

# Green Communities The Next Generation

September 22, 2009



*Leading with Ideas*

DEMONSTRATING THROUGH ACTION

*Transforming with Capital*

SUSTAINING THROUGH POLICIES AND PARTNERSHIP



# Transforming Affordable Housing



# Transforming Affordable Housing



# Extending Enterprise's Vision



***“What ought to be, can be, if we have the will to make it so.”***  
**- James W. Rouse**

# Changing Lives . . .



# . . . And Changing Businesses



# Keeping Families Healthy



**“All we’ve ever wanted was to be able to provide for our children. To give them a nice place to grow up. We can do that here . . . Since we moved here, we’ve all been so much healthier. Every day, I’m like, ‘Thank you, thank you, thank you.’ Living here has been so positive for my family.”**

**Nicki Alhagi, Oleson Woods  
Resident  
Portland, OR**

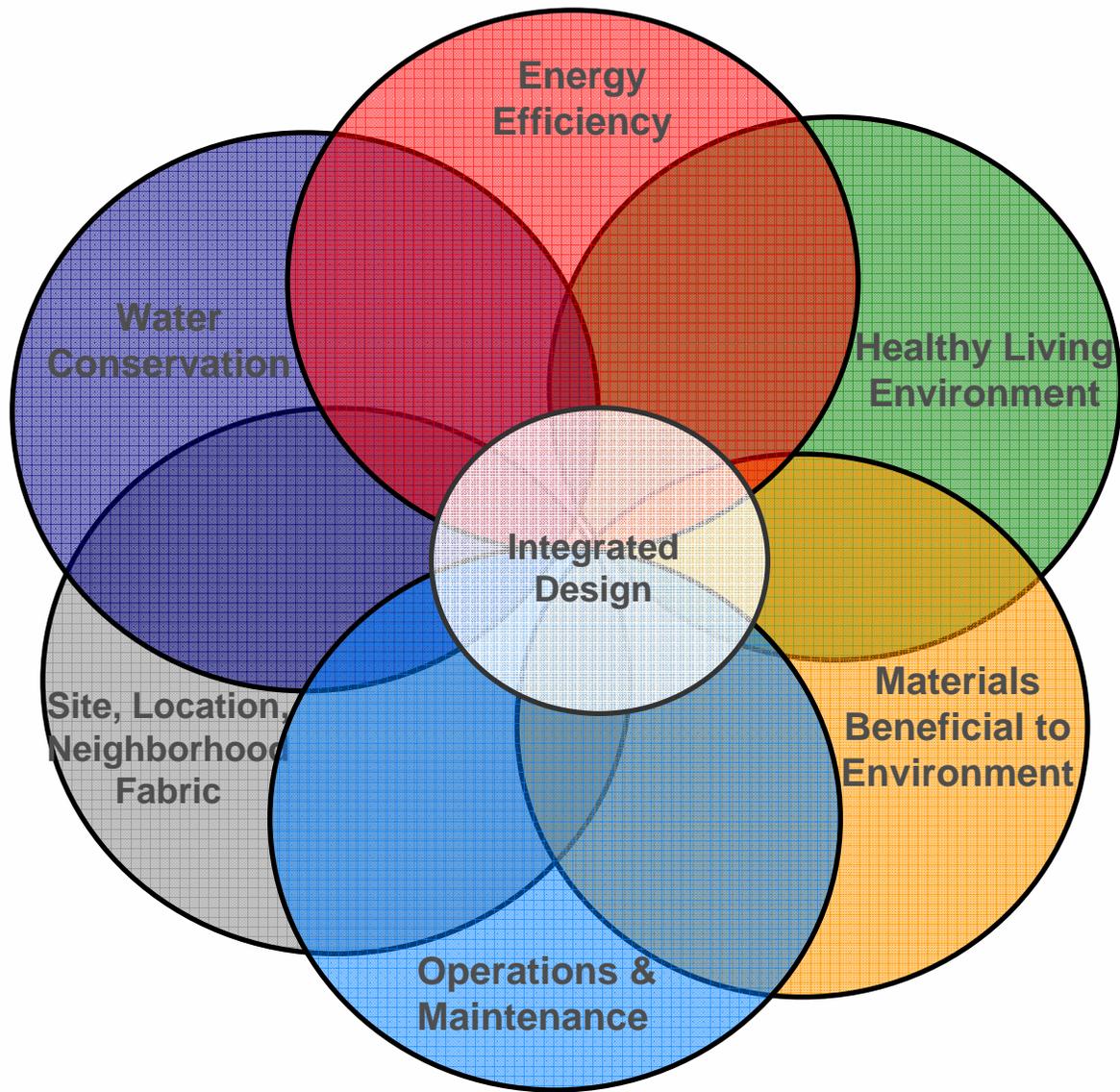
# Giving Developers New Tools



***“It is easy to be green. [We] will help revitalize our economy by making energy efficiency practices more affordable, accessible and achievable by consumers, businesses and government entities. By prioritizing energy efficiency practices, we can ease the woes of homeowners, lenders, financial markets, builders and our environment.”***

**- Representative Ed Perlmutter (D-Colo)**

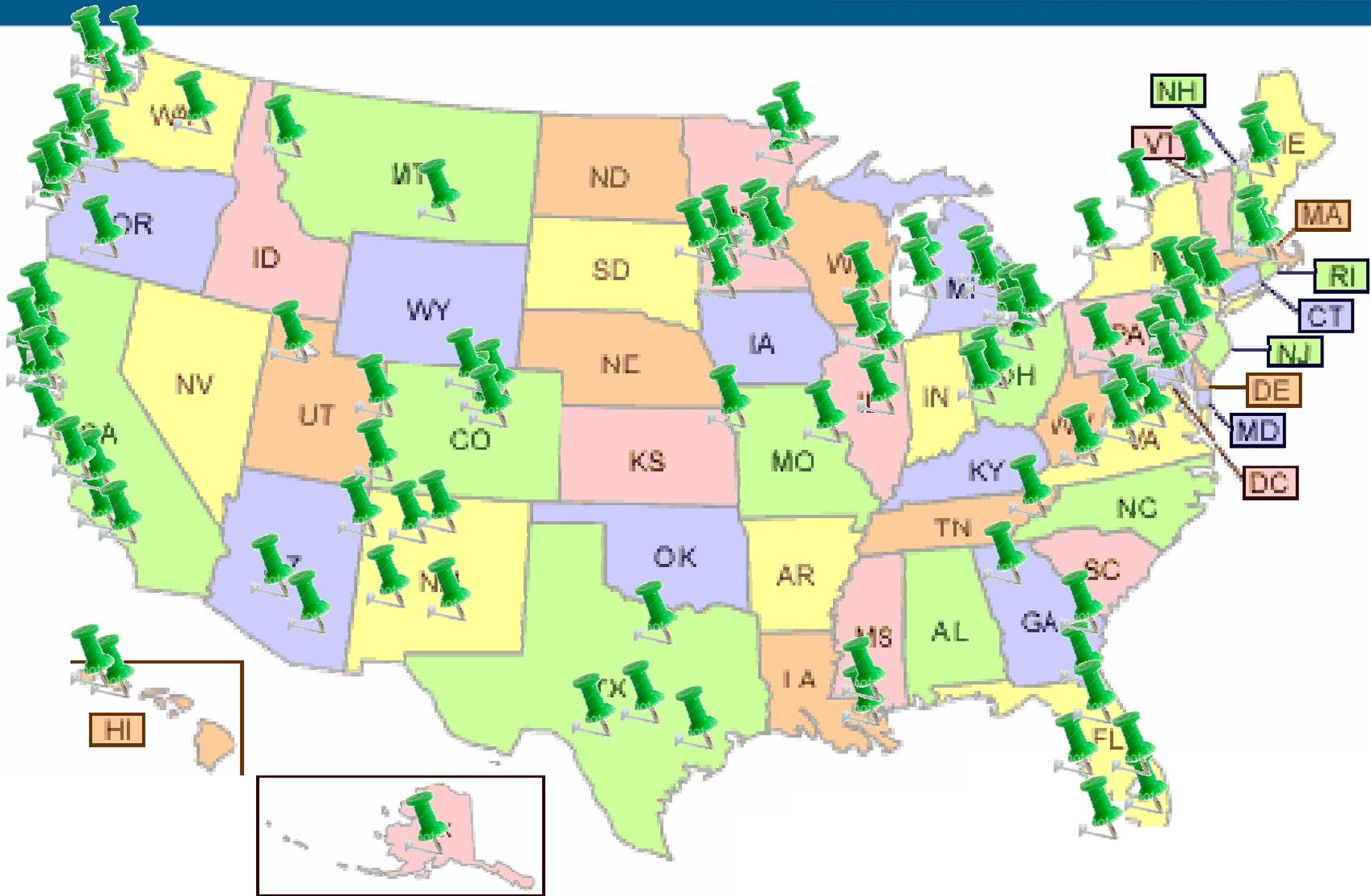
# Green Communities Criteria



# Going Green Is In Our Hands



# Results at Work



# San Francisco



# Chicago



# New York



# Laurel Village - Spokane, WA



# Wentworth Commons - Chicago, IL



# 33 Powell Street - Portland, OR



# The Meadows at Oldwick - Whitehouse Station, NJ



# Central Park at Stapleton - Denver, CO



# Galen Terrace - Washington, DC



# Oleson Woods - Tigard, OR



# Trolley Square - Cambridge, MA



# Kingsbury Place - Walker, MI



09/05/2006

# Chuska Apartments - Gallup, NM



# Evergreen Park Apartments - Potsdam, NY



# Roanoke Lee Street Project - Blacksburg, VA



# Spring Terrace - Austin, TX



# Parmenter Circle - Madison, WI



# University Estates - Atlanta, GA



# Holland Apartments - Danville, IL



# The Wellstone - Minneapolis, MN



# Petersburg Commons - Duncannon, PA



# Azotea - Alamagordo, NM



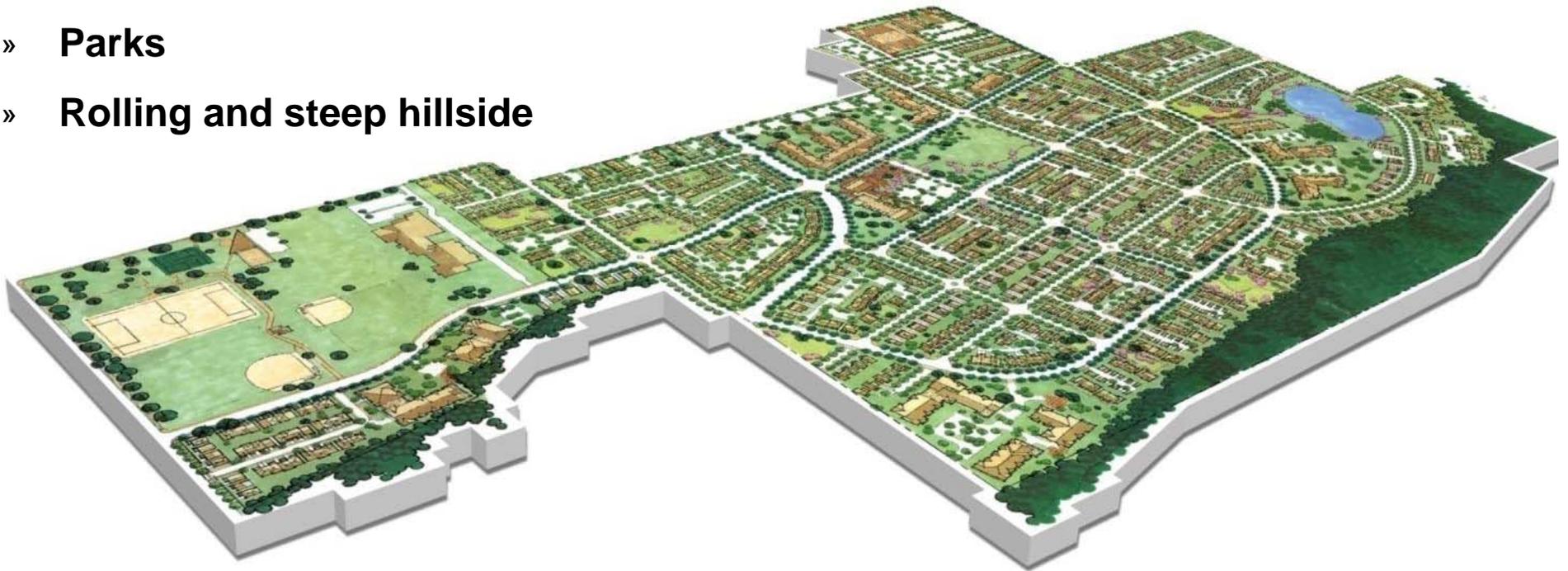
# Madrone Plaza - Morgan Hill, CA



# Orchard Gardens - Missoula, MT



- » **120 acres**
- » **1,700 total units**
  - **350 public housing**
  - **984 market rate**
  - **250 workforce**
  - **75 low income senior**
- » **30,000 GSF office/commercial space**
- » **Parks**
- » **Rolling and steep hillside**



**High Point**  
Seattle, Washington

**Seattle Housing Authority**

# Storm Water Treatment

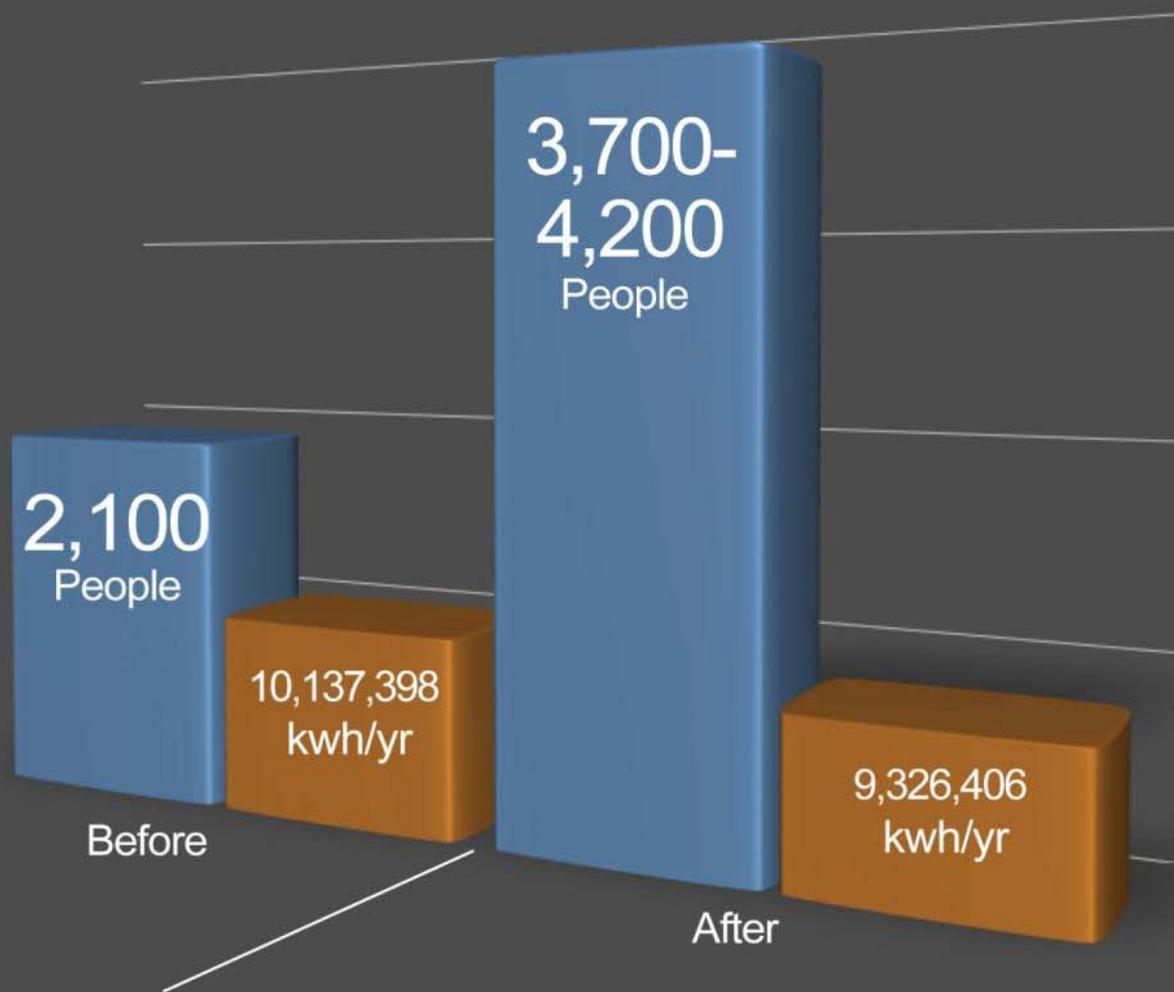
## Success Story!

- » Vision: A natural meadow storm water cleansing/retention process
- » 120 Acres + 1700 units + hardscape + clay @ 3' would typically require +/- 9 acres of retention pond
- » Since treatment was handled over the surface of the total site, the High Point storm water system required only 5 acre of pond retention

# Storm Water Treatment

## Success Story!

- » Do the math!
  - 9 required acres – 5 needed acre = 4 saved acres
  - 4 saved acres of site x 18 avg. dua. for townhouse lots = 72 add'l lots
  - \$2,670,000 (added cost of surface storm water system over standard code processes) / 72 additional lots = \$37,000 system added cost per lot
  - \$50,000 (lot market value) - \$37,000 (added lot cost) = \$13,000 x 72 lots = \$936,000 profit to bottom line

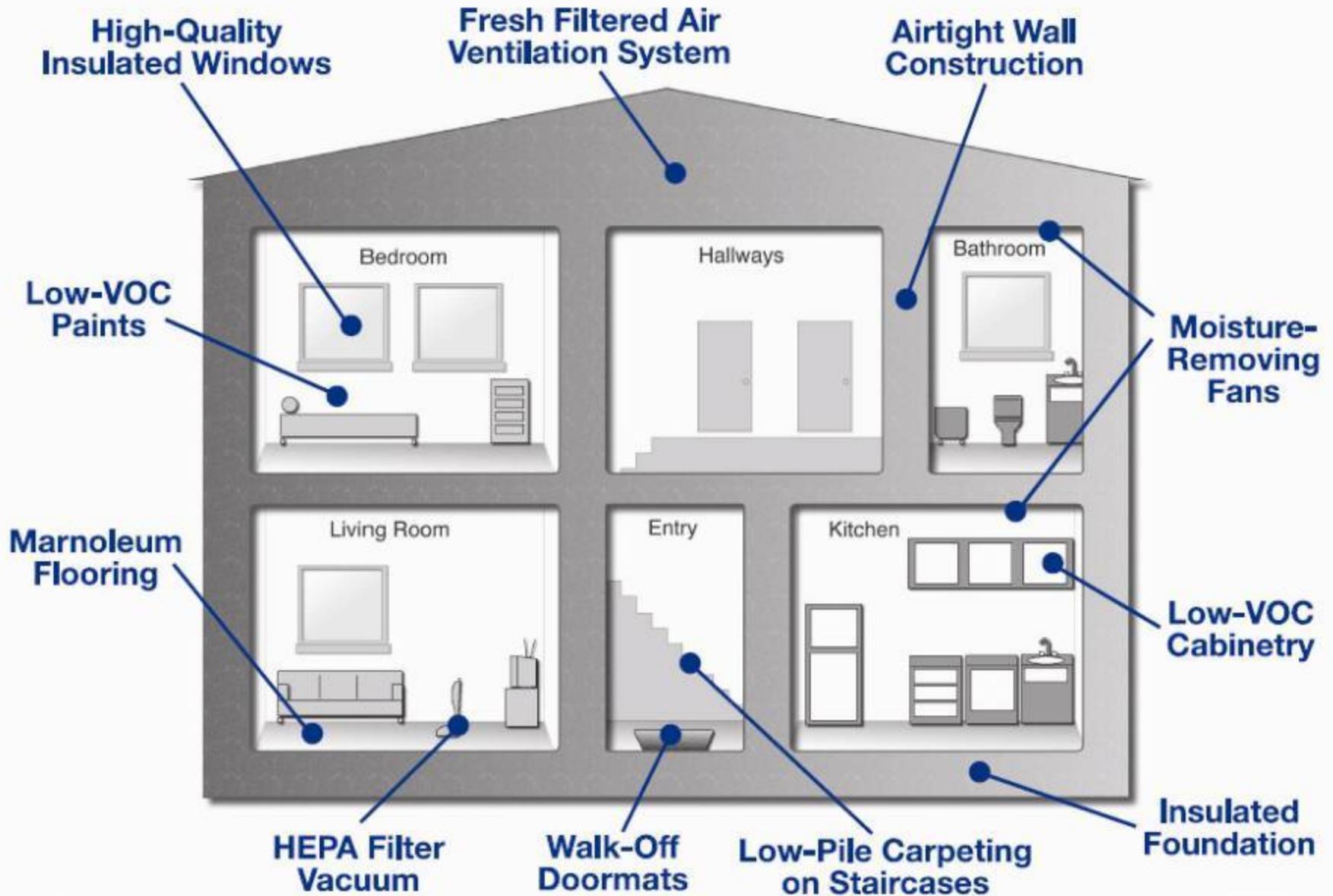


Neighborhood Energy Use  
More People - Less Energy



# HIGH POINT

Breathe-easy Homes:  
Health benefits of sustainable  
building design



**Slides Courtesy of Tom Phillips, Seattle Housing Authority  
Breathe Easy Homes**

# Health Improvements



## Symptom-free days

(in a 2 week period)

Old Home:  
7.6 days

New Home:  
12.4 days

## Urgent Clinical Care Visits

(total number of unplanned visits for group in one year period)

Old Home:  
61.8

New Home:  
20.6

## Caretaker Quality of Life

(on a scale of 1 to 10)

Old Home:  
5.0

New Home:  
5.8

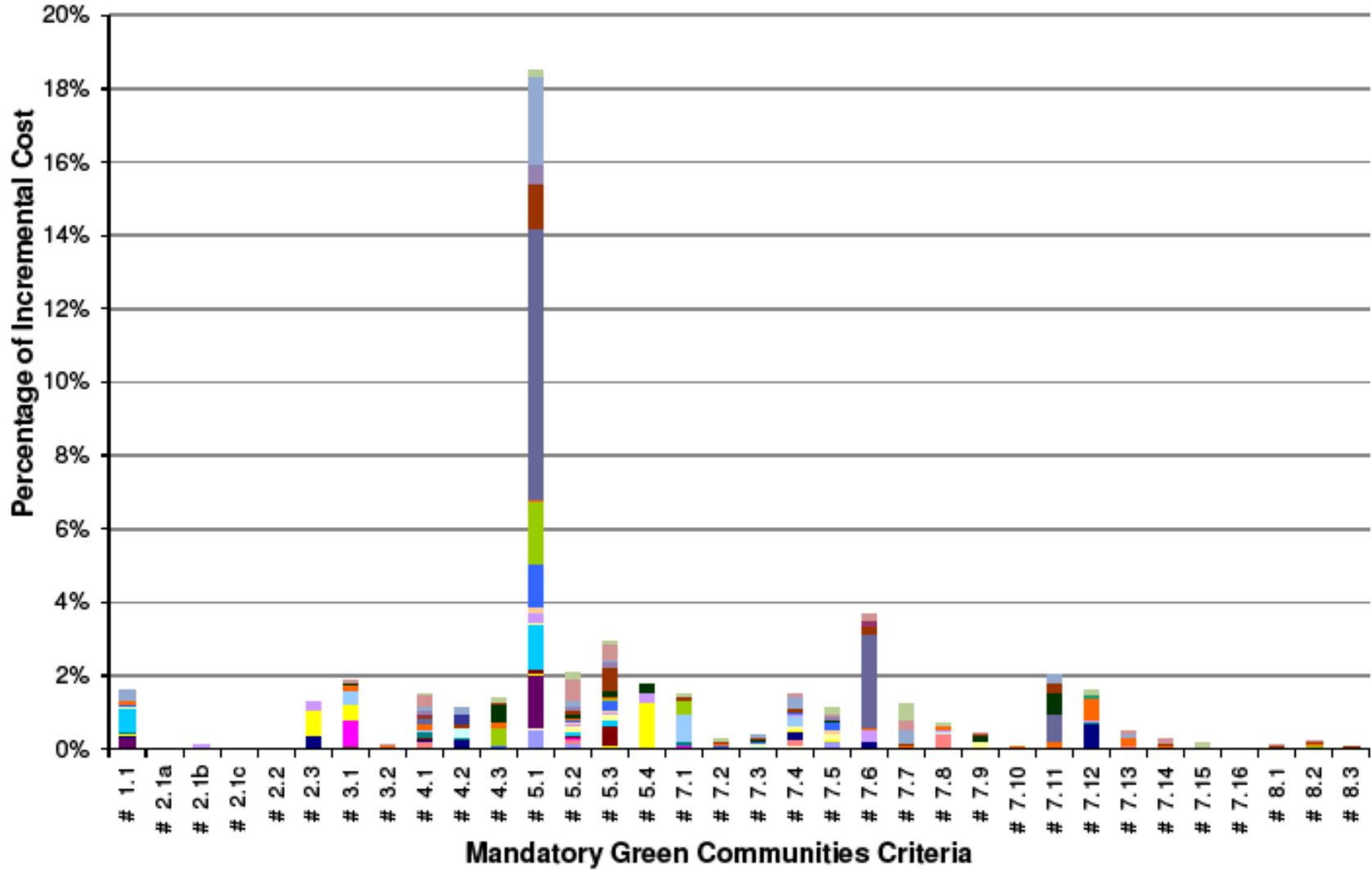
## Common Questions



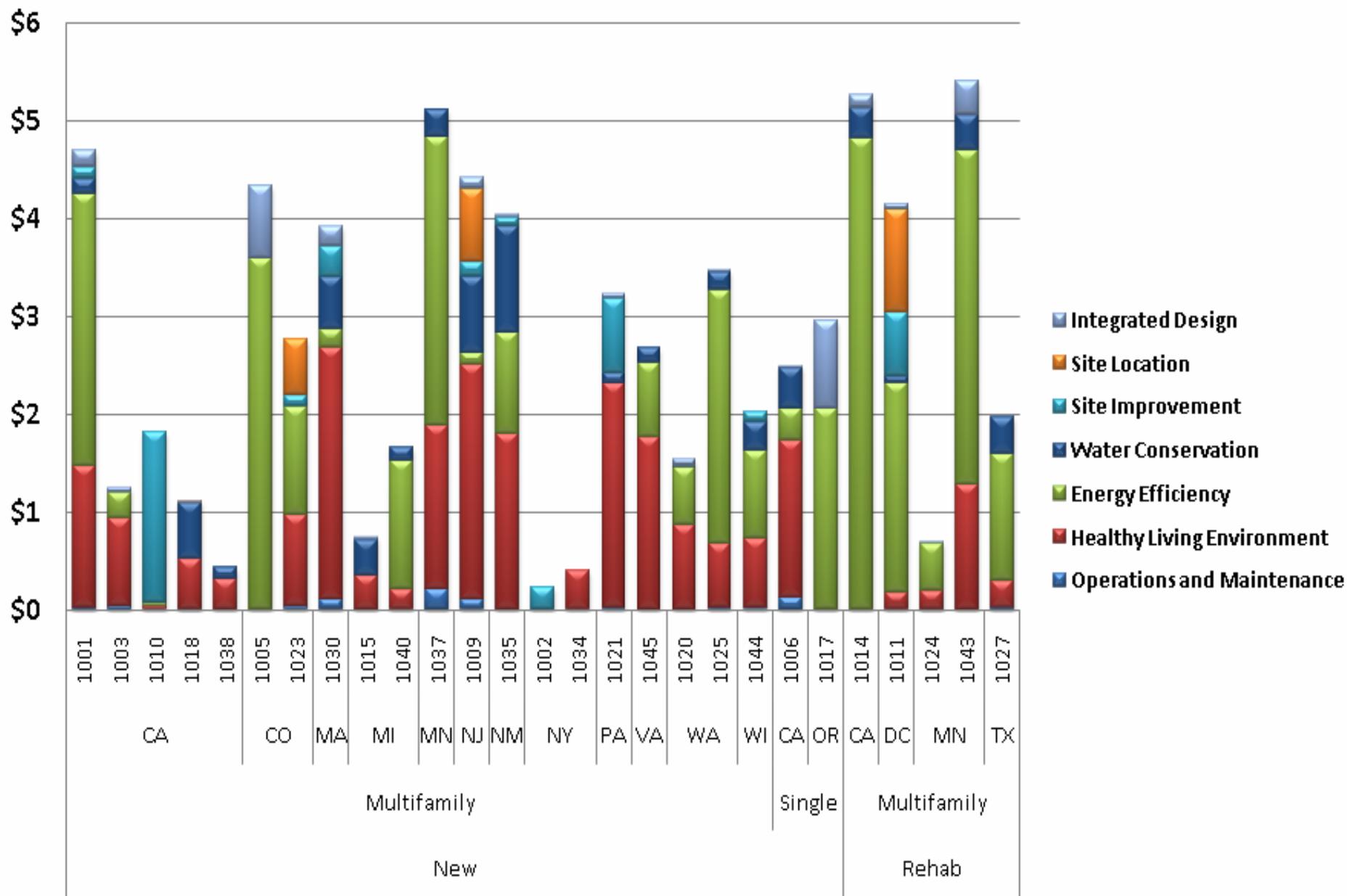
- **Does going green sacrifice number of units?**
- **How do tenants play a role?**
- **Can green affordable housing be approved faster?**
- **What does it cost to go green?**



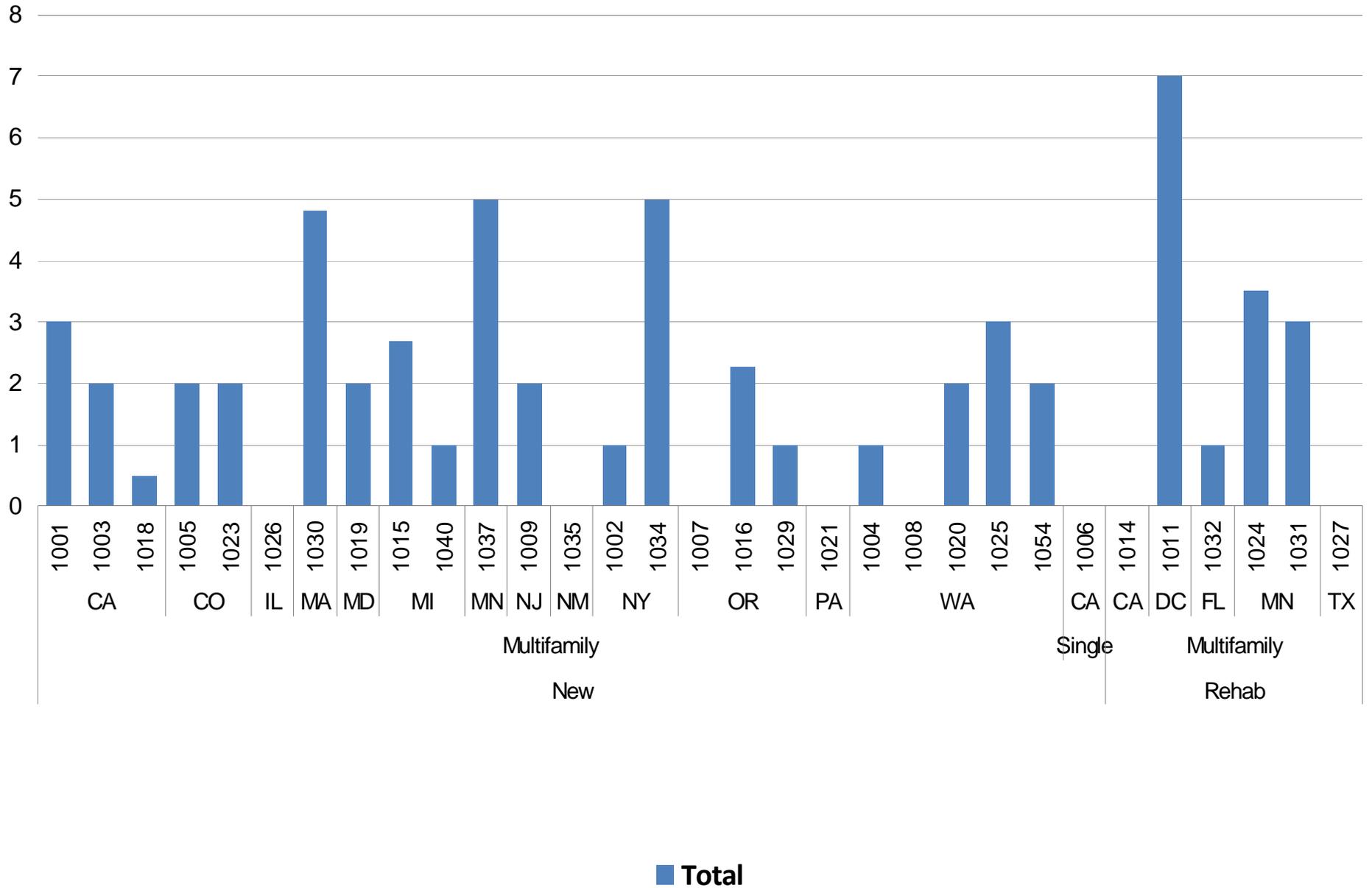
## Normalized Distribution of Incremental Cost to Meet Each Mandatory Green Communities Criteria



## Incremental Cost to Meet Mandatory Green Communities Criteria (\$/SF)



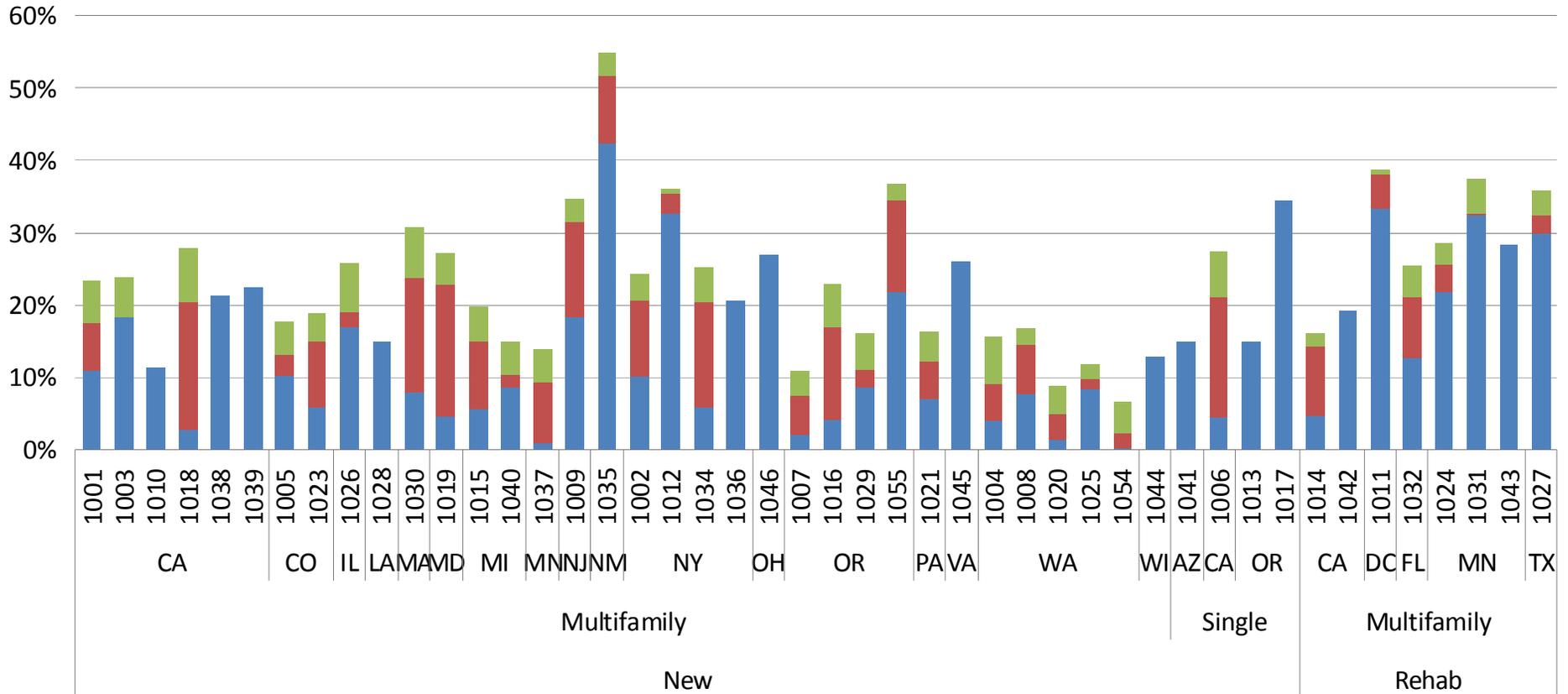
# Number of Envelope Upgrades Above Local Code in Design





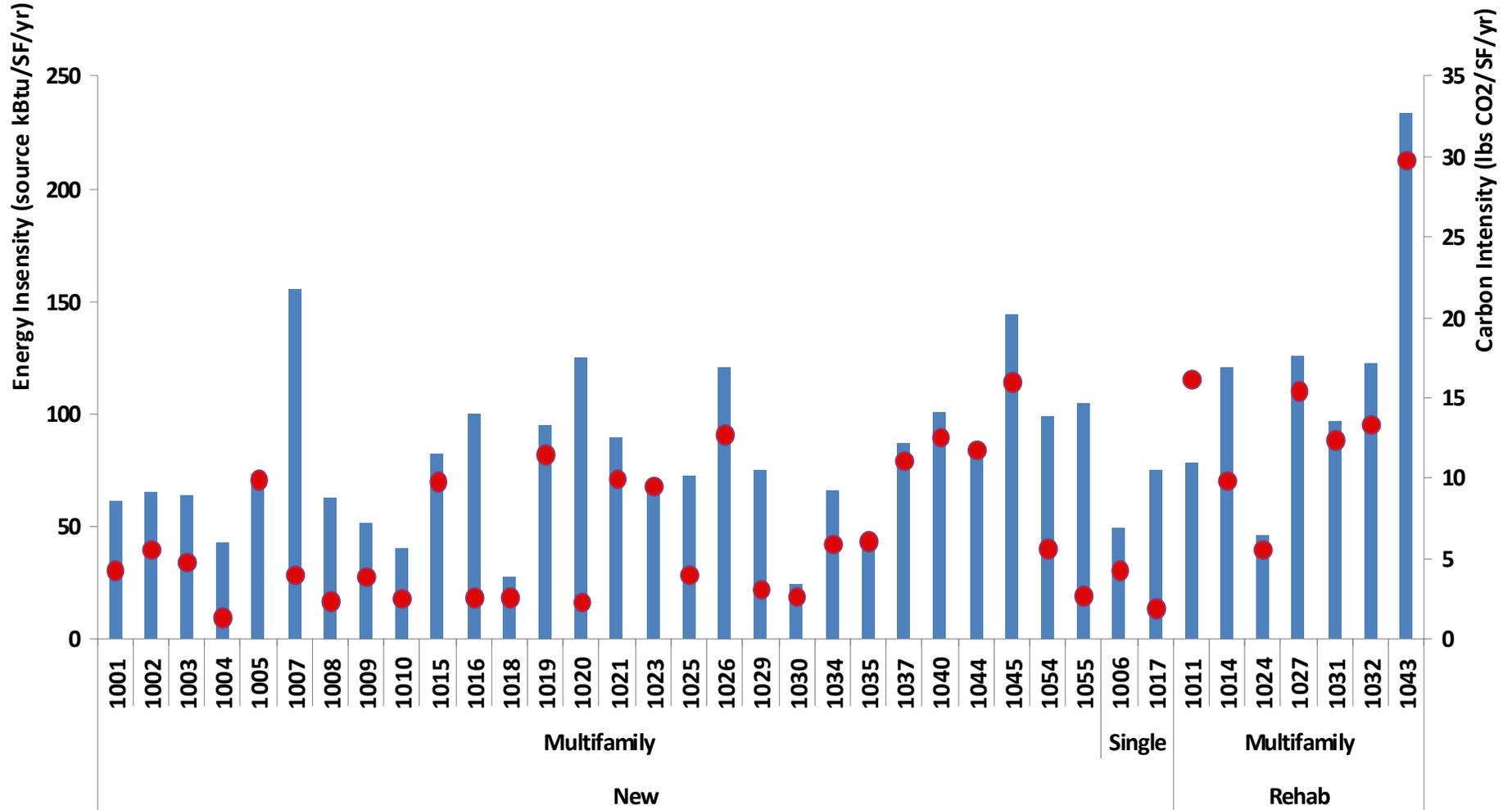


# Annual Energy Savings for Meeting Mandatory Green Communities Energy Criteria (Percentage over Baseline)



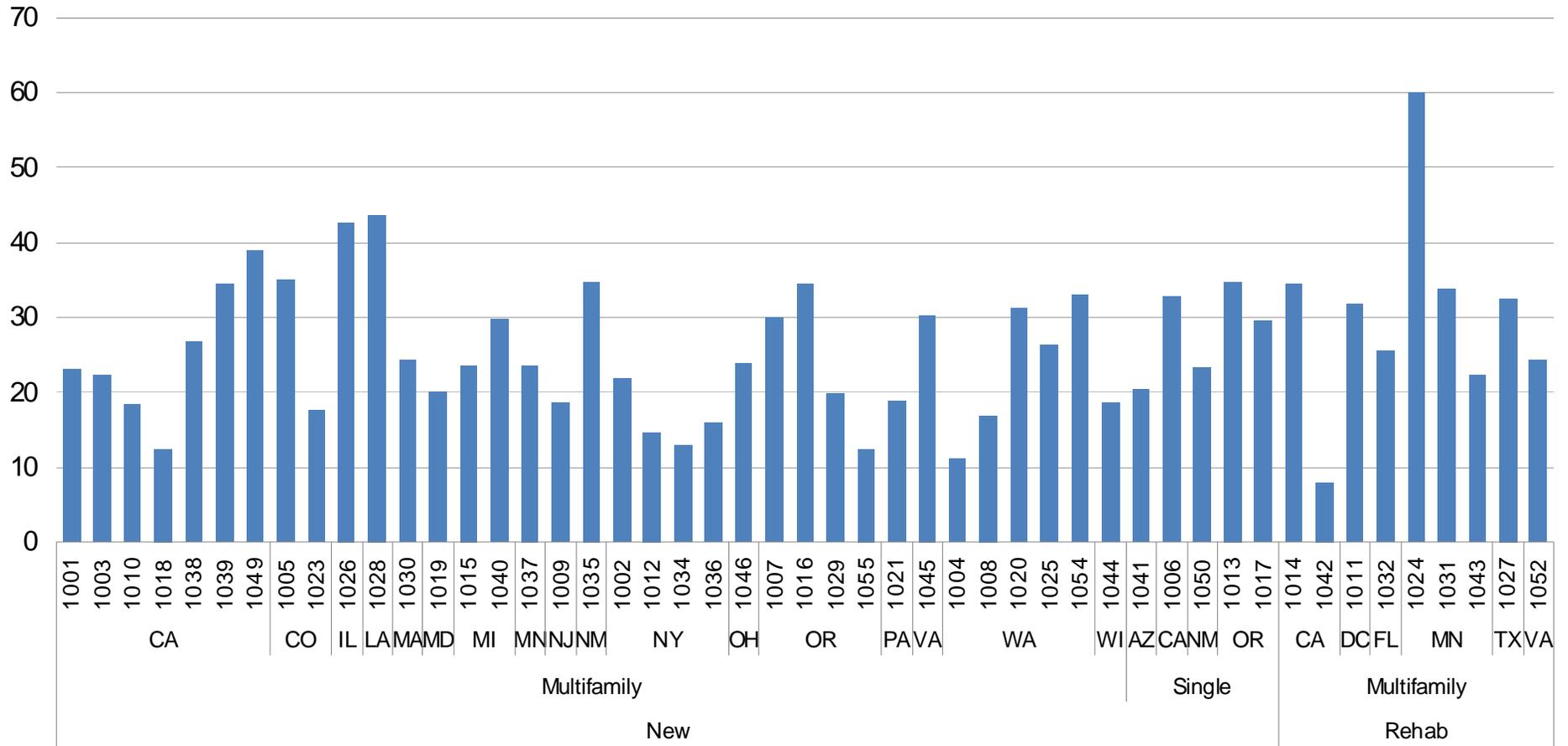
■ Energy Savings not including Appliances & Lighting 
 ■ Efficient Lighting 
 ■ Energy Star Appliances

# Source Energy & Carbon Intensities of Green Communities Developments



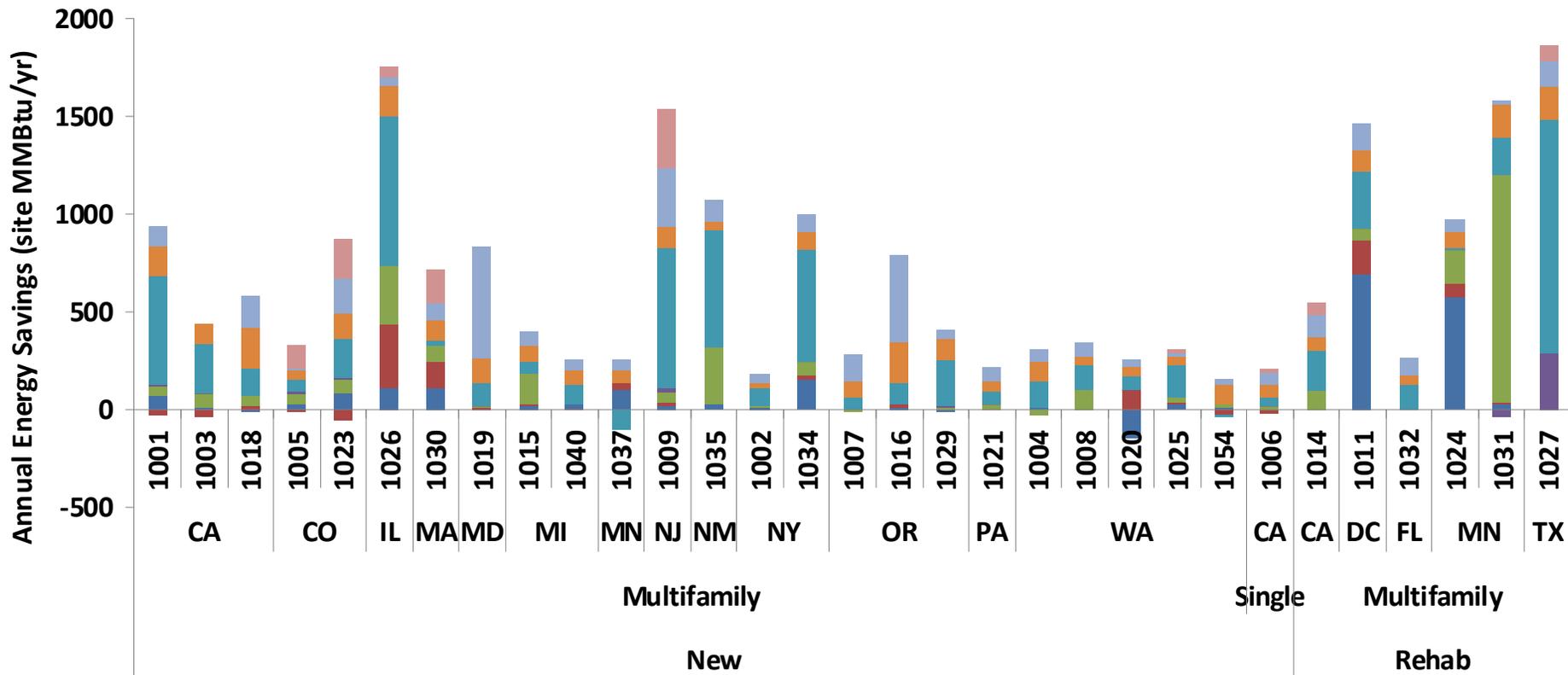
■ Energy Intensity (source kBtu/SF/yr) ● Carbon Intensity (lbs CO2/SF/yr)

# Water Intensity of Green Communities Developments (Gallons/SF/yr)



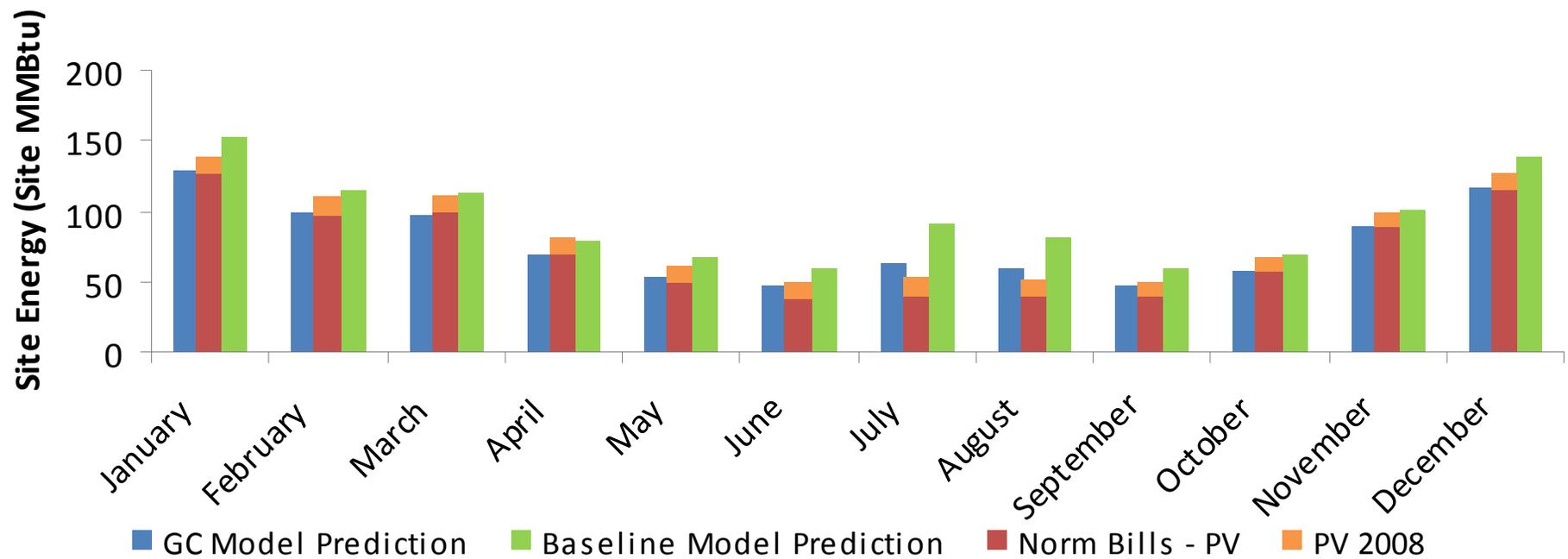
■ Total

## Breakdown of Predicted Annual Energy Savings for Developments Modeled in TREAT



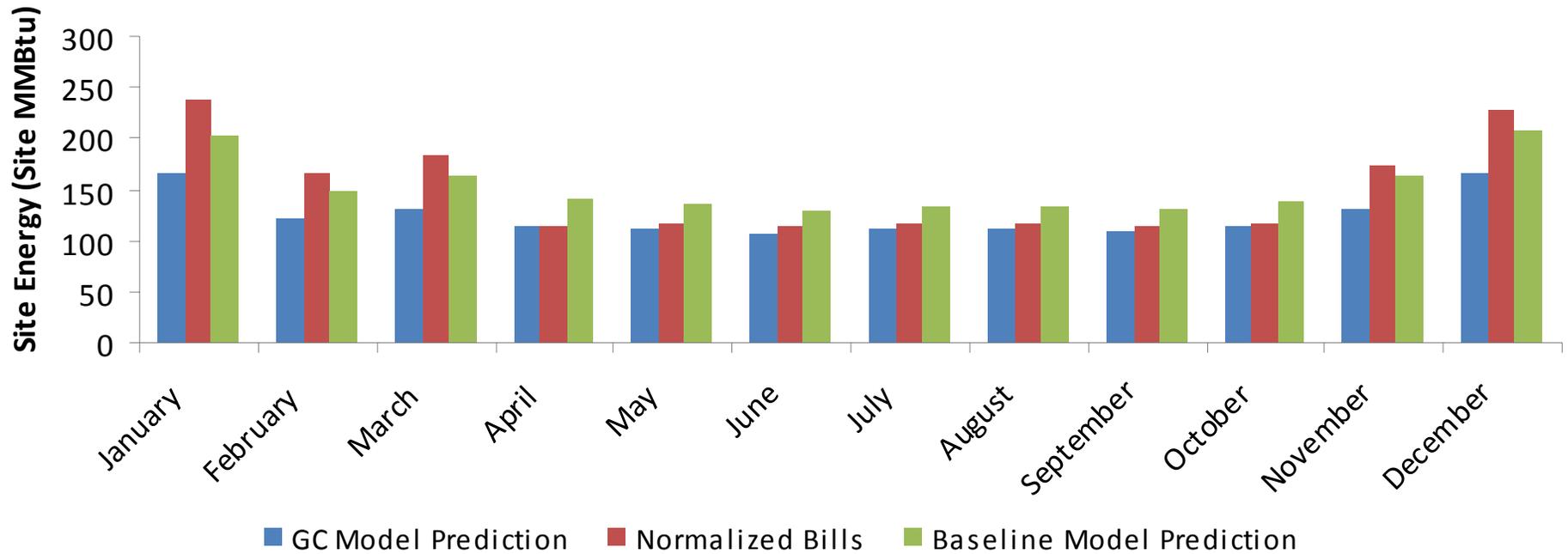
- Surface Improvements
- Fenestration Improvements
- Heating System Improvements
- Cooling System Improvements
- DHW System Improvements
- Energy Star Appliances
- Lighting Improvements
- Renewable Energy

# Central Park - Whole Development Normalized Energy Usage



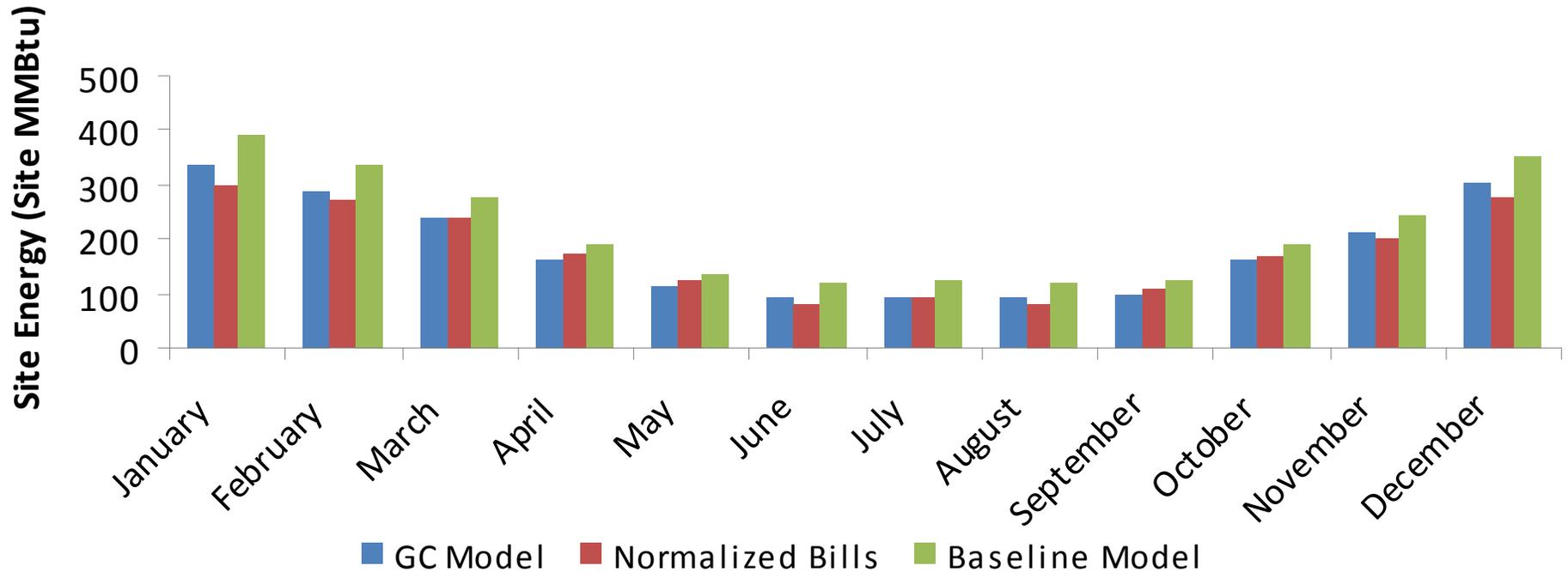
**Predicted Annual Energy Savings = 17%    Actual Annual Energy Savings = 11%**

# Denny Park- Whole Development Normalized Energy Usage



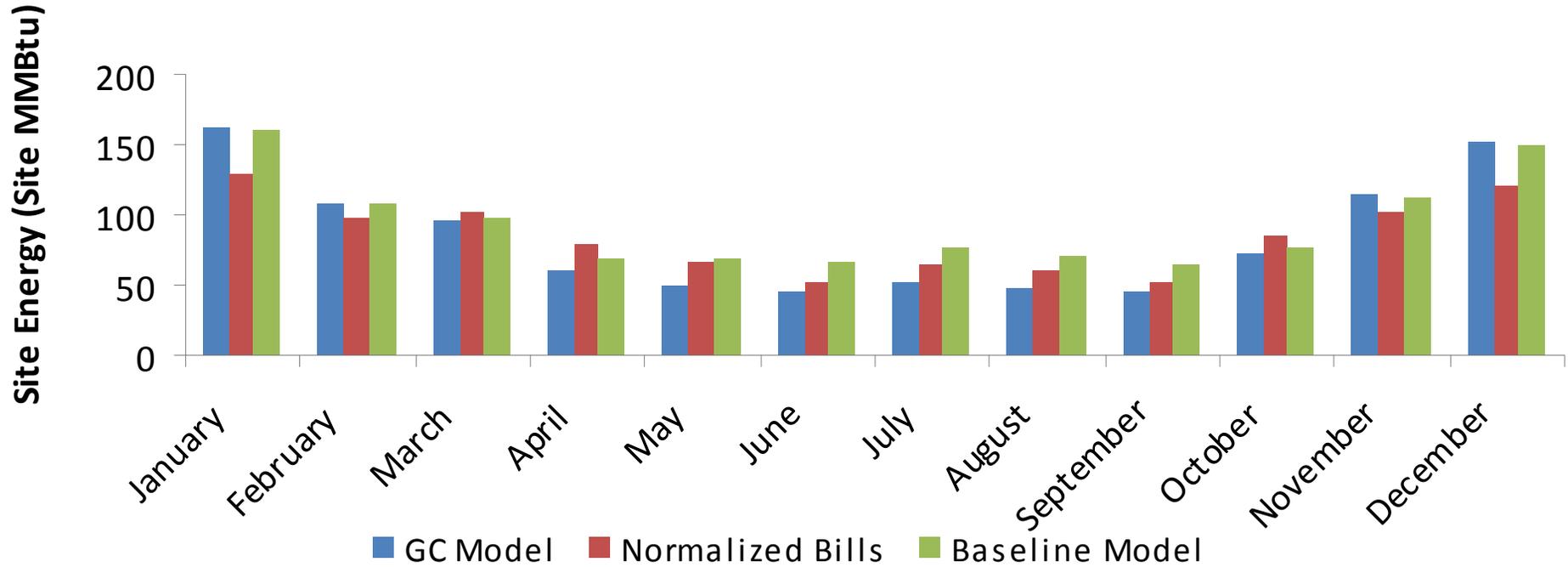
**Predicted Annual Energy Savings = 19%    Actual Annual Energy Savings = 2%**

# Kingsbury Place - Whole Development Normalized Energy Usage



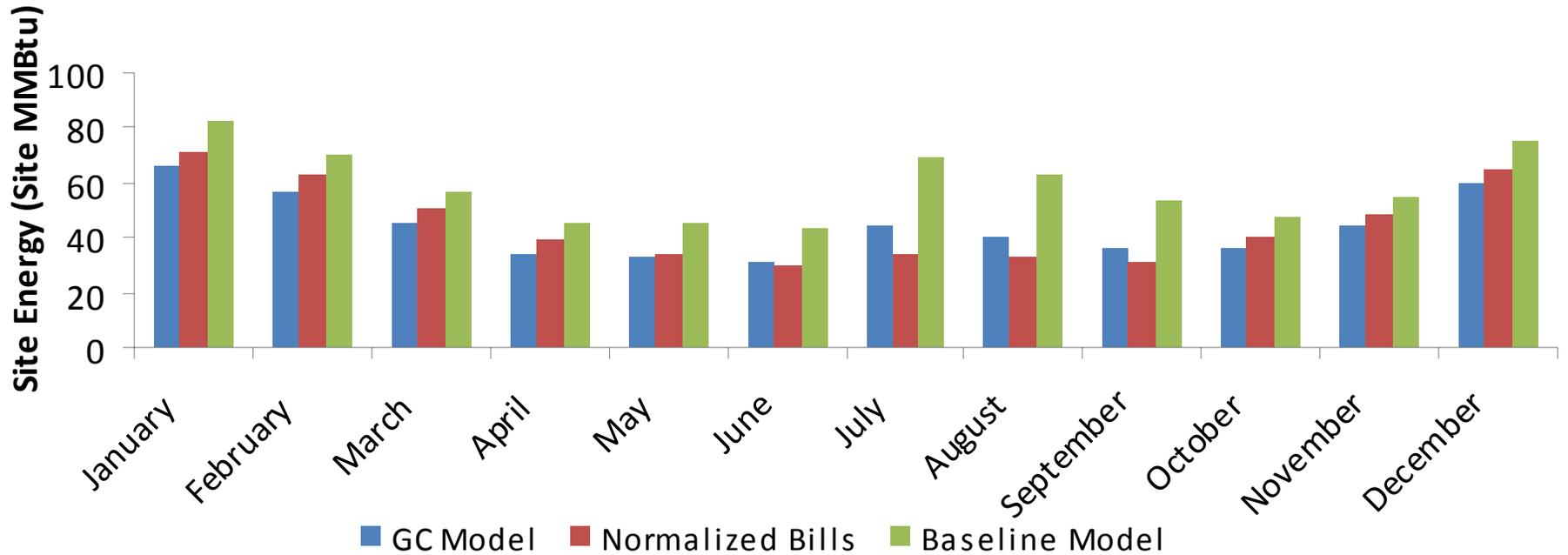
**Predicted Annual Energy Savings = 15%    Actual Annual Energy Savings = 19%**

# Pear Tree Place - Whole Development Normalized Energy Usage



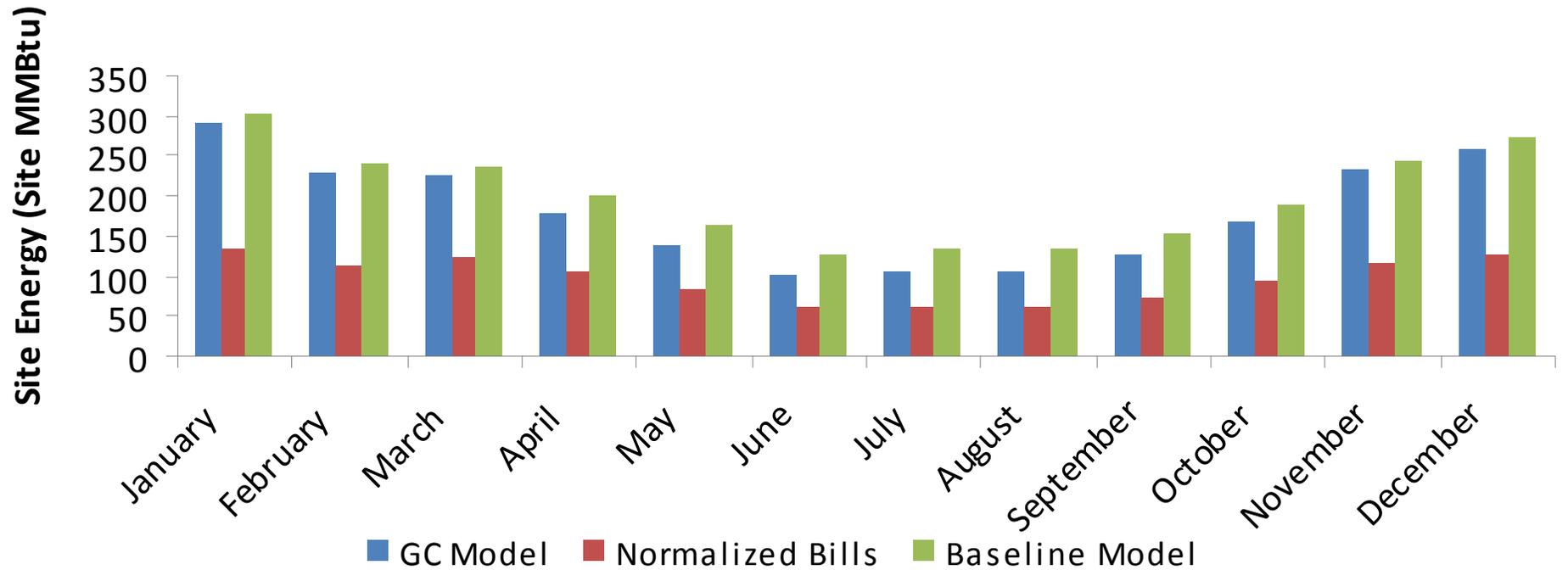
**Predicted Annual Energy Savings = 10%    Actual Annual Energy Savings = 10%**

# Roanoke & Lee - Whole Development Normalized Energy Usage



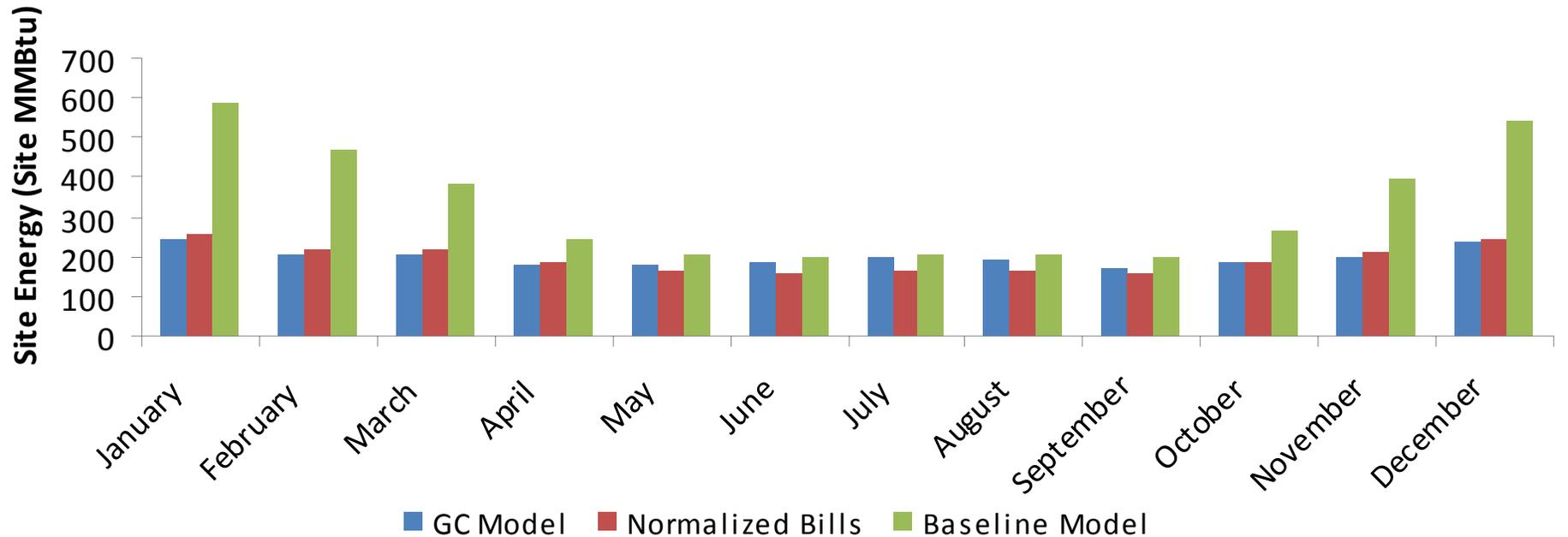
**Predicted Annual Energy Savings = 25%    Actual Annual Energy Savings = 24%**

# Colonia Amistad - Whole Development Normalized Energy Usage



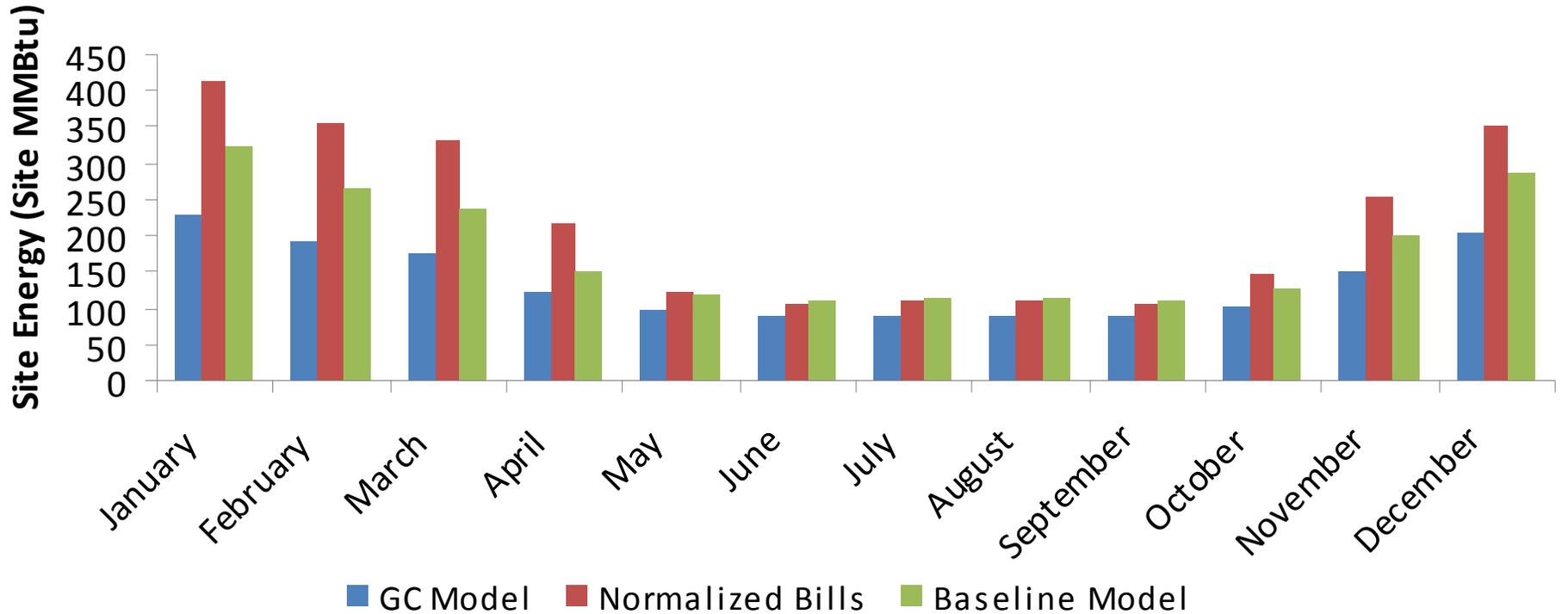
**Predicted Annual Energy Savings = 10%    Actual Annual Energy Savings = 52%**

# Viking Terrace - Whole Development Normalized Energy Usage



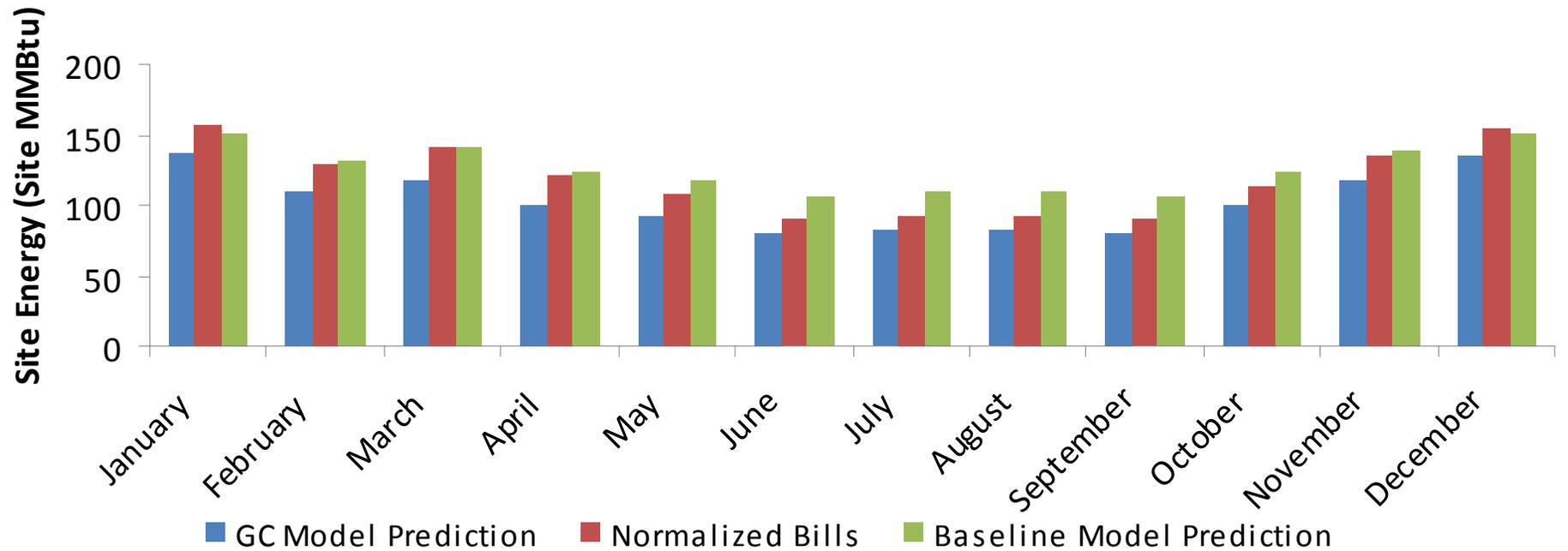
**Predicted Annual Energy Savings = 39%    Actual Annual Energy Savings = 40%**

# Trolley Square - Whole Development Normalized Energy Usage



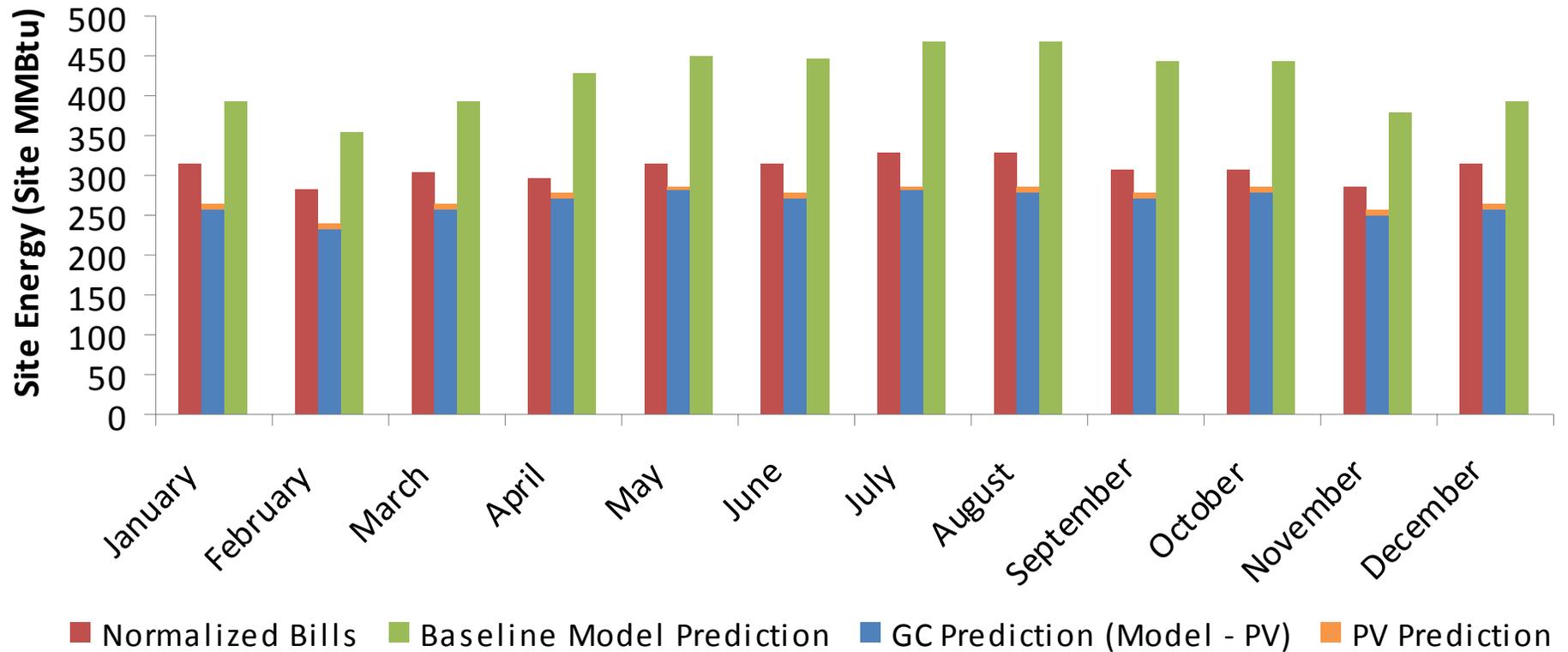
**Predicted Annual Energy Savings = 24%    Actual Annual Energy Savings = - 22%**

# Broadway -Whole Development Normalized Energy Usage



**Predicted Annual Energy Savings = 18%    Actual Annual Energy Savings = 6%**

# Spring Terrace - Whole Development Normalized Energy Usage



**Predicted Annual Energy Savings = 37%    Actual Annual Energy Savings = 27%**



## On Average to meet the Criteria it costs....



### Across 48 Projects:

- **\$3 per square foot**
- **1.4% premium**

### Spring Terrace

- Incremental Costs for Energy - \$122,229
- Internal Rate of Return – 20%
- NPV - \$166,540
- Simple Payback – 5.4 years
- Discounted Payback – 7.0 years

## Next...



- Performance
- Products
- Policy
- ~~Procrastination~~



# QUESTIONS??



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