



AUGUST 21-23, 2018 • CLEVELAND, OHIO

Best Behavior: Strategies to Successfully Engage Occupants

Thursday, August 23rd
10:30 AM – 12:00 PM



Energy
Exchange

Better Buildings[®]
SUMMIT

Panelists:

- Reuven Sussman, ACEEE
- Anand Natarajan, City of Cleveland
- Greg Hopkins, Rocky Mountain Institute

Designing a Behavior Change Program for Building Occupants

Reuven Sussman



Dr. Reuven Sussman

Sr. Manager, Behavior and Human Dimensions Program
American Council for an Energy-Efficient Economy

rsussman@aceee.org – 202-507-4746

Co-Chair of Behavior, Energy and Climate Change conference (BECC)

Changing Behavior: Customizing

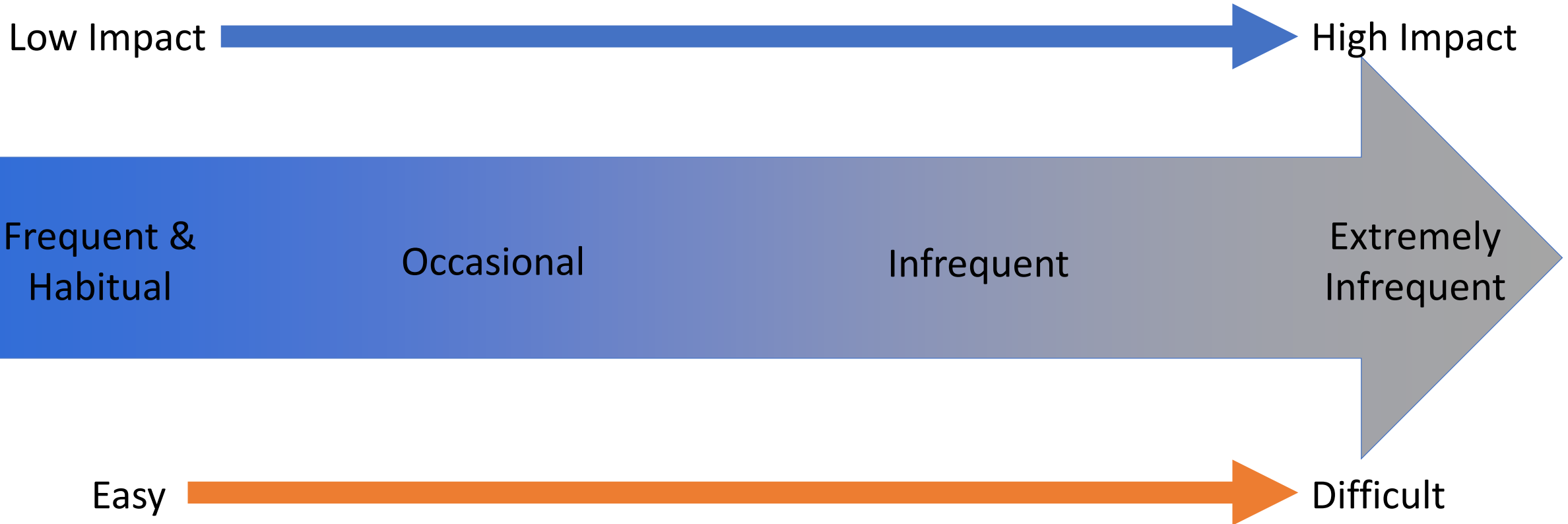


Customizing a Behavior Change Intervention



- (1) Identify **specific** behavior to change
- (2) Identify **barriers** and **benefits** of change within the target population
- (3) Select behavior change strategies
- (4) Implement the program
- (5) Evaluate the program

1) Identifying a Behavior



Example: *Energy Connect* at Atrium Health



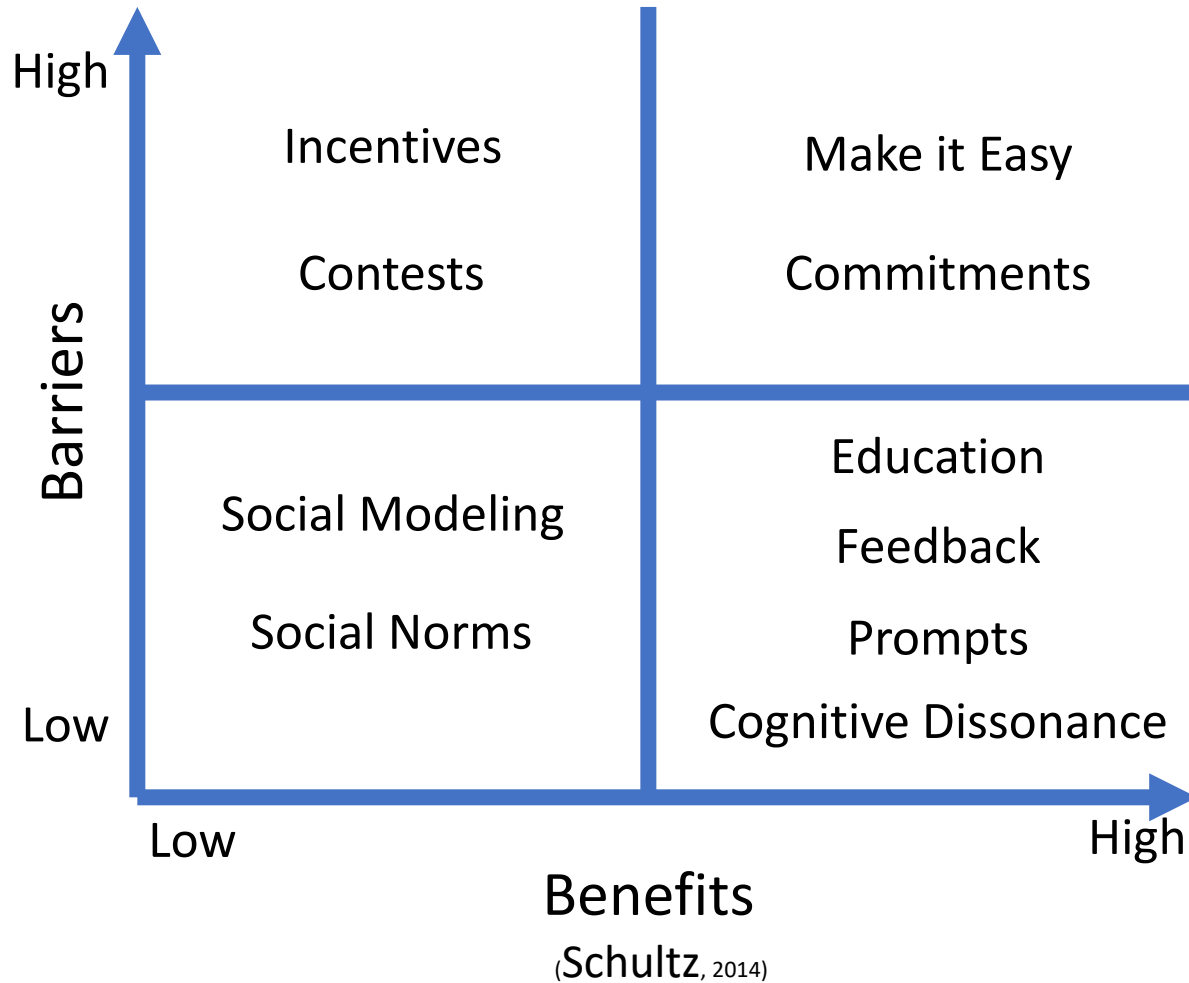
2) Identify Barriers and Benefits



Example: City of Fort Collins Home Upgrades

- Identify barriers and benefits:
 - Focus groups, segmentation studies, customer surveys
- Barriers examples:
 - Complex, technical decisions about scope of work
 - Lack of time to meet with and select contractors
 - Lack of trust in contractor proposals
- Benefits examples:
 - Improved health outcomes
 - Higher level of comfort

3) Selecting Strategies: Barriers/Benefits

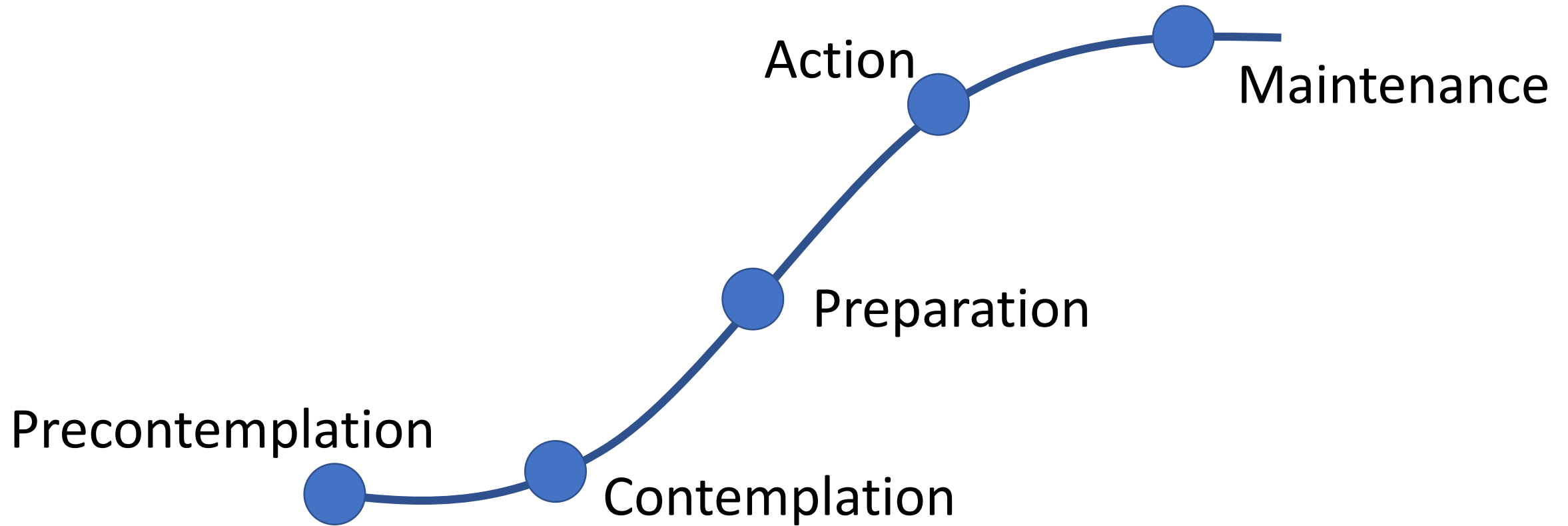


Also:

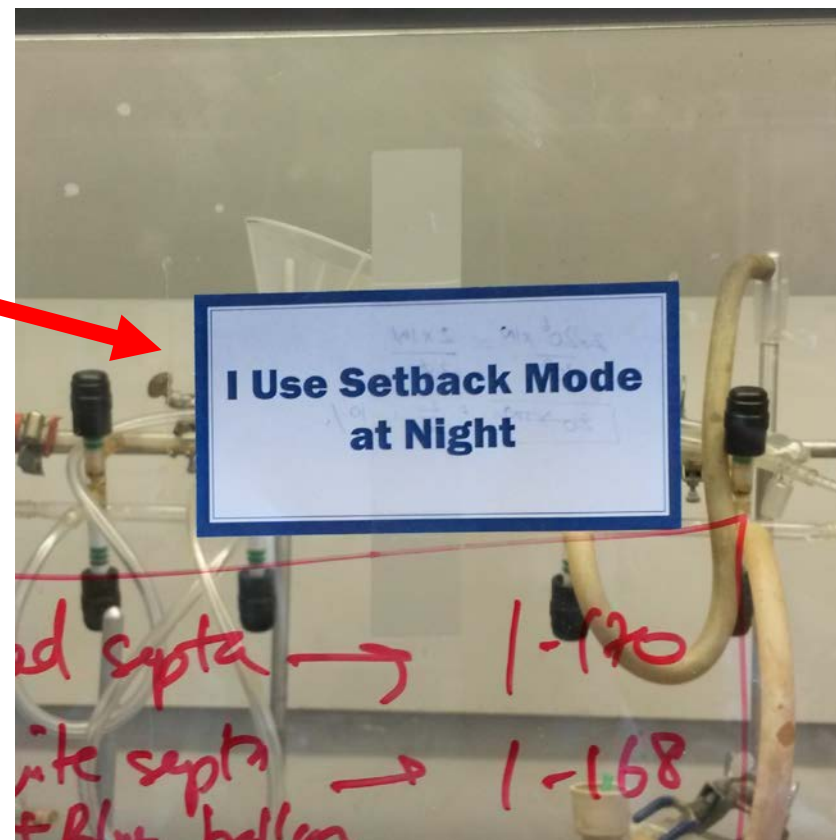
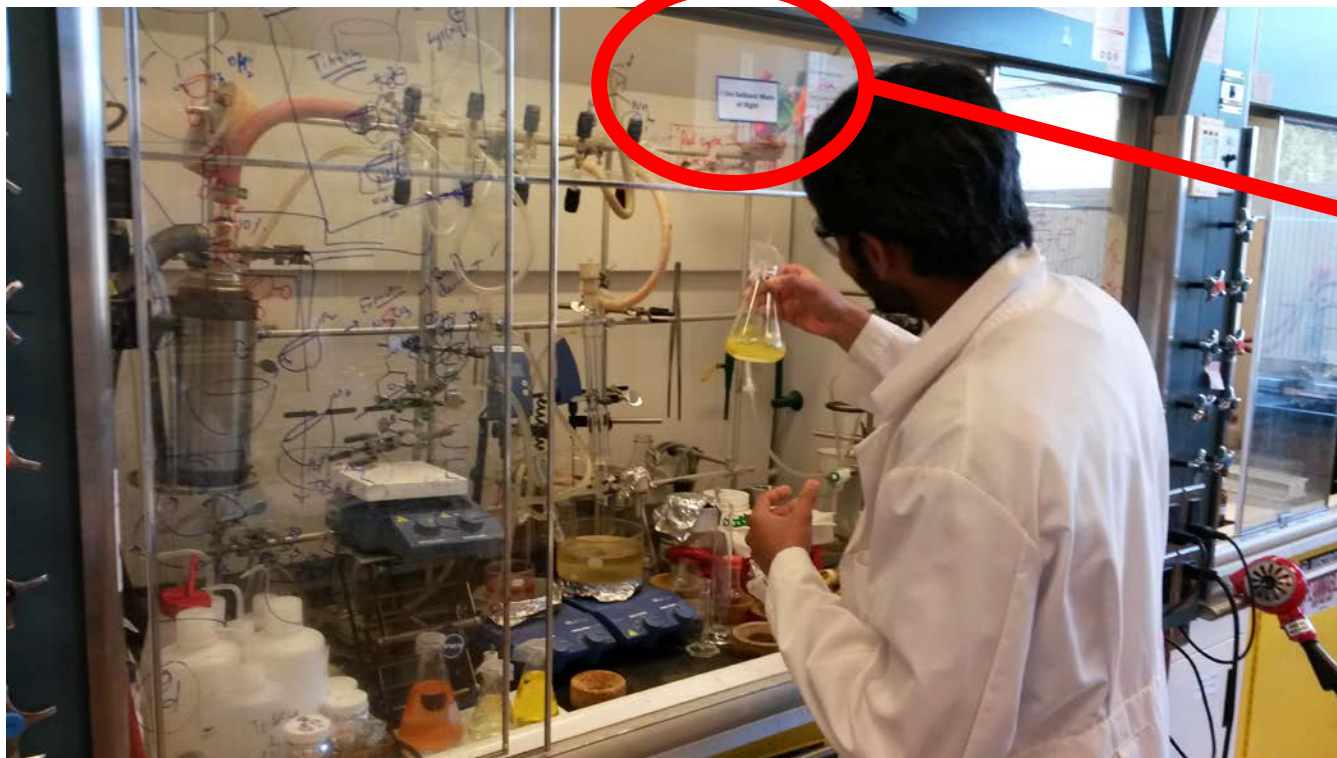
Punishment (laws, taxes, etc.)

Changing defaults
or physical structure

3) Selecting Strategies: Stages of Change



3-4) Implement and Evaluate (Example 1)



Implement and Evaluate (Example 2)



- Cool Choices at Fond du Lac and Inpro Corporation
- Points-based intra-organization competition
- Team-building, norm setting, habit changing
- Increased participation in other programs

Persuasive Research Designs

■ **Key Factors:**

- **Control groups** must be as similar to intervention groups as possible to rule out alternative explanations
- **Outcome measure** must be closely related to target behavior

1. Randomized control trial
2. Quasi-experimental
 - Randomized Encouragement
 - Recruit-and-delay/deny
3. Matched controls
4. Pre-post or historical data



Summary and Conclusions

Take away points

- Be targeted and specific
- Prepare and test
- Evaluate systematically

behavior, energy & climate change
becc

OCTOBER 7-10, 2018 ● WASHINGTON, DC



Photo credit: Deceptive Media
<http://www.deceptivemedia.co.uk/photo/blog/keyhaven-seascape-1.html>

Thank you!



Best Behavior: Strategies to Successfully Engage Occupants

Cleveland – Residential Market Based Energy Efficiency Programs

Better Buildings Summit - August 23, 2018

Anand Natarajan

Energy Manager, Mayor's Office of Sustainability, City of Cleveland

Sustainable Cleveland 2019

Leadership Structure

- Founded by Mayor Jackson
- Guided by the Steering Committee
- Administered by Mayor's Office of Sustainability
- Powered by Citizens
- Funded by foundation, corporate, and individual support

Get Involved...

1. at Home,
2. at Work, and
3. in your Community



2018 SUSTAINABLE CLEVELAND SUMMIT



Summit 2018

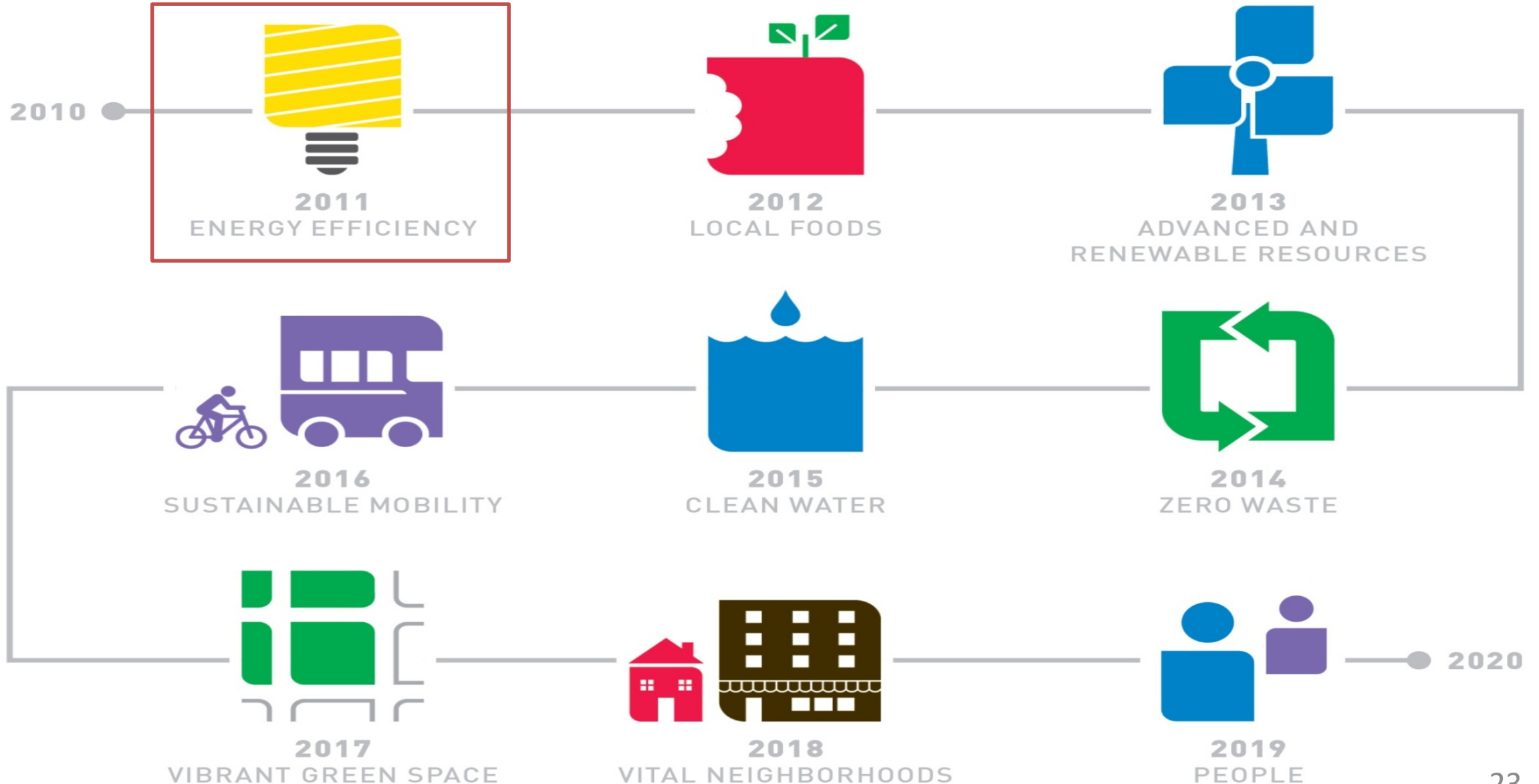
Sept. 20-21



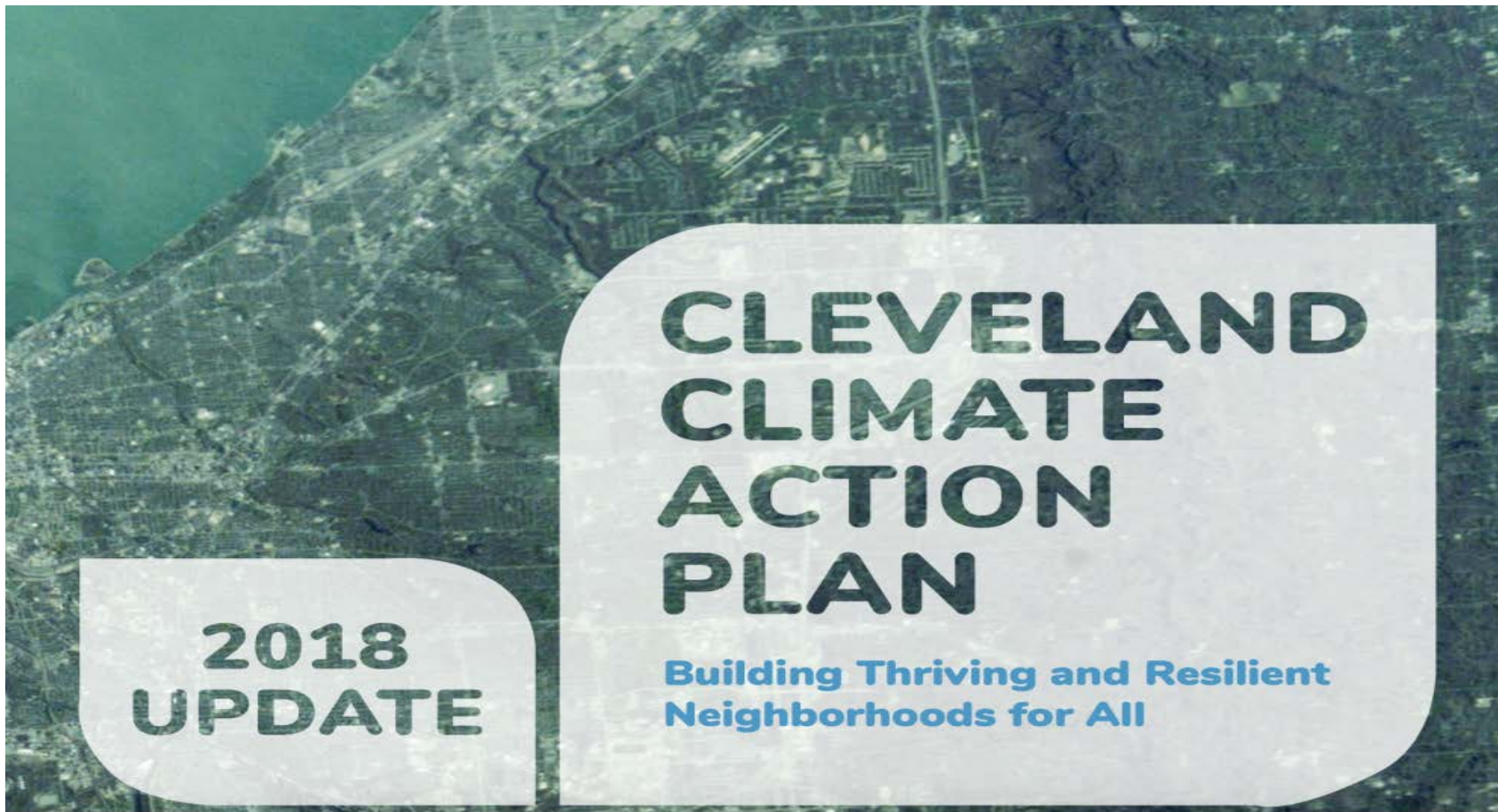
2009 – 1st Annual Summit



Sustainable Cleveland Celebration Years



2018 Cleveland Climate Action Plan Update



Energy Efficiency &
Green Building



Clean
Energy



Sustainable
Transportation



Clean Water &
Vibrant Green Space



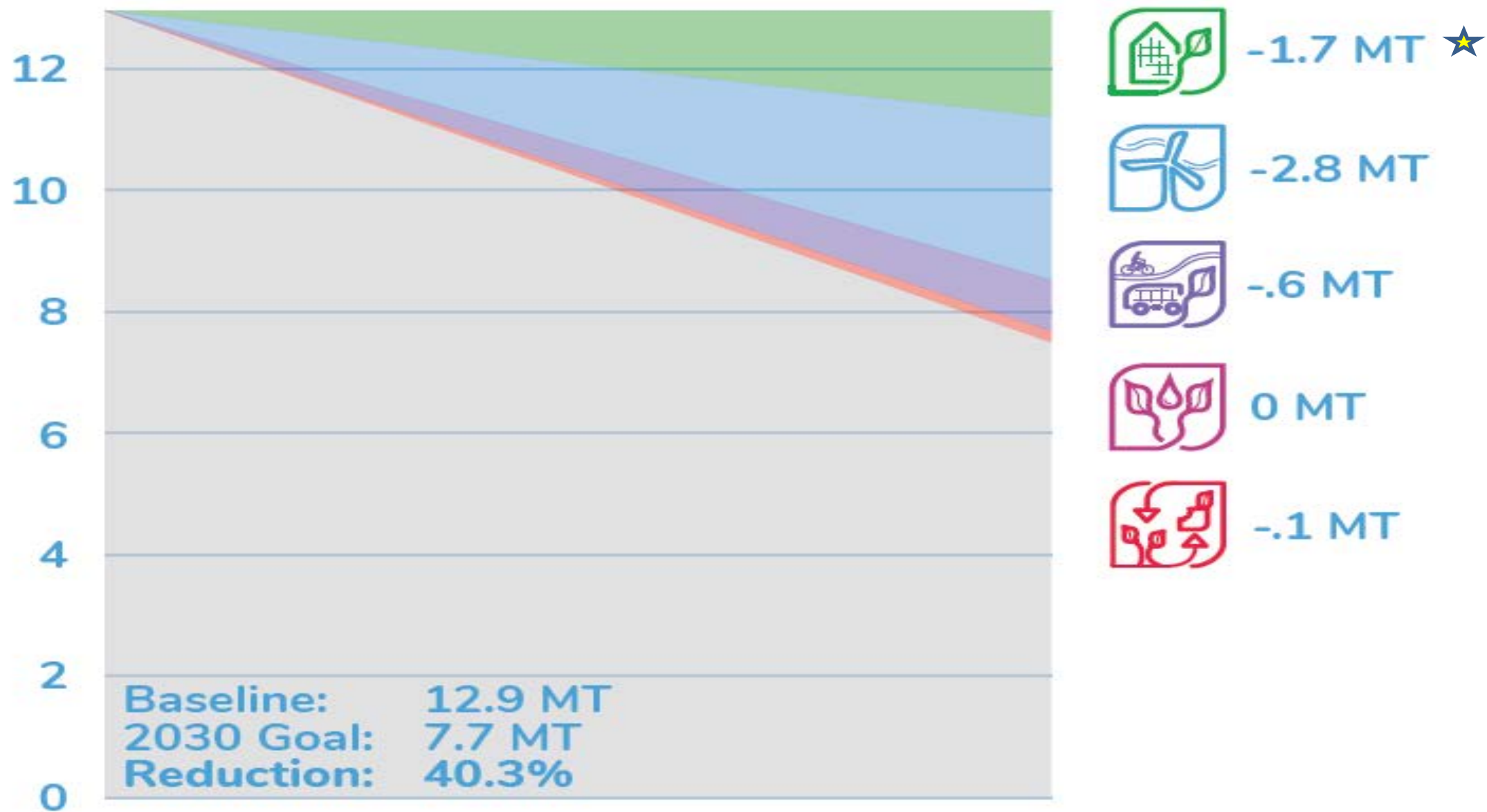
More Local Food,
Less Waste



Cross-Cutting
Priorities

Process for Achieving Our 2030 Goals

GHG Emissions (MT of CO₂e) in Millions





GOALS

- By 2030, reduce **residential and commercial energy use 50%** and industrial use by 30% saving Cleveland households and businesses \$170 million annually from utility savings.
- All large commercial and industrial buildings are tracking and managing their energy use by 2023

OBJECTIVES

1. **Make more homes affordable, comfortable, healthy, and energy efficient**
2. Prioritize energy efficiency in small and mid-size businesses
3. Support community hubs to be more efficient and resilient
4. Promote new construction and major renovations that meet high green building standards

Cleveland Energy\$aver®



[About Us](#) | [Our Product](#) | [Our Process](#) | [Saving Money](#) | [Our Blog](#) | [Contact Us](#)

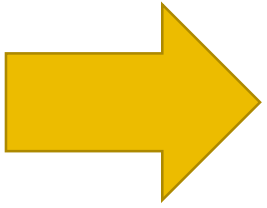
Cleveland, you should be saving \$400 or more each year on your energy bills.


Sign up now for a FREE, 1-hour in-home energy consultation or call 1-855-343-7884.


<input type="text" value="First Name"/>	<input type="text" value="Last Name"/>
<input type="text" value="Email"/>	<input type="text" value="Phone"/>
<input type="text" value="Zip"/>	My electric utility is* <input type="text" value="Select One*"/>
<input type="text" value=""/>	<input type="text" value="Promo Code"/>

Submit

* These fields are required.
Send me a copy ☐







PREPARED FOR:
Janet Smith
1608 Marl Ave.
Cleveland, OH 44109

PREPARED BY:
Michael Thompson
Building Performance Expert
Phone: 216-235-7623
Email: blockthompson1@yahoo.com

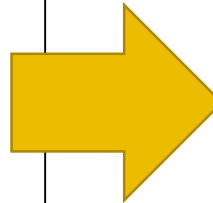
ENERGY AUDIT & HOME PERFORMANCE
ASSESSMENT

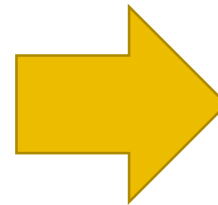
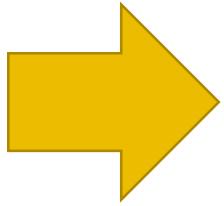
March 20, 2012

2999 Payne Ave., Suite 116
Cleveland, Ohio 44114

www.clevelandenergysaver.com

Phone: 216-672-3535
Fax: 216-672-3514





Cleveland EnergySaver® Program 2.0: Empower's Implementation

Empower utilized its **energy analytics and consumer data to outreach** and sell the “**Empower Home Energy Tune-Up**” to homeowners in the City of Cleveland.

Measures:

- Attic insulation
- Air-sealing
- Smart thermostat (when applicable)
- Rim-joint and crawlspace sealing (when applicable)
- LED lights (when applicable)





Key Metrics

Cleveland Energy\$aver[®] Version 1.0: (Late 2011 – End 2013)

- 320 Homes Assessed → 150 Homes Improved/Retrofitted
- **47% conversion rate**

M&V: Average **30% Energy Savings**

- Measured savings - 63 homes

Cleveland Energy\$aver[®] Version 2.0: (2015-2017)

- 59 Homes Assessed → 12 Homes Improved/Retrofitted

M&V: Average **18% Energy Savings**

- Projected savings – 12 homes



Success Factors (Occupant Engagement)

Concierge Style End-End Program (v1.0 & 2.0) and a **Strong Team** with Multiple Resources/Partners

Peer word of mouth and strong testimonials ***“Comfortable, much quieter”***

Establishing **trusted relationship** with homeowner ***“There was no real short-cut to the process”***.

Knowledgeable energy auditors/assessment professionals engaging the homeowners

Incentives, rebates, access to low interest loans and **expanded** under-writing criteria. Utility prices were also higher during 2011-2013 (v1.0)

Access to **Pay As You Save** (‘Empower PAYS’) Program (v 2.0). Fewer and targeted measures, lower cost of program to homeowner



Success Factors (Occupant Engagement)

Quality Assurance (Q/A): Different professionals, than the original auditor

Coordination with utilities (v.1.0 leveraged Dominion Gas utility's residential program)

Finance entities also involved in marketing the program through their channels

Initial emphasis on savings → Gradually shifted towards a more balanced approach of **savings and comfort** → Later - **more emphasis on comfort and air quality** during home visits, especially when gas utility prices dropped after 2014

End of useful life for HVAC equipment (furnace, water heater), a big **motivator to commit** when included in package

Strong community relationships – leverage CDCs, neighborhood block-clubs, media outlets



Lessons Learnt - Improvements

Balance **technology** for marketing/outreach, with **hands-on and in-person** contacts

Continue to **coordinate more closely with utility** programs

Continue to offer **innovative financing programs**, address 'donut hole' demographics

Continue to **assist with paperwork/financing** coordination

Maintain **strong professional energy auditors and contractor** network/lists

Incorporate or follow-up with **HVAC improvements** and recommendations

Strategize for **outreach beyond initial adopters** – landlords, rental database, multi-family



Next Steps

**Re-activate Market-Rate
Residential Energy
Efficiency Program**



Explore Next Steps:
Cleveland EnergySaver[®] v3.0 ?
Role of the City ?

Cleveland Public Power (CPP) – myCPP Program

myCPP Commercial

Profile Pay My Bill Outages Street Lights Hello, Anand

Contact name (salutation / first / last / suffix / title) +100

Next →

Usage History

Monthly Bill

Line Chart kWh

My Points

150

7950 best in your community +25 earned this month

CPP Related Tips

Reporting Outage... +50

Tweets by clepublicpower

Energy Savings Tips

Common Area Lighting ... +100

Common Area LED Retr... +100

Refrigeration / Walk-In ...

Refrigerated case lighti... +100

Lighting Retrofit (e.g. T... +100

LED Retrofits +100

Exit Lighting

MyCPP User Acquisition History

3,274 total users
3210 residential; 64 commercial



Program Highlights:

- **Customer Engagement Platform** beyond bill payment
- **Rewards-based system** - earn points by taking surveys and reviewing energy saving tips provided through survey answers
- Surveys designed to encourage participants to **return to the site**
- **Points and merit badges** for completing various activities within site; Points redeemable for a **MyCPP branded incentive**

Program Highlights:

- Active users of the system: **just under 75% mark** of the 5,000 residential customers targeted sample size for the pilot
- Actively collecting meaningful profile data on its consumers - Confirming **customer awareness** about bill payment options, seasonal rates, reporting street light and service outages
- CPP is looking at how to **track additional metrics** – more active and engaged users than before

Thank You!

Anand Natarajan

Energy Manager

City of Cleveland, Mayor's Office of Sustainability

anatarajan@city.cleveland.oh.us

Ph: 216.664.2459

Join us at :

www.SustainableCleveland.org

The Consumer Connection: Consumer-Centric Approaches to Delivering Home Energy Services

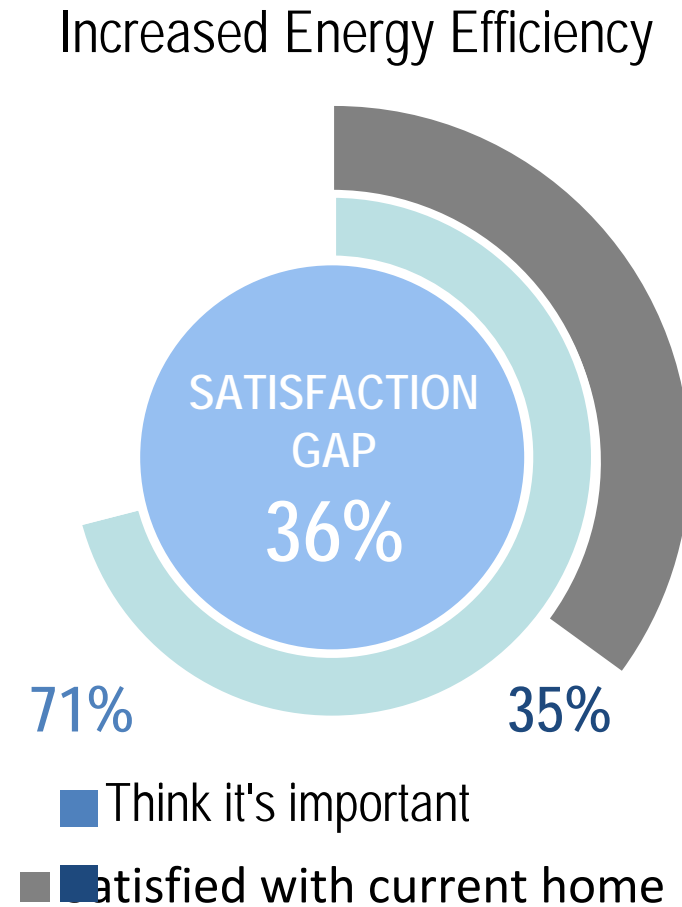
Greg Hopkins, RMI
Better Buildings Summit
8/23/2018



Transforming global energy use to create a clean, prosperous, and secure low-carbon future.



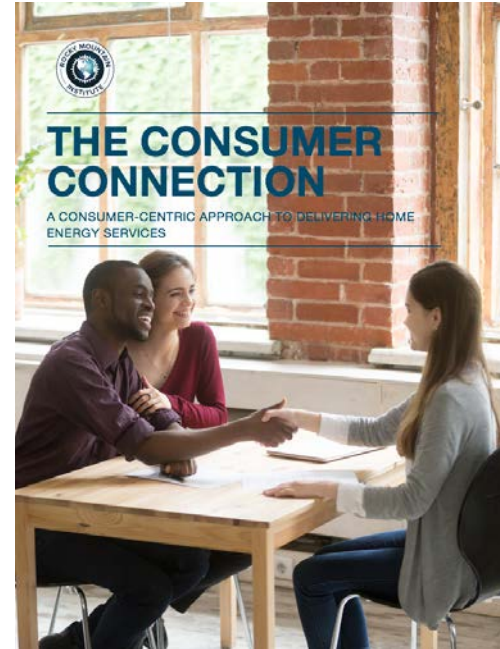
Why is the market failing to convert more homeowner interest in energy efficiency into action?



New RMI Report Launching This Week

Based on a consumer survey:

- 1,210 participants
- 50 US states
- 8.7 average years of homeownership
- 65% have made energy upgrades



Goal: to help service providers understand their best intervention points and take a more consumer-centric approach to energy upgrade services.

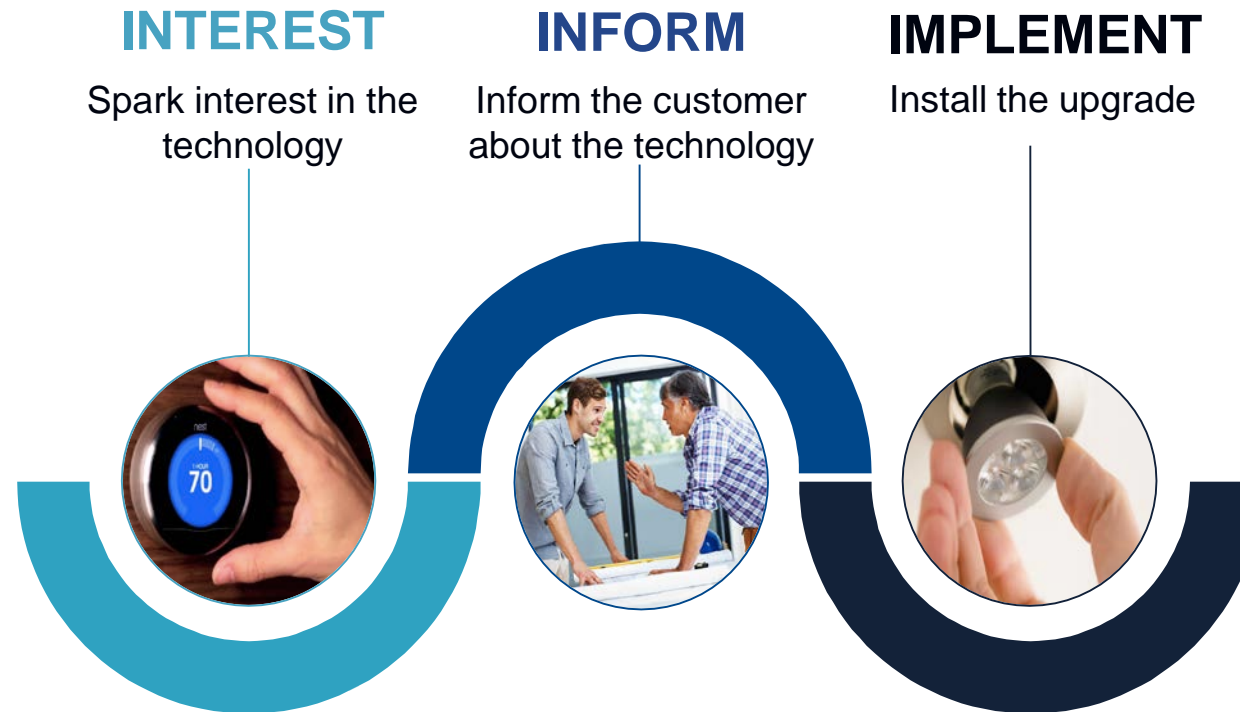
Survey looked at 6 trigger events and 10 messengers for 2 technology packages: HVAC and solar PV






1. Company salesperson
2. Contractor
3. Family member
4. Friend
5. Appraiser
6. Home inspector
7. Local government
8. Utility company
9. Homeowner
10. Real estate agent

The 3i Pathway

Helps stakeholders recognize when and how to engage customers, who makes the best messenger, and what the most likely financing options are






Consumer Pathways for HVAC Upgrades

TRIGGER	INTEREST 	INFORM 	IMPLEMENT 
Repair	<ol style="list-style-type: none"> 1. Family/friends (35%) 2. Contractor (29%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Family/Friends (26%) 3. Home Inspector & Utility (14% ea) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate for self	<ol style="list-style-type: none"> 1. Family/friends (38%) 2. Contractor (18%) 3. Utility (17%) 	<ol style="list-style-type: none"> 1. Contractor (26%) 2. Family/Friends (25%) 3. Utility (22%) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate to sell	<ol style="list-style-type: none"> 1. Family/friends (25%) 2. Contractor (24%) 3. Real Estate Agent (14%) 4. Appraiser (13%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Utility(18%) 3. Home Inspector & Family/Friends (13% ea) 	<ol style="list-style-type: none"> 1. Contractor (81%)
Home purchase	<ol style="list-style-type: none"> 1. Family/friends (41%) 2. Contractor (24%) 3. Salesperson (14%) 	<ol style="list-style-type: none"> 1. Contractor (31%) 2. Utility (20%) 3. Family/Friends (15%) 4. Home inspector (14%) 	<ol style="list-style-type: none"> 1. Contractor (84%)
Build a home	<ol style="list-style-type: none"> 1. Family/friends (26%) 2. Contractor (24%) 3. Salesperson (18%) 	<ol style="list-style-type: none"> 1. Contractor (34%) 2. Utility (22%) 3. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (90%)
General/anytime	<ol style="list-style-type: none"> 1. Family/friends (31%) 2. Contractor (19%) 3. Utility (18%) 	<ol style="list-style-type: none"> 1. Contractor (36%) 2. Family/Friends (28%) 3. Utility (19%) 4. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (84%)




Highlighted text indicates strong preference lead

Consumer Pathways for HVAC Upgrades

TRIGGER	INTEREST 	INFORM 	IMPLEMENT 
Repair	<ol style="list-style-type: none"> 1. Family/friends (35%) 2. Contractor (29%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Family/Friends (26%) 3. Home Inspector & Utility (14% ea) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate for self	<ol style="list-style-type: none"> 1. Family/friends (38%) 2. Contractor (18%) 3. Utility (17%) 	<ol style="list-style-type: none"> 1. Contractor (26%) 2. Family/Friends (25%) 3. Utility (22%) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate to sell	<ol style="list-style-type: none"> 1. Family/friends (25%) 2. Contractor (24%) 3. Real Estate Agent (14%) 4. Appraiser (13%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Utility(18%) 3. Home Inspector & Family/Friends (13% ea) 	<ol style="list-style-type: none"> 1. Contractor (81%)
Home purchase	<ol style="list-style-type: none"> 1. Family/friends (41%) 2. Contractor (24%) 3. Salesperson (14%) 	<ol style="list-style-type: none"> 1. Contractor (31%) 2. Utility (20%) 3. Family/Friends (15%) 4. Home inspector (14%) 	<ol style="list-style-type: none"> 1. Contractor (84%)
Build a home	<ol style="list-style-type: none"> 1. Family/friends (26%) 2. Contractor (24%) 3. Salesperson (18%) 	<ol style="list-style-type: none"> 1. Contractor (34%) 2. Utility (22%) 3. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (90%)
General/anytime	<ol style="list-style-type: none"> 1. Family/friends (31%) 2. Contractor (19%) 3. Utility (18%) 	<ol style="list-style-type: none"> 1. Contractor (36%) 2. Family/Friends (28%) 3. Utility (19%) 4. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (84%)




Highlighted text indicates strong preference lead

Consumer Pathways for HVAC Upgrades

TRIGGER	INTEREST 	INFORM 	IMPLEMENT 
Repair	<ol style="list-style-type: none"> 1. Family/friends (35%) 2. Contractor (29%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Family/Friends (26%) 3. Home Inspector & Utility (14% ea) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate for self	<ol style="list-style-type: none"> 1. Family/friends (38%) 2. Contractor (18%) 3. Utility (17%) 	<ol style="list-style-type: none"> 1. Contractor (26%) 2. Family/Friends (25%) 3. Utility (22%) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate to sell	<ol style="list-style-type: none"> 1. Family/friends (25%) 2. Contractor (24%) 3. Real Estate Agent (14%) 4. Appraiser (13%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Utility(18%) 3. Home Inspector & Family/Friends (13% ea) 	<ol style="list-style-type: none"> 1. Contractor (81%)
Home purchase	<ol style="list-style-type: none"> 1. Family/friends (41%) 2. Contractor (24%) 3. Salesperson (14%) 	<ol style="list-style-type: none"> 1. Contractor (31%) 2. Utility (20%) 3. Family/Friends (15%) 4. Home inspector (14%) 	<ol style="list-style-type: none"> 1. Contractor (84%)
Build a home	<ol style="list-style-type: none"> 1. Family/friends (26%) 2. Contractor (24%) 3. Salesperson (18%) 	<ol style="list-style-type: none"> 1. Contractor (34%) 2. Utility (22%) 3. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (90%)
General/anytime	<ol style="list-style-type: none"> 1. Family/friends (31%) 2. Contractor (19%) 3. Utility (18%) 	<ol style="list-style-type: none"> 1. Contractor (36%) 2. Family/Friends (28%) 3. Utility (19%) 4. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (84%)




Highlighted text indicates strong preference lead

Consumer Pathways for HVAC Upgrades

TRIGGER	INTEREST 	INFORM 	IMPLEMENT 
Repair	<ol style="list-style-type: none"> 1. Family/friends (35%) 2. Contractor (29%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Family/Friends (26%) 3. Home Inspector & Utility (14% ea) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate for self	<ol style="list-style-type: none"> 1. Family/friends (38%) 2. Contractor (18%) 3. Utility (17%) 	<ol style="list-style-type: none"> 1. Contractor (26%) 2. Family/Friends (25%) 3. Utility (22%) 	<ol style="list-style-type: none"> 1. Contractor (85%)
Renovate to sell	<ol style="list-style-type: none"> 1. Family/friends (25%) 2. Contractor (24%) 3. Real Estate Agent (14%) 4. Appraiser (13%) 	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Utility(18%) 3. Home Inspector & Family/Friends (13% ea) 	<ol style="list-style-type: none"> 1. Contractor (81%)
Home purchase	<ol style="list-style-type: none"> 1. Family/friends (41%) 2. Contractor (24%) 3. Salesperson (14%) 	<ol style="list-style-type: none"> 1. Contractor (31%) 2. Utility (20%) 3. Family/Friends (15%) 4. Home inspector (14%) 	<ol style="list-style-type: none"> 1. Contractor (84%)
Build a home	<ol style="list-style-type: none"> 1. Family/friends (26%) 2. Contractor (24%) 3. Salesperson (18%) 	<ol style="list-style-type: none"> 1. Contractor (34%) 2. Utility (22%) 3. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (90%)
General/anytime	<ol style="list-style-type: none"> 1. Family/friends (31%) 2. Contractor (19%) 3. Utility (18%) 	<ol style="list-style-type: none"> 1. Contractor (36%) 2. Family/Friends (28%) 3. Utility (19%) 4. Home inspector (15%) 	<ol style="list-style-type: none"> 1. Contractor (84%)

Highlighted text indicates strong preference lead

Consumer Pathways for Solar Upgrades

TRIGGER	INTEREST 	INFORM 	IMPLEMENT 
Repair	<ol style="list-style-type: none"> 1. Family/friends (32%) 2. Contractor (25%) 3. Utility (14%) 	<ol style="list-style-type: none"> 1. Contractor (26%) 2. Utility (17%) 3. Inspector (16%) 4. Family/friends (15%) 	<ol style="list-style-type: none"> 1. Contractor (81%)
Renovate for self	<ol style="list-style-type: none"> 1. Family/friends (47%) 2. Contractor (17%) 3. Utility (13%) 	<ol style="list-style-type: none"> 1. Contractor (32%) 2. Family/friends & Utility (17% ea) 	<ol style="list-style-type: none"> 1. Contractor (89%)
Renovate to sell	<ol style="list-style-type: none"> 1. Family/friends (27%) 2. Contractor (21%) 3. Appraiser (18%) 	<ol style="list-style-type: none"> 1. Contractor (26%) 2. Family/friends (18%) 3. Utility (16%) 	<ol style="list-style-type: none"> 1. Contractor (82%)
Home purchase	<ol style="list-style-type: none"> 1. Family/friends (33%) 2. Contractor (22%) 3. Utility (18%) 	<ol style="list-style-type: none"> 1. Contractor (30%) 2. Utility (19%) 3. Inspector & Salesperson (13% ea) 	<ol style="list-style-type: none"> 1. Contractor (82%)
Build a home	<ol style="list-style-type: none"> 1. Contractor (33%) 2. Salesperson (30%) 	<ol style="list-style-type: none"> 1. Contractor (30%) 2. Utility & Family/friends (17% ea) 3. Inspector (14%) 	<ol style="list-style-type: none"> 1. Contractor (91%)
General/anytime	<ol style="list-style-type: none"> 1. Family/friends (45%) 2. Contractor (19%) 3. Utility (13%) 	<ol style="list-style-type: none"> 1. Contractor (28%) 2. Utility (23%) 3. Family/friends (15%) 	<ol style="list-style-type: none"> 1. Contractor (83%)

Highlighted text indicates strong preference lead

Motivation

Menu	Top HVAC Motivators	Top Solar Motivators
<ul style="list-style-type: none">• Short-term costs• Long-term savings• Environmental benefits• Resale value increase• Greater indoor personal comfort• Ability to finance upgrade• Improved personal health• Increased automation of home operations• Increased use of latest technologies• Ease of implementation	<ol style="list-style-type: none">1. Long-term savings2. Greater indoor personal comfort3. Resale value increase	<ol style="list-style-type: none">1. Long-term savings2. Resale value increase & ability to finance upgrade

Note that these results are based on self-reported data, which may not always be fully accurate when it comes to motivations

Financing

Menu	Top HVAC Preferences	Top Solar Preferences
<ul style="list-style-type: none">• Pay upfront with cash or savings• Credit card (to pay off immediately)• Credit card (NOT to pay off immediately)• Bank loan• Mortgage or HELOC (home equity line of credit)• PACE (property assessed clean energy) financing• On-bill financing	<ol style="list-style-type: none">1. Pay upfront with cash or savings2. On-bill financing3. Credit card (to pay off immediately) and PACE financing	<ol style="list-style-type: none">1. Pay upfront with cash or savings2. On-bill financing3. PACE financing4. Credit card (to pay off immediately)

PACE or OBF are consumers' preferred financing options when they don't want to pay for upgrades themselves (and when they understand what those mechanisms are)

Some takeaways for the energy service industry:

Focus on the right conditions

Timing is everything; reach consumers at the right trigger events with the appropriate messengers and the applicable financing methods

Create the right partnerships

Nobody can do it all; no stakeholder is the top preferred messenger for all conditions, so partner with other entities to capture a bigger market share

Don't underestimate the power of word-of-mouth

Friends and family are critical interest generators that should be more actively and strategically leveraged by service providers

Take a consumer-centric approach

Don't market your services according to your own interests, think about customers' interests, motivations, and stage on the 3i Pathway

Thank you for listening Questions?



Report: www.rmi.org/insight/consumer-connection-home-energy-services
Email: ghopkins@rmi.org



Transforming global energy use to create a clean, prosperous, and secure low-carbon future.

