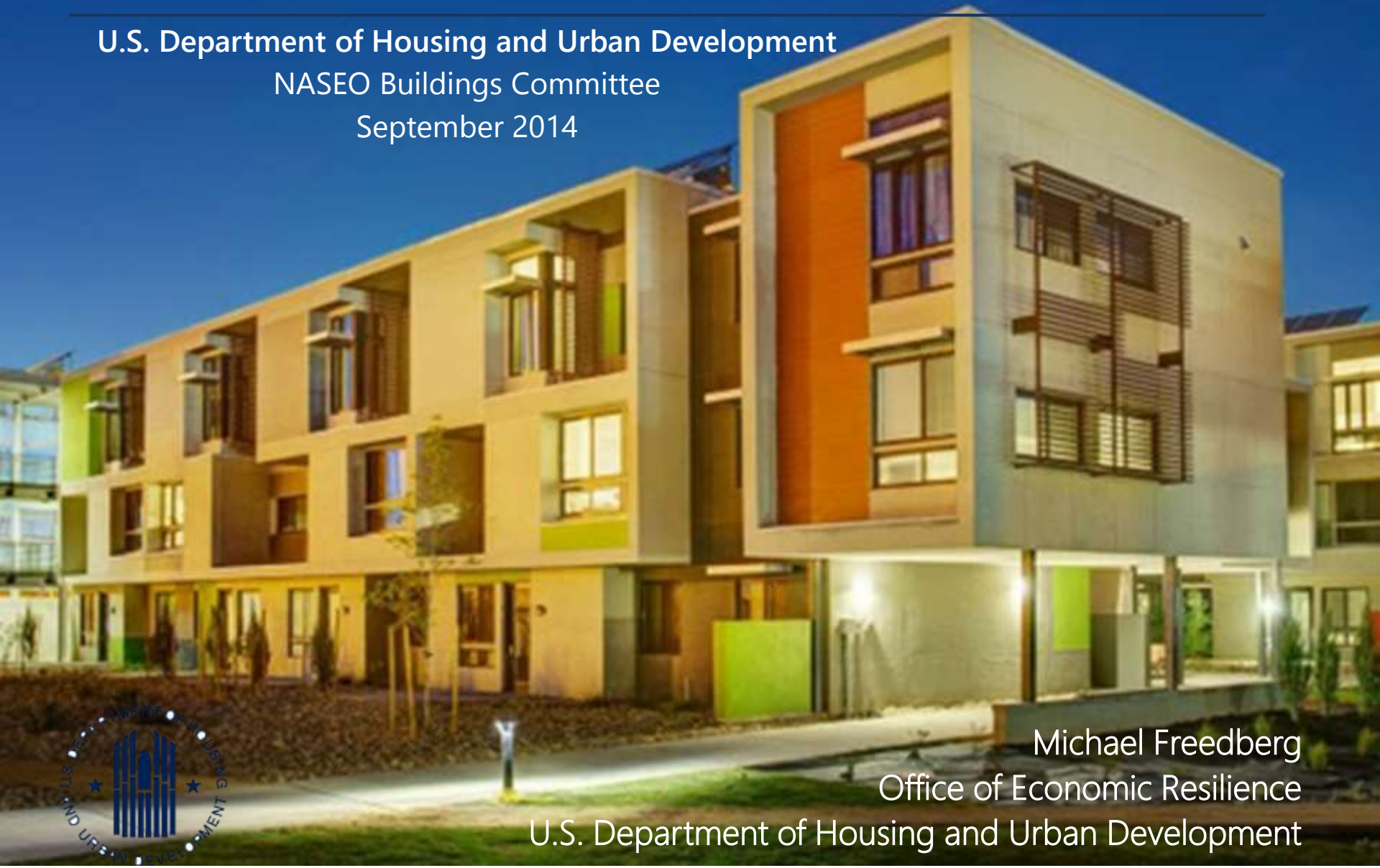
Energy Efficiency and Resilient Communities

U.S. Department of Housing and Urban Development

NASEO Buildings Committee

September 2014



Michael Freedberg
Office of Economic Resilience
U.S. Department of Housing and Urban Development

Office of Economic Resilience 101

- Created in 2010 as part of Obama Administration's Partnership for Sustainable Communities, formerly Office of Sustainable Housing and Communities.

- Aligning federal investments in housing, transportation, infrastructure, and the environment by leveraging private, philanthropic and local government funds and catalyzing hubs of opportunity across the country

- Two main initiatives:

  Sustainable Housing - Energy Efficiency and Green Building

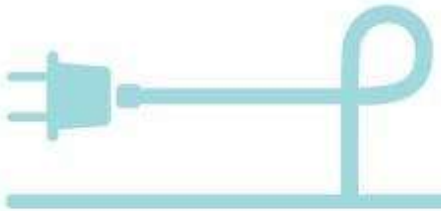
  Coordinates intra- and inter-agency energy efficiency and green building goals and initiatives for HUD. Implements the President's Climate Action Plan

  Sustainable Communities - Location Efficiency and Resilience

  Helping 143 rural, suburban, and urban communities link jobs with transportation and housing, foster long-term economic growth, and protect America's environment.

Climate-Action Plan Implementation

CUTTING ENERGY WASTE IN HOMES, BUSINESSES, AND FACTORIES



Energy efficiency is one of the clearest and most cost-effective opportunities to save families money, make our businesses more competitive, and reduce greenhouse gas pollution.

PROGRESS:

In President Obama's first term, DOE and HUD completed efficiency upgrades in more than one million homes, saving many families more than $400 on their heating and cooling bills in the first year alone.

PROGRESS:

In 2011, President Obama announced the Better Buildings Initiative to help commercial and industrial buildings become at least 20 percent more energy efficient by 2020. So far, more than 120 organizations are on track.

CONTINUING THE MOMENTUM FOR THE FUTURE:

The Administration will take a range of new steps geared towards achieving President Obama's goal of doubling energy productivity by 2030, relative to 2010 levels.

AS SOON AS FALL 2013:

The Department of Agriculture's (USDA) Rural Utilities Service (RUS) will update its Energy Efficiency and Conservation Loan Program to provide up to $250 million for rural utilities to finance efficiency investments.

2020

To continue the success of the Better Buildings Challenge, the Administration will expand the Challenge to multifamily housing to cut energy waste.

In addition, the Administration is launching the Better Buildings Accelerators, to support and encourage adoption of state and local policies to cut energy waste.

2030

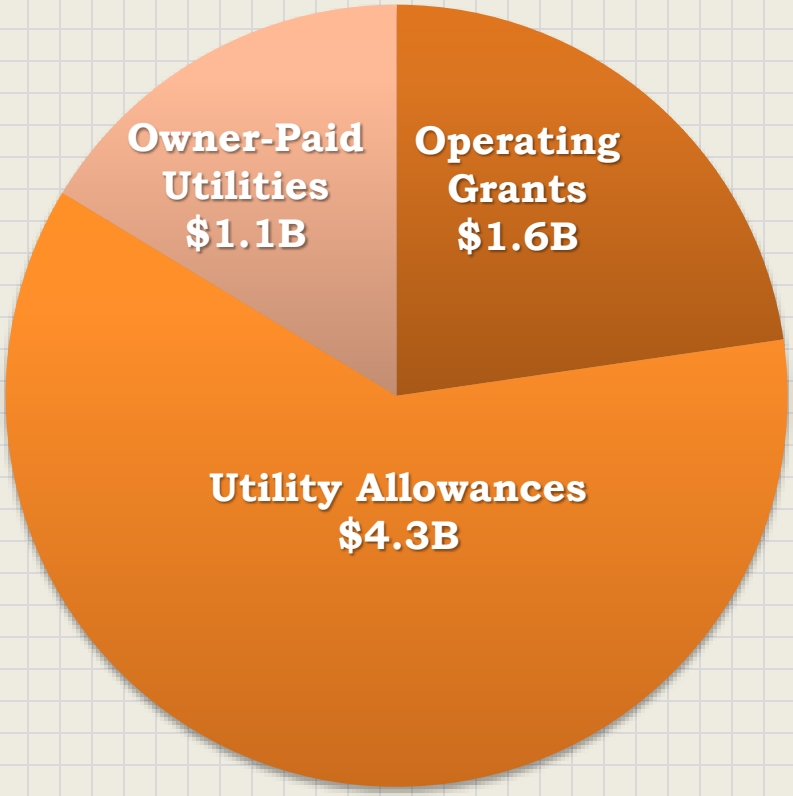
The Administration will build on this momentum by establishing new standards that — when combined with the progress already underway from the first term — will reduce carbon pollution by at least 3 billion metric tons by 2030, equivalent to more than a year's carbon pollution from our entire electricity system.

HUD ASSISTED
RENTERS AND OWNERS SPEND MORE THAN

$7 BILLION

A YEAR ON UTILITIES

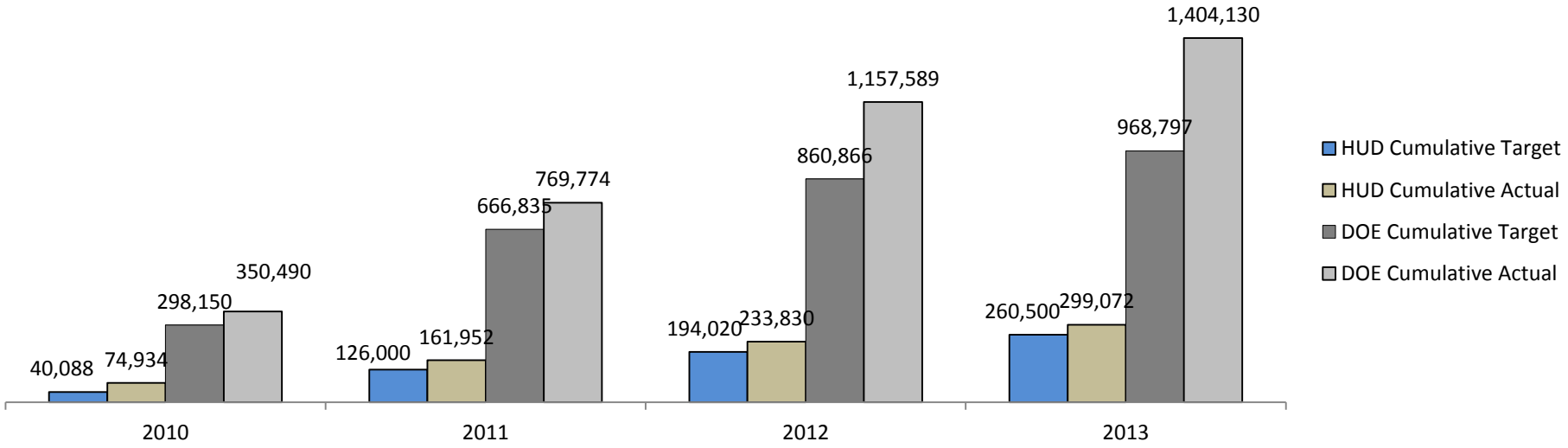
=

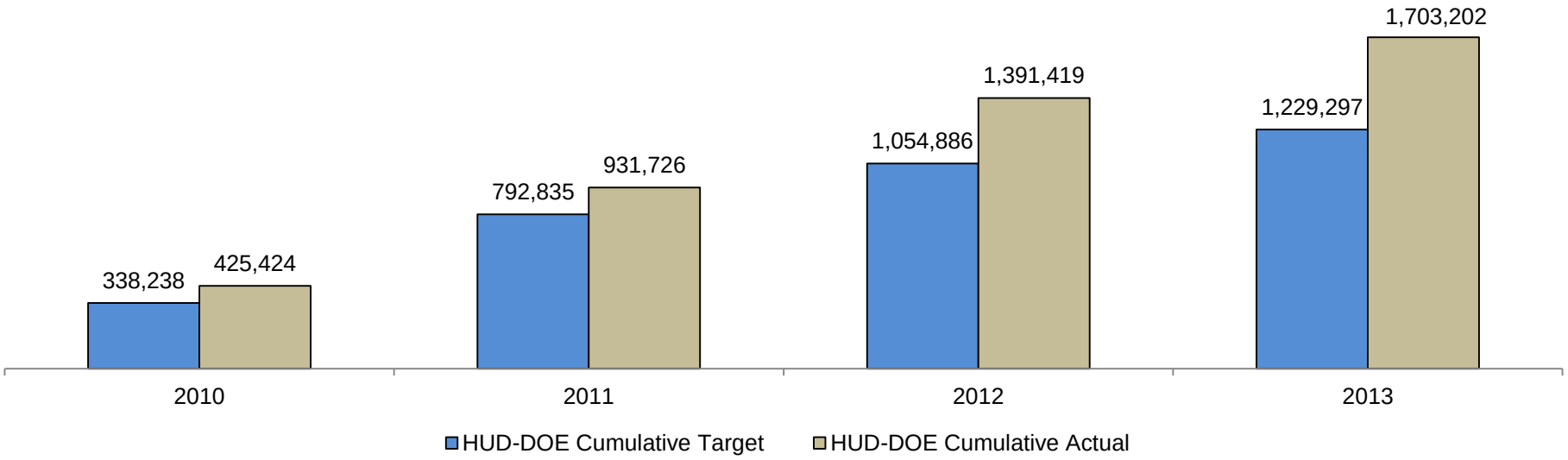


HUD estimates a modest reduction of 5% of energy usage could save $350 million a year, or $1.75 billion over 5 years.

Over four years (2010-13) HUD and DOE jointly financed 1.7 million energy retrofits or new green units, in large measure due to a significant infusion of Recovery Act funds.

- HUD and DOE have jointly completed 771,476 retrofits in FY12-13.
- HUD contributed 137,120 units in FY12-13 excluding HUD OHHLHC units.





Green Affordable Housing

Good for Environment

Good for Public Health

Sound Fiscal Policy

Folsom Dore Apartments
San Francisco, California

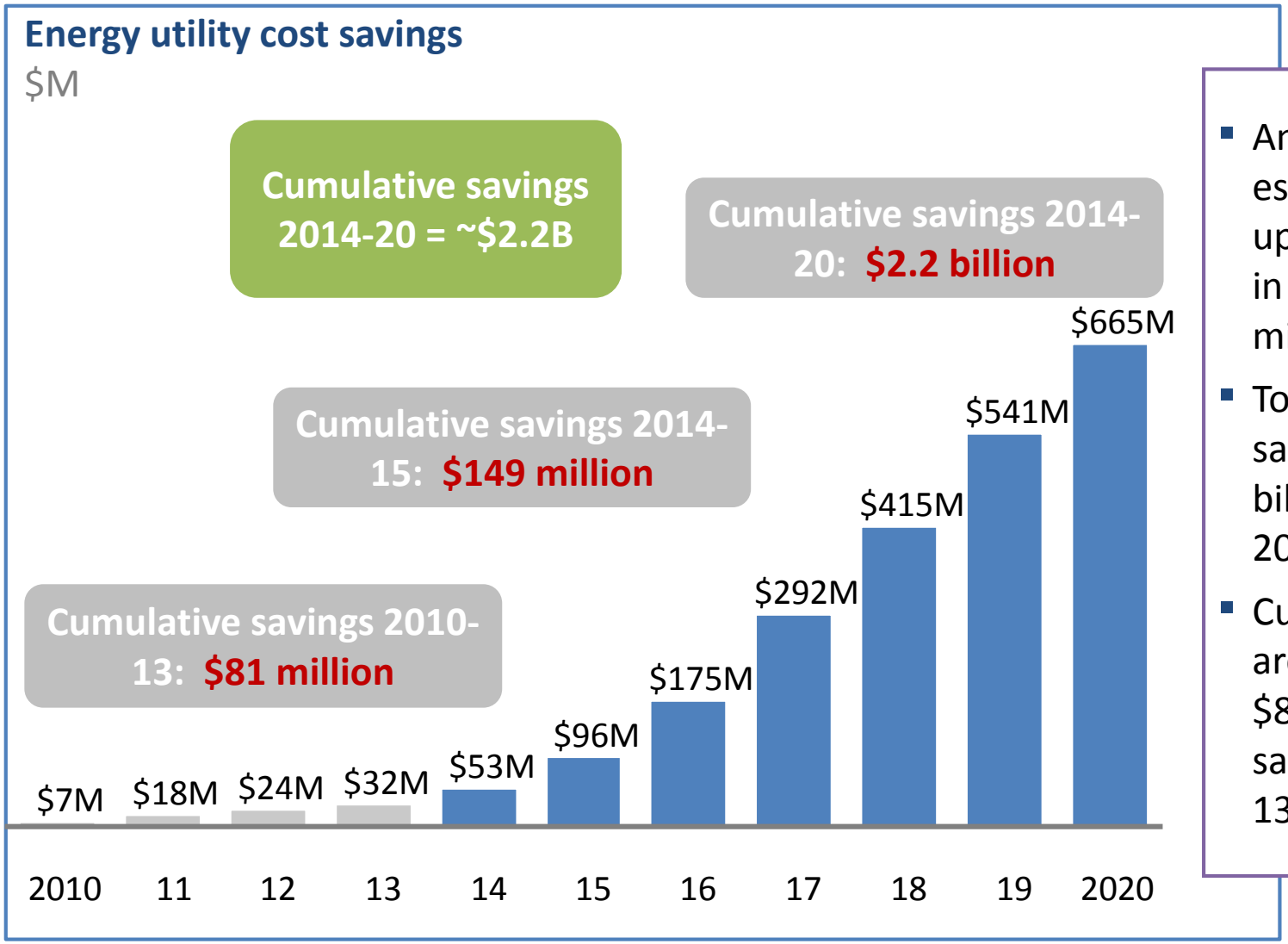
- 98-unit mixed-income building
- Offers permanent supportive housing for formerly and chronically homeless individuals and families
- Incorporated many green design elements in project; beat the minimum state energy-efficiency standards by 20%
  - high efficiency HVAC system
  - EnergyStar appliances
  - high-performing windows

- 73-unit senior housing project
- First NetZero, Fossil Fuel Free, LEED Platinum senior housing project in the U.S.
- Energy efficiency strategies:
  - passive systems
  - active mechanical systems
- Renewable energy systems:
  - solar and wind energy

Paisano Green Community
El Paso, Texas

LEED GOLD Penobscot Indian Nation - Penobscot Maine

Looking ahead, HUD projects extensive energy savings from a wide range of new initiatives, totaling savings of $2.2B from 2014-2020



- Annual savings are estimated to ramp up from $53 million in 2014 to $665 million in 2020.
- Total cumulative savings of $2.2 billion from 2014-2020.
- Current initiatives are responsible for $81 million in savings from 2010-13.

Partnership Opportunities

- New ASHRAE and IECC codes for HUD and USDA assisted properties
- PowerSaver for home energy efficiency improvements
- Better Buildings Challenge for Multifamily Residential
- Renewable Energy Target in New Buildings
- Soon – Disaster Recovery Resilience Grants

Align policies to improve efficiency of federally assisted and financed building stock

- Synchronize building codes to improve the efficiency of federally assisted and supported buildings.

- Promote Energy Benchmarking , green capital needs assessments, and performance standards for existing buildings within the federally assisted housing stock.

Increasing Energy Efficiency Standards

Energy Efficiency Alignment Framework for HUD and USDA

New construction with competitive federal grants

- **Energy Star for New Homes or Multifamily High Rise**

New FHA Insured or USDA Guaranteed/HOME/PH

- **Current IECC 2009 or ASHRAE 90.1-2007 (12 states)**
- **Coming– 2012/15 IECC or ASHRAE90.1-2010/13**

Substantial rehabilitation

- **Green Capital Needs Assessment**

Moderate/other rehabilitation

- **at minimum, Energy Star/WaterSense products and appliances**

Energy Retrofits

- **cost-effective measures determined by energy audits**

Financing Home Energy Improvements

The need for affordable financing

- Helping homeowners make money-saving home energy improvements is a top priority
- Home energy improvements can save families hundreds of dollars a year -- while creating jobs and reducing pollution.
- More home owners want to make home energy improvements, according to industry forecasts.
- But a lack of affordable, available financing remains a major barrier for many consumers.
- A market need exists for additional financing options.

FHA Financing for Single Family Housing

Agency	Financing Program	What it Does
HUD/ FHA	**Energy Efficient Mortgage Program**	Helps homebuyers or homeowners save money on utility bills by enabling them to finance the cost of improvements that will make their home more energy efficient
HUD/ FHA	**PowerSaver 203(k) Purchase Rehab Program**	Enables homebuyers or homeowners to finance the cost of home improvements when buying a home or refinancing an existing mortgage
HUD/ FHA	**PowerSaver Home Improvement Loan Pilot Program**	Enables homeowners to make cost effective, energy saving improvements to their homes. PowerSaver enables homeowners to borrow up to $25,000 through a second mortgage for terms as long as 20 years – up to $7,500 can be an unsecured consumer loan

Value of Financing to EE/RE?

- Financing:
  - Gives access to energy efficiency/renewable energy to people who do not have (or do not want to use) cash.
  - Enables larger and deeper energy efficiency/renewable retrofits than happen in absence of financing.
    - DOE-sponsored finance programs show that average non financed projects are $6,500 vs. $12,000 for financed projects.
- But availability of financing alone is not enough. Financing programs need three major elements (the three C's):
  - Confidence: PowerSaver has insurance from HUD
  - Capital: PowerSaver has Fannie Mae + $ millions committed to it
  - Convenience: PowerSaver is set up and ready to go with committed lenders and capital

Three PowerSaver Products

I: PowerSaver Home Energy Upgrade

- Unsecured Consumer Loan Up to $7,500
- Currently available in approximately 20 s

II: PowerSaver Energy Retrofit or Solar Loan

- Second mortgage up to $25,000

III. PowerSaver 203k Purchase-Rehabilitation Mortgage

- First mortgage up to FHA loan limits ($217,500 to $625,500 in high cost areas)

$25 million grant funds invested to lower transaction costs

Borrower

- Energy audit, if borrower desires
  - Audit is not required
  - Auditor must be accredited by HERS or BPI
  - Auditor can be the contractor
- Loan origination fee
- Property appraisal if lender requires

Lender

- Program marketing expenses


PowerSaver
LOANS
Saving Energy. Saving Money. Improving Homes.


SunWest
Mortgage Company, Inc.


UNIVERSITY OF VIRGINIA
COMMUNITY
CREDIT UNION


AFCFIRST
Since 1947


efficiency
MAINE


WJB
W.J. BRADLEY
POWER
SAVER
PROGRAM


AMERIFIRST
HOME MORTGAGE


leap


PARAMOUNT
EQUITY MORTGAGE
NMLS #30336


NEIGHBOR'S
FINANCIAL
CORPORATION
Serving Communities Since 1989

The Housing System's Views on Retrofit Financing

- "The system" -- lenders, regulators, investors, Realtors, appraisers -- needs more data that shows that predicted energy savings from specific retrofit workscopes materializes on a predictable ("underwritable") basis.
- The system needs more data that shows such savings accrue to homeowners as predicted.
- The system needs more data that shows that energy efficient homes are more valuable assets.
- The system is generally reluctant to underwrite predicted benefits in mainstream financial products – i.e., rely on technology or models – absent more data on actual performance.
- The system is generally resistant to forms of financing that interfere with first mortgages or put borrowers in potentially adverse financial situations .

Better Buildings CHALLENGE
U.S. DEPARTMENT OF ENERGY

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Home | Partners | Allies | Media | About | Contact | SEARCH

Home » Partners » Better Buildings » Multifamily Residential Partners

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

U.S. DEPARTMENT OF ENERGY

Expanding to Include the Multifamily Residential Sector

In 2013, the Department of Energy (DOE) and the Department of Housing and Urban Development (HUD) have partnered to expand the Better Buildings Challenge to the multifamily residential sector. This expansion is part of President Obama's Climate Action Plan, which was announced in June and recognizes the role that increased efficiency can play in reducing energy use and carbon pollution from this sector. Multifamily residential buildings and operations can be made much more efficient using a variety of cost-effective energy improvements, while simultaneously creating jobs and building a stronger economy. Participating residential building owners and managers have committed to reducing energy consumption by at least 20 percent over 10 years. Multifamily Partners are leaders in market rate (unsubsidized) multifamily housing, Public Housing Authorities, Low-Income Housing Tax Credit properties, and HUD-assisted multifamily properties.

Multifamily Residential Housing Partners as of December 3, 2013

Resources

- Partnership Agreement (PDF, 1.65 MB)
- The President's Climate Action Plan (PDF, 311 KB)
- Better Buildings Challenge Overview (PDF, 452 KB)
- Frequently Asked Questions

Better Buildings® CHALLENGE
U.S. DEPARTMENT OF ENERGY

- Partnership with DOE, White House, and multifamily stakeholders
- Voluntary leadership initiative:
  - 20% reduction in energy use within 10 years
  - Share success stories and case studies
  - Benchmark portfolio
- Opportunity to pilot policy changes that reduce energy expenditures
  - FHA: 3 of 6 policy incentives are live
  - PIH: expedited review of EPCs
  - $1.5 mm in direct Technical Assistance
- Progress since Dec. 2013 launch
  - 76 multifamily building owners/managers
  - ~400,000 units/ ~400 million sq. ft.
  - New partnerships w/ financial allies

Secretary Donovan, Senator Cardin, and Mayor Rawlings-Blake visit a BBC Partner

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Success Stories

- The Housing Authority of Baltimore City, one of our nation's largest, has been able to realize nearly 30% energy savings through an aggressive resident engagement effort that incorporates tenant education and real-time energy monitoring to save low-income residents money.

- Community Housing Partners recently completed a major rehab of a historic supportive housing development for formerly homeless individuals. This project, built to EARTHCRAFT green building standards, resulted in an improvement to the buildings energy efficiency by more than 50 percent.

- WinnCompanies performed a deep energy retrofit of Castle Square Apartments and is seeing an astonishing 72 percent reduction in energy consumption. This project relied on a new super insulated building shell, tighter building envelope, new HVAC, and efficient lighting and appliances.

Establishing a Renewable Energy Target for Federally Subsidized Housing

100 megawatts of installed renewable capacity on-site at federally subsidized housing by 2020

- ✓ expand the renewable energy sector
- ✓ promote climate resilience and cost effective distributed generation in low income housing
- ✓ curb carbon emissions
- ✓ tools like Power Purchase Agreements make it possible
- ✓ 27 affordable housing service providers have committed 150 MW over next decade

Project Facts

- 2.5 Megawatts
- 666 roof tops
- 10,471 panels
- CO2 reduction of 3,500 tons
- Generates 3.4 million kilowatt hours annually

Funding sources:

Third party owns and operates panels on DHA's buildings and sells DHA electricity at a discount

DHA receives roof lease payment

Option to purchase panels at 75% discount in 6 years

Denver Housing Authority: 2.5 Megawatt Solar Deployment

National Housing Trust
Solar Projects—Washington, D.C

NHT/Properties Impacted: 5
Solar Thermal Systems: 2
Solar Photovoltaic Systems: 4
Total Project Cost: $1.25 million
Photovoltaic: 300,000 kw/year
Thermal: 10,000 therms/year
4-5 year pay-back period

R Street Apartments

Meridian Manor

Galen Terrace

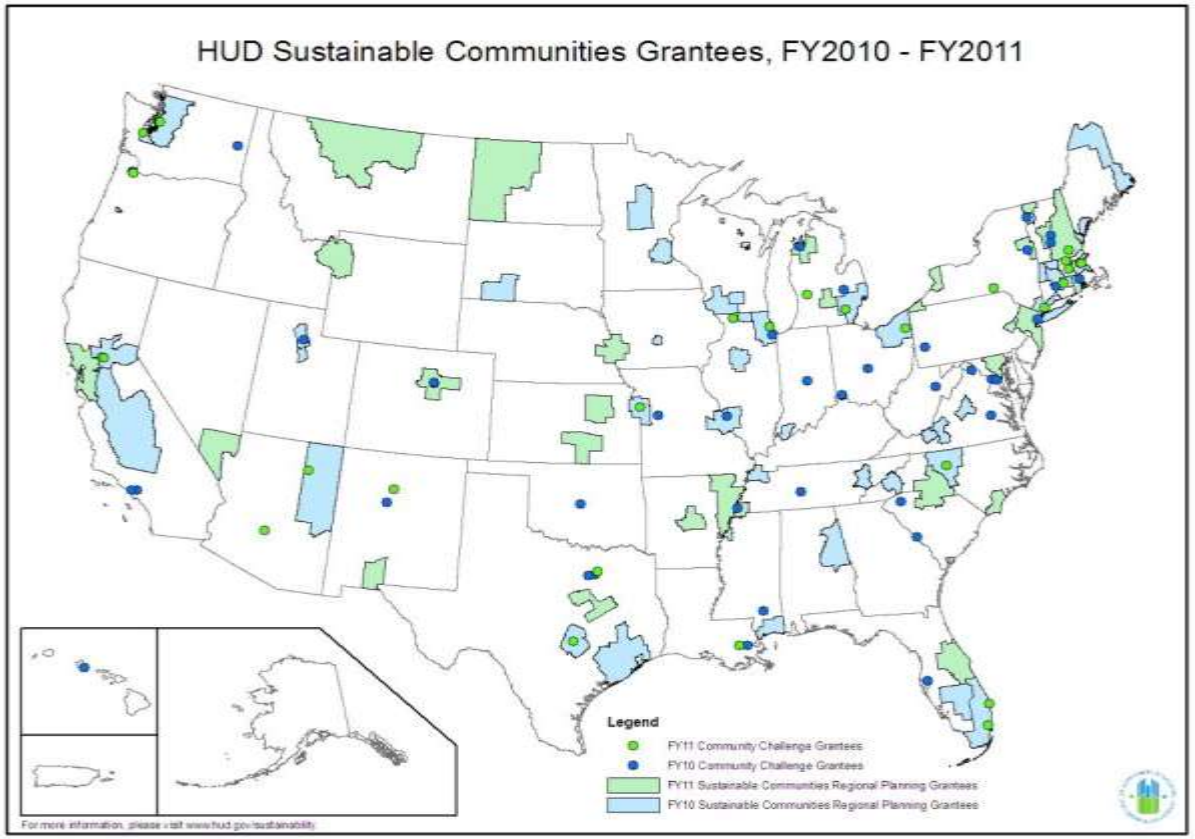
Copeland Manor

St. Dennis Apartments

Sustainable Communities Initiative: Strong Interagency Partnerships

Sustainable Communities in Action:

Where We Work



Supporting work in 48 states and D.C.

More than 145 million Americans live in these regions and communities.

A total federal investment of **$250 million** is leveraging an additional **$253 million** in private investment and local commitment

SCI Areas of Focus

- Economic Growth and Resilience
- Climate Adaptation and Disaster Recovery
- Housing and Transportation Choice
- Social Equity and Access to Opportunity
- Public Engagement and Partnerships

HUD Sustainable Communities

$2.9 million HUD Community Challenge Grant

City of Phoenix- Reinvent PHX

Project Summary: This project is producing sustainability action plans for five districts along the existing light rail line. The plans will create a vision and develop implementation strategies to establish a new transit-oriented model for urban development along the city's light rail corridors.

http://phoenix.gov/pdd/reinventphx.html

Funding:
HUD : $2.9M
Grantee Match: $2.7M

Key Community Partners:

- Arizona State University
- St. Luke's Health Initiatives Polk County

HUD Sustainable Communities

$2.0 million HUD/DOT Challenge Planning Grant

Greater Des Moines, IA – The Tomorrow Plan

Project Summary: This project is developing a Central Iowa Regional Plan for Sustainable Development, which will provide a comprehensive framework for future development of the region and create new and integrate existing regionally-planned components.

Funding:
HUD : $2.0M
Grantee Match: $1.1M

Key Community Partners:

- Des Moines Area Metropolitan Planning Organization
- Cities of Des Moines and West Des Moines
- Polk County
- Greater Des Moines Partnership
- Community Foundation of Greater Des Moines
- Iowa State University
- Center on Sustainable Communities

HUD Sustainable Communities
$2.9 million HUD Community Challenge Grant

City of Greenville, SC – West Side Plan

Project Summary: Planning in the West Side focuses on several elements in a historically disenfranchised local neighborhood, including brownfield to park conversion, health impact assessments, transit planning, local economic development, and affordable housing.

Funding:
HUD : $2.9M
Grantee Match: $2.7M

Key Community Partners:
- Neighborhood associations
- A.J. Whittenburg Elementary School
- Salvation Army Kroc Center
- South Carolina Institute of Medicine

Transportation and Housing Costs

- Transportation is the second-biggest household budget item after mortgage payments or rent (and exceeds housing costs for many lower-income and rural families)
- Both housing and transportation costs are tied to location and demographic characteristics
- But the lack of good data on transportation costs for particular locations impacts consumer decision-making
- People choose to move farther from urban cores in search of less expensive housing - but may not achieve greater affordability because of high transportation costs

Location Affordability Portal Version 1

Understanding the Combined Cost of Housing and Transportation

Housing and transportation costs combine to take up almost half of the average household's budget. While housing expenditures are usually easy to determine, transportation costs are much less transparent. The Location Affordability Portal seeks to bridge that information gap in order to help consumers, researchers, and policymakers better understand the impact of transportation costs on affordability.

Households and Real Estate Professionals

My Transportation Cost Calculator generates transportation cost estimates based on user-entered information, providing households, real estate professionals, and housing counselors customized, apples-to-apples comparisons of housing and transportation costs in different communities.

Go to My Transportation Cost Calculator

Planners, Policymakers & Developers

Developers, planners and policymakers can use the Location Affordability Index to make data-driven decisions about local and regional planning and investment. They can also use maps and data tools to help communicate with the public about different development scenarios.

Go to the Location Affordability Index

Researchers

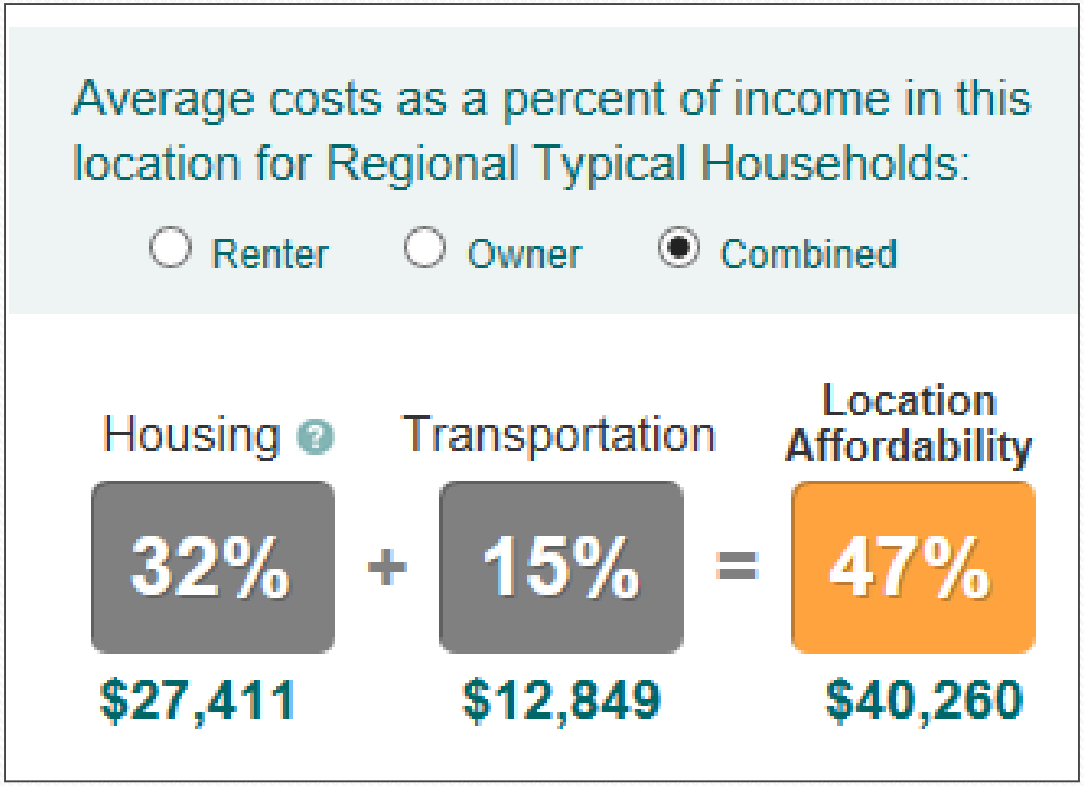
Researchers can readily access housing and transportation cost estimate data at the Census block-group level for all 942 MSAs covered by the Index.

How much does housing and transportation cost your family?

Builds on previous H+T work

- Includes 942 metro and micropolitan areas covering 94% of the U.S. population
- Updated data and more advanced analysis and modeling techniques
- Easily navigable website that displays affordability levels for 8 different household profiles
- Includes a Cost Calculator that produces customized cost estimates
- All data available for download and thorough documentation

Location Affordability Index



Location Affordability Index

SHARE

Atlanta, Ga

Enter an address, intersection, city, county, state or zip code to add marker. Markers may be dragged to a new location.

Change Household Type

Regional Typical
annual income
people
commuters

View in **My Transportation Cost Calculator**

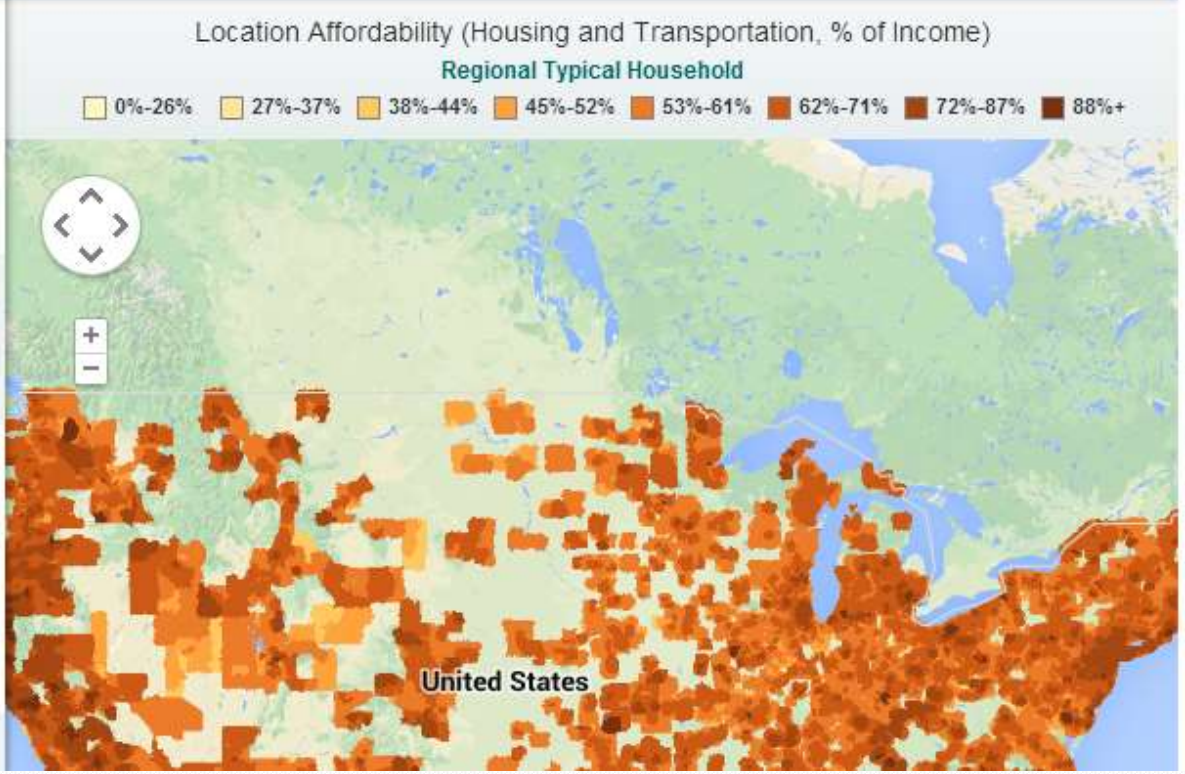
Average costs as a percent of income in this location for Regional Typical Households:

Renter Owner Combined

Housing		Transportation		Location Affordability
$	+	$	=	$

On average, Regional Typical Households in

Change Map Type



Enter a location...

Enter an address, intersection, city, county, state or zip code to add marker. Markers may be dragged to a new location.

Atlanta

Change Household Type ▼ | **Change Map Type** ▼

Regional Typical
$57,550 annual income
2.69 people
1.21 commuters
View in **My Transportation Cost Calculator**

Average costs as a percent of income in this location for Regional Typical Households:

○ Renter ○ Owner ◉ Combined

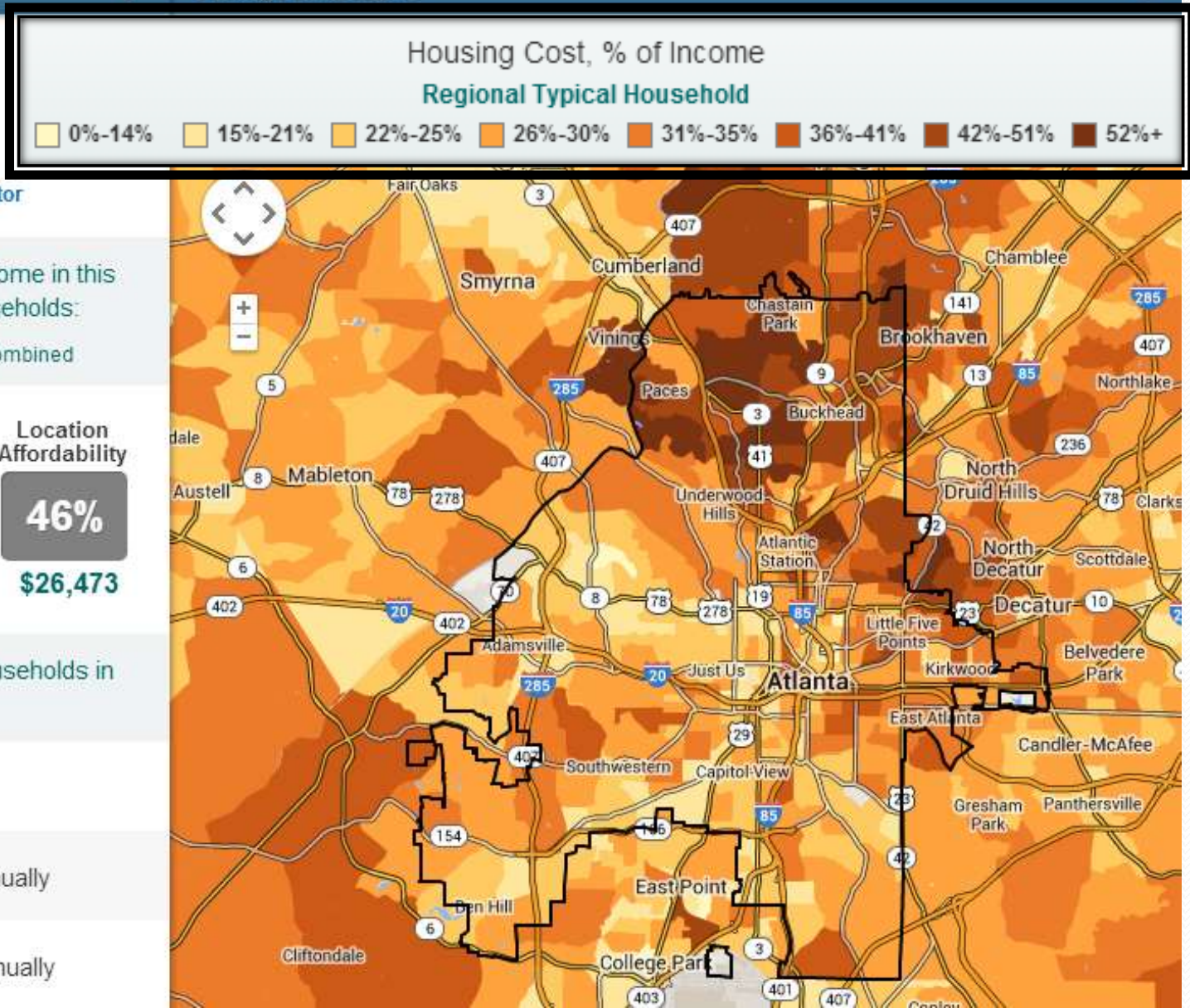
Housing		Transportation		Location Affordability
30%	+	16%	=	46%
$17,265		$9,208		$26,473

On average, Regional Typical Households in this location would:

Own **1.6** vehicles

Drive **16,144** miles annually

Take **301** transit trips annually



168 Wayside Dr Lawrenceville

Enter an address, intersection, city, county, state or zip code to add marker. Markers may be dragged to a new location.

Atlanta-Sandy Springs-Marietta, GA > Gwinnett County > Lawrenceville > 131350505462

Lawrenceville

Block Group 131350505462

Change Household Type

Regional Moderate

$46,040 annual income

2.69 people

1.21 commuters

View in **My Transportation Cost Calculator**

Average costs as a percent of income in this location for Regional Moderate Households:

Renter Owner Combined

Housing		Transportation		Location Affordability
29%	+	23%	=	52%
$13,352		$10,589		$23,941

On average, Regional Moderate Households in this location would:

Own **1.8** vehicles

Drive **21,329** miles annually

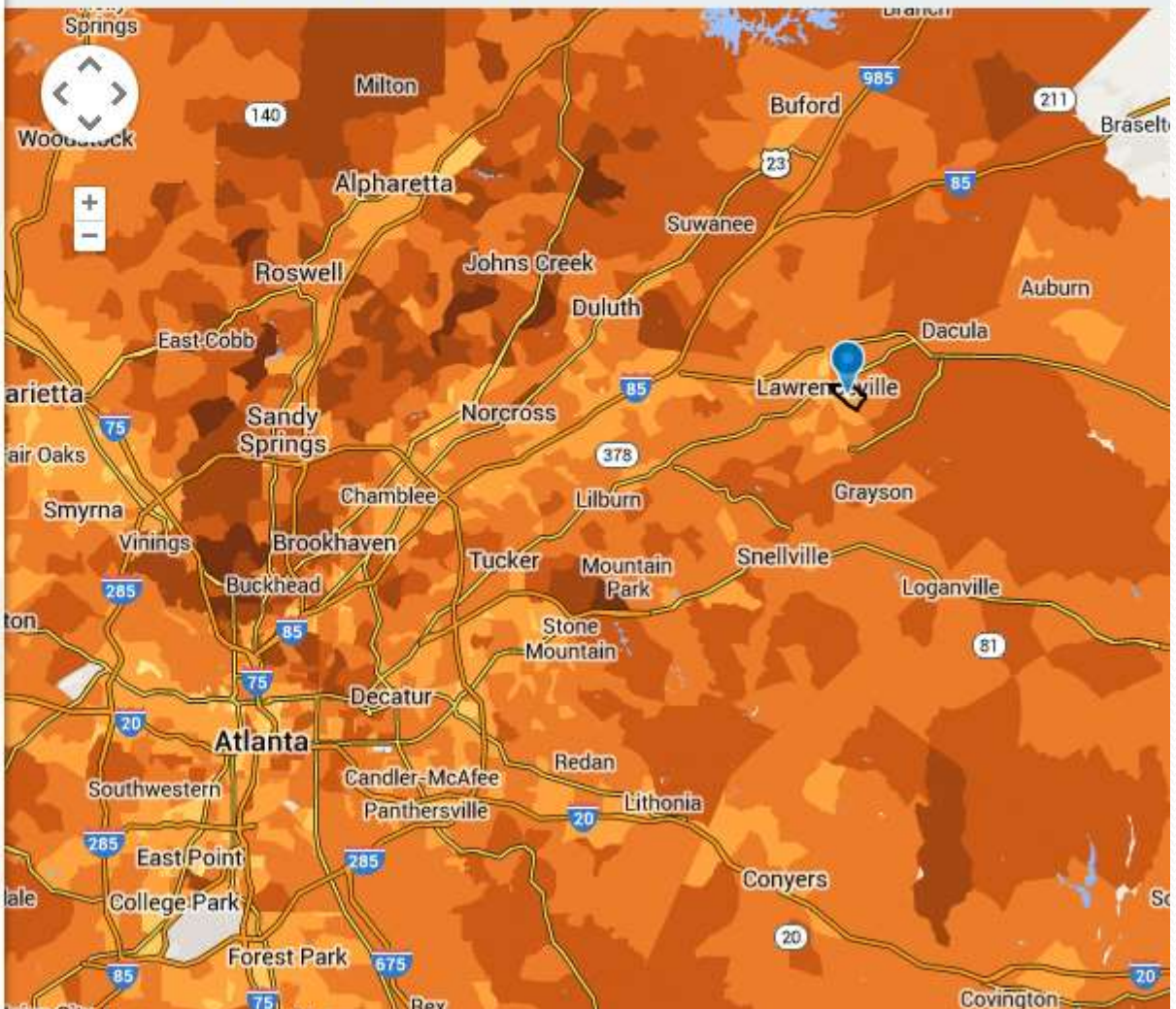
Take **52** transit trips annually

Change Map Type

Location Affordability (Housing and Transportation, % of Income)

Regional Moderate Household

0%-26% 27%-37% 38%-44% 45%-52% 53%-61% 62%-71% 72%-87% 88%+



141 Holiday Ave Northeast Atla

Enter an address, intersection, city, county, state or zip code to add marker. Markers may be dragged to a new location.

Atlanta-Sandy Springs-Marietta, GA > Fulton County > Atlanta > 131210031002

Atlanta

Block Group 131210031002

Change Household Type

Regional Moderate

$46,040 annual income

2.69 people

1.24 commuters

View in **My Transportation Cost Calculator**

Average costs as a percent of income in this location for Regional Moderate Households:

Renter | Owner | Combined

Housing		Transportation		Location Affordability
34%	+	18%	=	52%
$15,654		$8,287		$23,941

On average, Regional Moderate Households in this location would:

Own **1.5** vehicles

Drive **14,226** miles annually

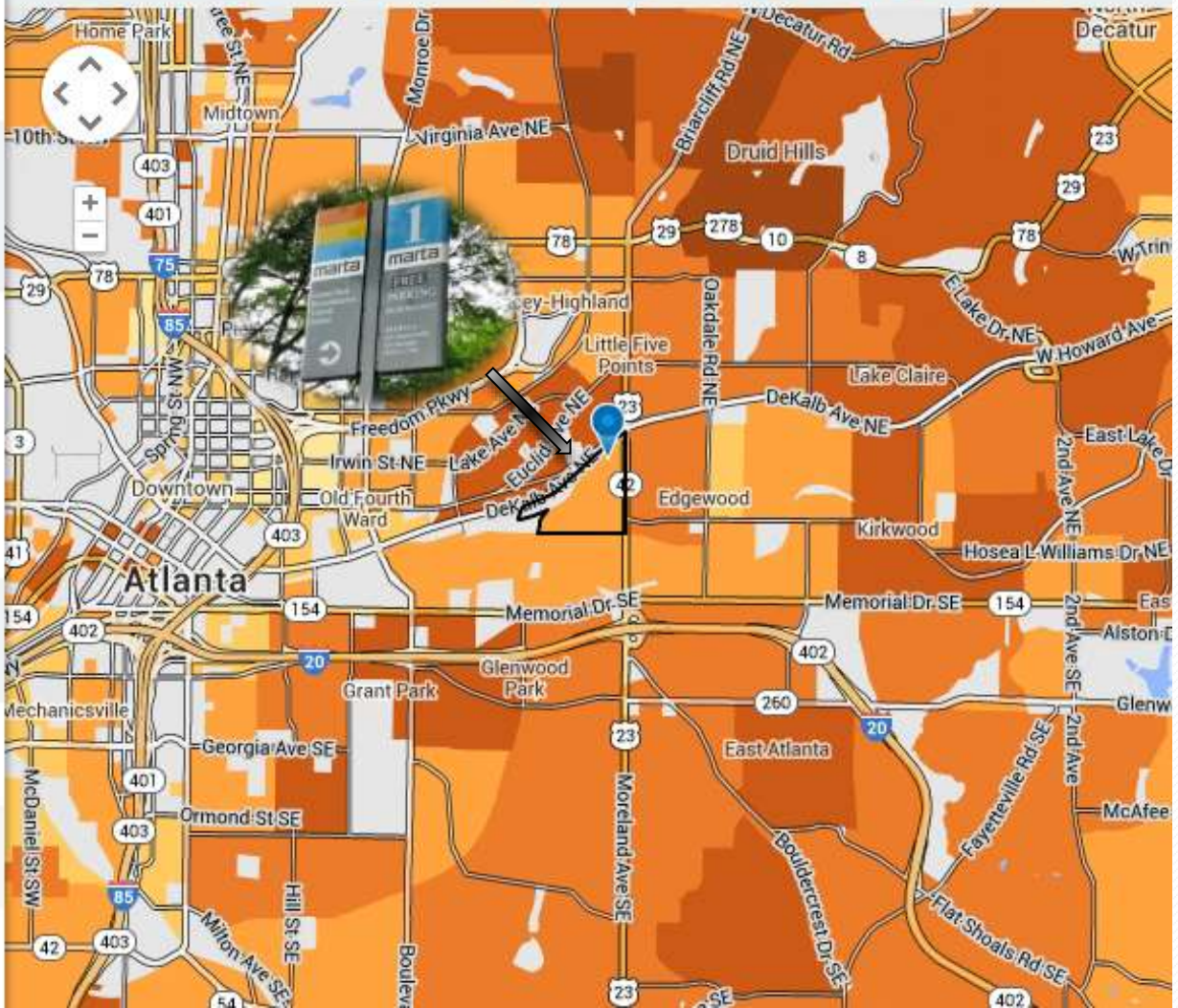
Take **433** transit trips annually

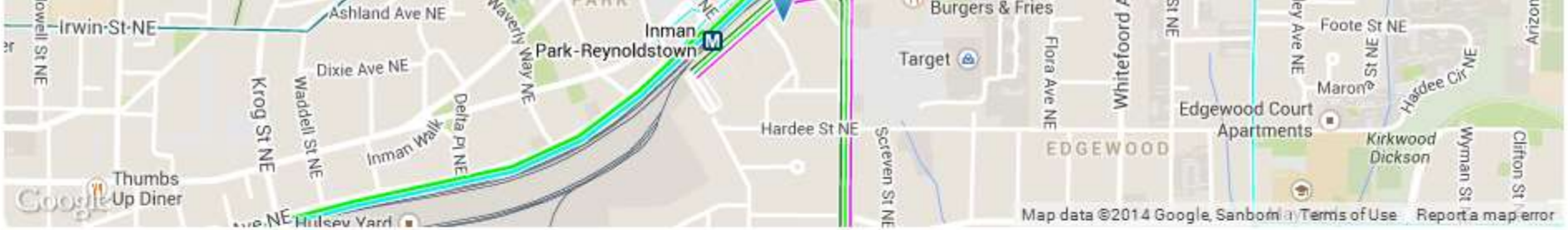
Change Map Type

Location Affordability (Housing and Transportation, % of Income)

Regional Moderate Household

0%-26% | 27%-37% | 38%-44% | 45%-52% | 53%-61% | 62%-71% | 72%-87% | 88%+





Locations	Your Household	Housing	Transportation	Total Housing and Transportation Cost
A 141 Holiday Avenue Northeast, Atlanta, GA 30307, USA	$0	$0	$0	**$0**

+ Add a new home address

A 141 Holiday Avenue Northeast, Atlanta, GA 30307, USA

Household | Housing | Vehicles | Driving | Transit Use | Results

This calculator will estimate your household housing and transportation costs for a given place based on its urban form and your household characteristics.

In each of the following tabs, the calculator will also report estimated values for a Similar Household - one that matches your household profile.

Please create your household profile.

Household Size:	4
Gross Annual Household Income:	$46,040
Workers who Commute:	2
My Household:	◉ Owns ○ Rents

NEXT » | SKIP TO RESULTS

Locations	Your Household	Housing	Transportation	Total Housing and Transportation Cost
A 141 Holiday Avenue Northeast, Atlanta, GA 30307, USA		$23,400	$6,060	$29,460

+ Add a new home address

A 141 Holiday Avenue Northeast, Atlanta, GA 30307, USA

Household | Housing | Vehicles | Driving | Transit Use | Results

HOUSEHOLD PROFILE	
Household Size	4
Gross Annual Household Income	$46,040
Workers who Commute	2
Tenure	Owner

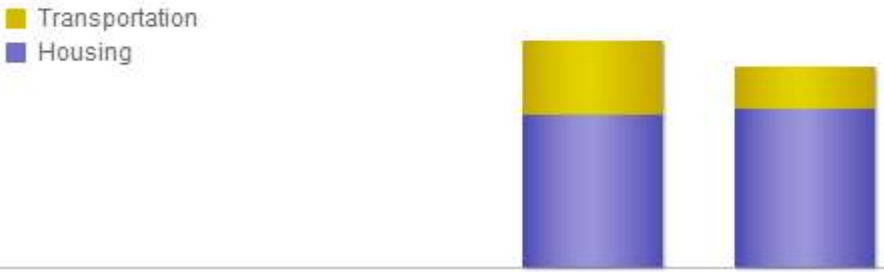
The LAI model estimates that the average household **with your profile** in this location would spend a combined **$33,432** in housing and transportation per year.

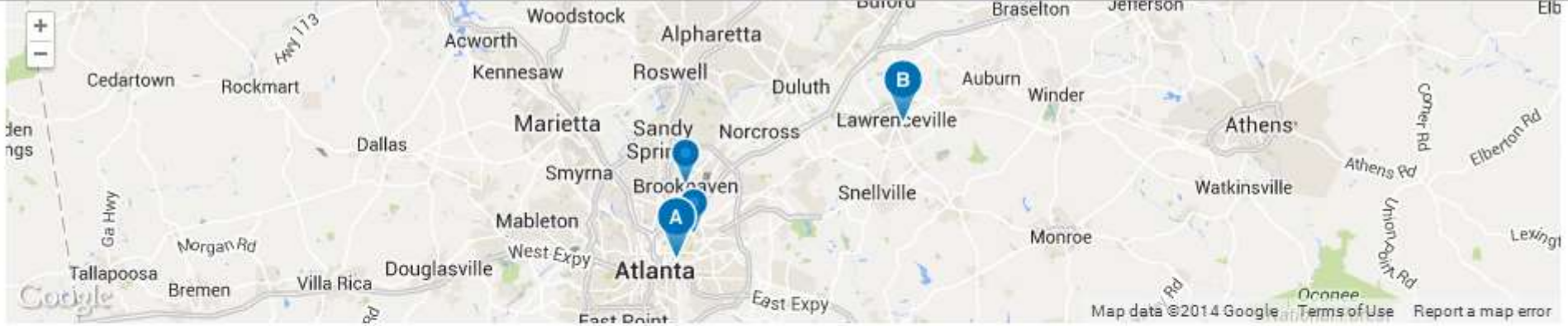
Your household would spend a combined $29,460 in housing and transportation per year.*

Find the **Location Affordability Index** for this location.

Show **monthly** values | Show **percent** of income

Annual Household Costs	Similar Household	Your Household
Vehicle Ownership Cost	$6,072	$3,528
Vehicle Usage Cost	$4,644	$1,332
Transit Cost	$324	$1,200
Total Transportation Costs	**$11,040**	**$6,060**
Total Housing Costs	**$22,392**	**$23,400**
Total Housing and Transportation Costs	**$33,432**	**$29,460**





Locations	Your Household	Housing	Transportation	Total Housing and Transportation Cost
A 141 Holiday Avenue Northeast, Atlanta, GA 30307, USA		$23,400	$6,060	$29,460
B 168 Wayside Drive, Lawrenceville, GA 30046, USA		$15,636	$28,404	$44,040

+ Add a new home address

B 168 Wayside Drive, Lawrenceville, GA 30046, USA

Household | Housing | Vehicles | Driving | Transit Use | Results

HOUSEHOLD PROFILE	
Household Size	4
Gross Annual Household Income	$46,040
Workers who Commute	2
Tenure	Owner

The LAI model estimates that the average household **with your profile** in this location would spend a combined **$30,120** in housing and transportation per year.

Show **monthly** values | Show **percent** of income

Annual Household Costs	Similar Household	Your Household
Vehicle Ownership Cost	$7,584	$7,056
Vehicle Usage Cost	$6,864	$21,312
Transit Cost	$36	$36
Total Transportation Costs	**$14,484**	**$28,404**
Total Housing Costs	**$15,636**	**$15,636**
Total Housing and Transportation Costs	**$30,120**	**$44,040**

Additional Resources

- For more information, please visit:
  - Partnership for Sustainable Communities: www.sustainablecommunities.gov
  - The Better Buildings Challenge: http://www4.eere.energy.gov/challenge/home
  - President's Climate Action Plan: http://www.whitehouse.gov/climate-change
  - HUD Office of Economic Resilience: www.hud.gov/resilience
  - Sustainable Communities Learning Network: www.sclearningnetwork.org

Contact Me

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