FICO, 6 months good bill payment
 - 2.5% interest rate, up to 20 year term
- New for 2018 – Rebranded EPIC loans
 - Revolving loan fund established
 - Includes various capital sources for low rates

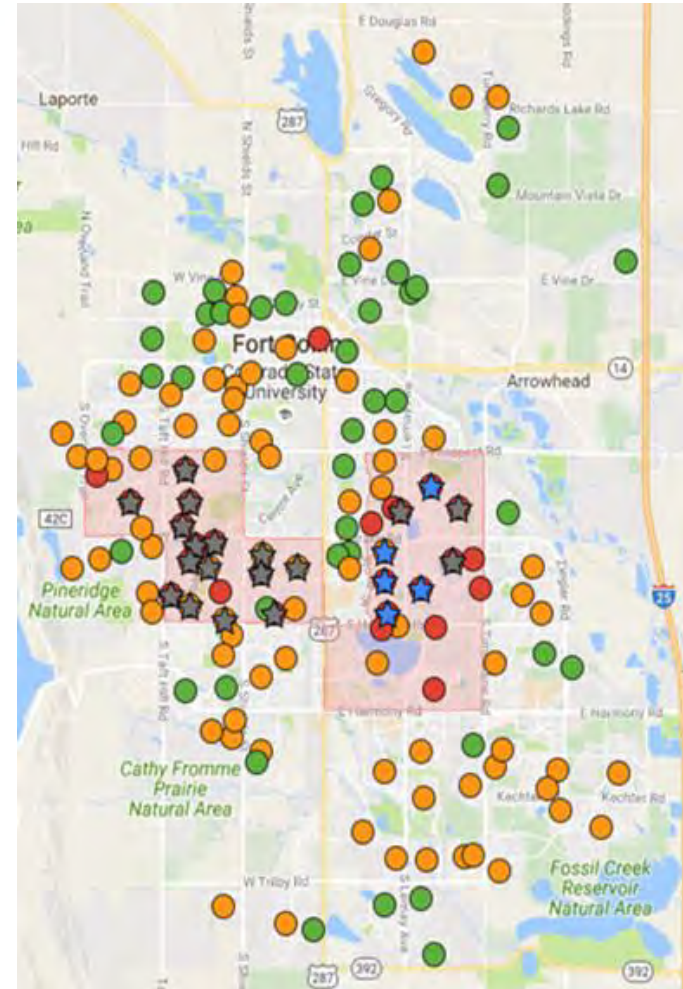
After Program Changes, Loan Use Skyrockets

Fort Collins Cumulative Loan Value



Neighborhood targeting

- Propensity to act & save
- Scored neighborhoods
 - Median household income & education
 - Past participation data
 - Year built



Messaging: comfort, health, and savings

Tactics with multiple contacts

- Letter / brochure
- Follow-up postcard after two weeks
- Yard signs with brochure holders
- Neighborhood open house
- Social Media

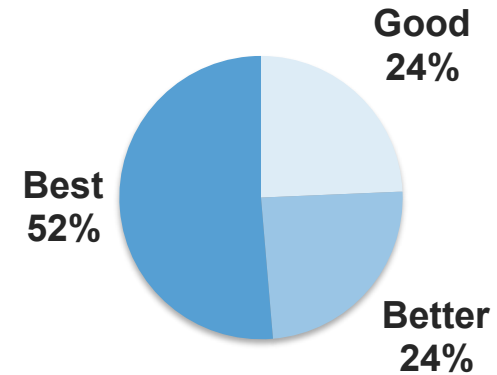
Neighborhood approach

- Localized, focused marketing
- Leveraging word of mouth

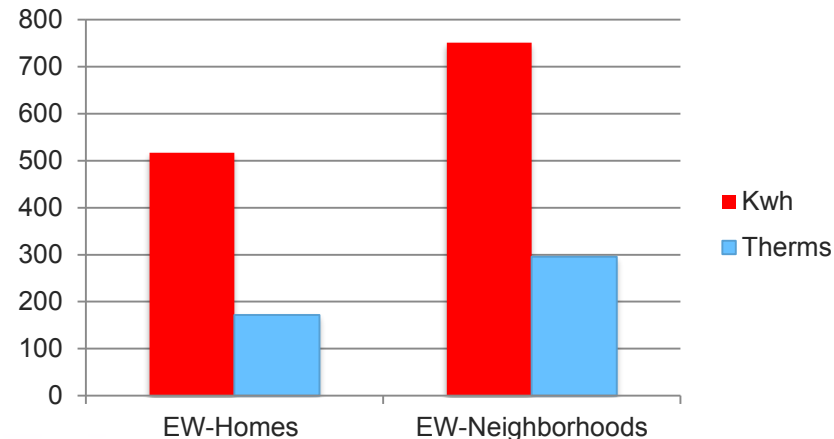


- **Reaching more customers**
 - 2x as many customers enrolled
 - 77% enrolled once contacted
 - 44% conversion rate to a package
- **Greater savings, same cost**
 - 50% greater kWh savings
 - 70% greater Therm savings
 - 60% greater GHG savings
- **64% of projects used on-bill financing**

Package Selection



Energy Savings



THIS HOME'S SCORE 7 OUT OF 10

THIS HOME'S ESTIMATED ENERGY COSTS

\$1,440

PER YEAR

HOME PROFILE

LOCATION
728 Cherry St
Fort Collins, CO

YEAR BUILT
1904

BUILDING SIZE
945 sq ft

NUMBER OF BEDROOMS
2

ASSESSMENT

ASSESSMENT DATE
12/22/2016

PROJECT DATE
1/15/2017

SCORE EXPIRATION DATE
1/15/2025

ASSESSOR
Kim DeVoe

PHONE
970-416-4325

EMAIL
kDeVoe@fcgov.com

BPI BA LICENSE #
xxxxxxx

Home Energy Score

ASSESSMENT: Official | Jan. 15, 2017 | ID# 313567

The U.S. Department of Energy's Home Energy Score assesses the energy efficiency of a home based on its structure and heating, cooling, and hot water systems. Learn more [here](#).

HOW MUCH ENERGY IS THIS HOME LIKELY TO USE?

Fort Collins Utilities Electricity	5,326 kWh	\$695
Xcel Energy Natural Gas	889 therms	\$745
TOTAL ENERGY COSTS PER SQ FT		\$1,440/yr

How much renewable energy does this home generate?

NA kWh/yr

Pre and Post-Project Energy Consumption

Natural Gas

You are saving 172 therms per year!

Electricity

You are saving 1,123 kWh per year!

Usage weather normalized for comparison.

Score at time of assessment

3

Score with improvements

7

Estimated energy cost savings

\$882

PER YEAR

Estimated carbon reduction with improvements

57%

PER YEAR

High Performing Features

Improvements listed below were verified through an Efficiency Assessment provided by the City of Fort Collins Utilities. The objective of the Energy Performance Improvement Certificate (EPIC) is to standardize the communication of high performance features recognized by Real Estate Professionals when assigning value to a residential property.

Actions	Date Completed
Structural Envelope	
Increased ceiling insulation to 2018 code	1/15/2018
Reduced duct sealing leakage to a maximum of 10% of total airflow	1/15/2018
Increased wall insulation to above 2018 code	1/15/2018
Heating, Ventilation, and Air Conditioning (HVAC)	
Upgraded to ENERGY STAR water heater	1/10/2018
Products	
Installed Energy Star Clothes Dryer	1/10/2018
Installed Energy Star Clothes Washer	1/10/2018
Smart, programmable thermostat	Pre-existing*
Energy Star Refrigerator	Pre-existing*

*Pre-existing energy efficiency features have been confirmed as present, but have not been tested for performance.

When you are ready to sell your energy efficient home... highlight the benefits of High Performance Features!

- Make an energy efficiency upgrade to your home!
- Maintain documentation from service providers that proves the energy efficiency of your home, including your EPIC certificate and Home Efficiency Assessment.
- Find a local Real Estate Professional with a green designation who can help market your home's high performance features. Check out efficiencyworks.org/resources/find-a-service-provider
- Find a local Appraiser who is qualified to complete the Appraisal Institute's Residential Green and Energy Efficient Addendum. Check out appraisalinstitute.org/education/education-resources/green-building-resources

Additional Energy Scores and Certifications

HERS	PEARL	LEED	ENERGY STAR
19 out of 150 <small>lower score = less energy</small>	Gold	NA	NA

To learn more visit efficiencyworks.org/homes

- >40% housing stock are rentals**
- Targeting landlords for participation**
- Landlord using OBF for upgrades**
 - At least 1 service needs to be w/landlord**
- Program tweaks needed**

BLOOMBERG PHILANTHROPIES

2018 Mayors Challenge

THE WINNERS HAVE BEEN ANNOUNCED!

Thank you! Enjoy Santa Fe!

Brian Tholl

Energy Services Supervisor

Fort Collins Utilities

btholl@fcgov.com

Direct: 970-416-4326

Cell: 303-579-6659