



# REGIONAL INDICATORS INITIATIVE

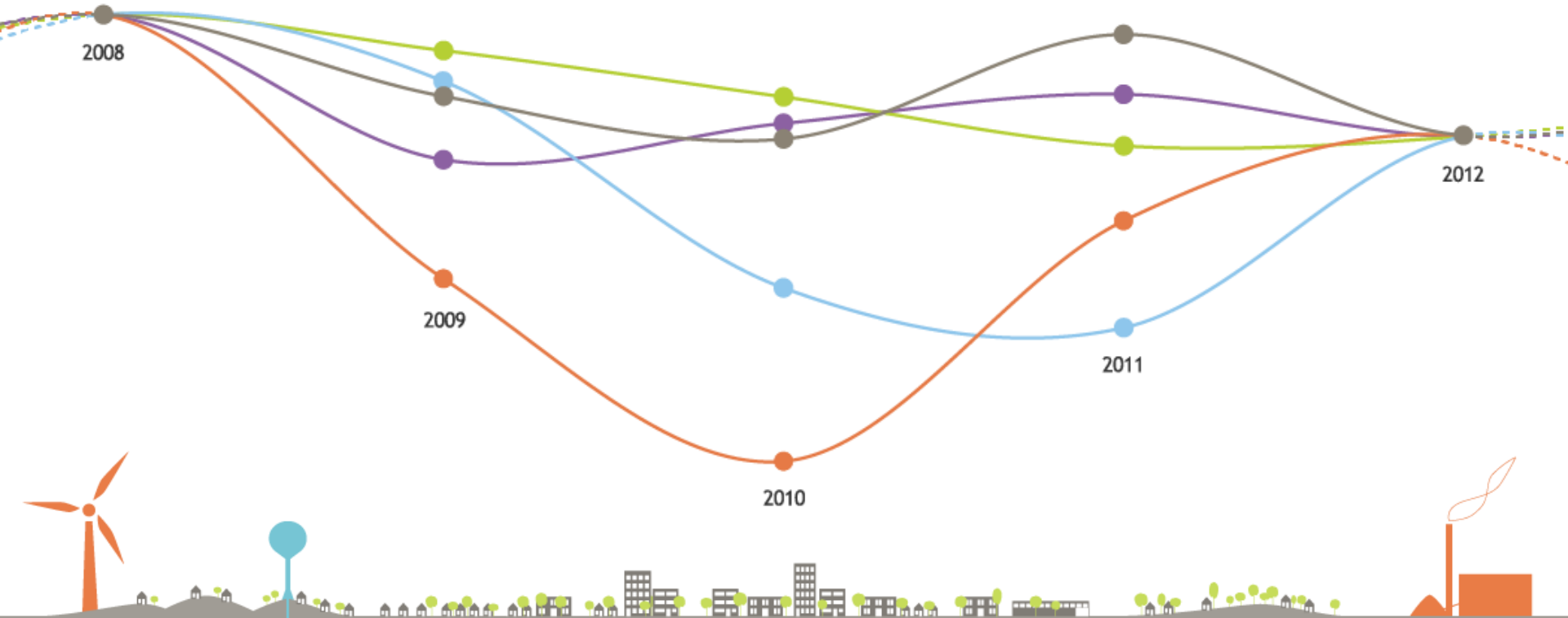


Regional Council of Mayors

Rick Carter, LHB Inc.



An Inventory of Energy, Potable Water, Travel, Waste, and Greenhouse Gas Emissions for Twenty-Seven Minnesota Cities from 2007 to 2013.





## BACKGROUND

### Minnesota Pollution Control Agency's GreenStep Cities Program:

- Choose from 28 best practices
- GreenStep Cities tracks which practices cities have adopted, but does not currently have a method of tracking the effectiveness of these strategies
- GreenStep Cities Pilot

### Regional Indicators Initiative Pilot

- Edina
- Falcon Heights
- Saint Louis Park







## METRICS



**ENERGY (IN BTUS):** electricity, natural gas, and district energy consumed citywide (subdivided into residential and commercial/industrial)



**WATER (IN GALLONS):** potable water consumed citywide (subdivided into residential and commercial/industrial)



**TRAVEL (IN VEHICLE MILES TRAVELED):** on-road distance traveled within city limits



**WASTE (IN POUNDS):** citywide municipal solid waste managed via recycling, composting, combustion, and landfilling (prorated from countywide data)

## COMMON METRICS



**GREENHOUSE GAS EMISSIONS (IN TONNES CO<sub>2</sub>E):** citywide greenhouse gas emissions associated with each of the four indicators



**COST (IN DOLLARS):** cost estimates associated with each of the four indicators

## ADDITIONAL DATA

### DEMOGRAPHICS

All data is reported both as a total as well as in units/capita. Residential data is reported in units/household, and Commercial/Industrial data is reported in units/job

### AREA

City Area (sf)

### WEATHER

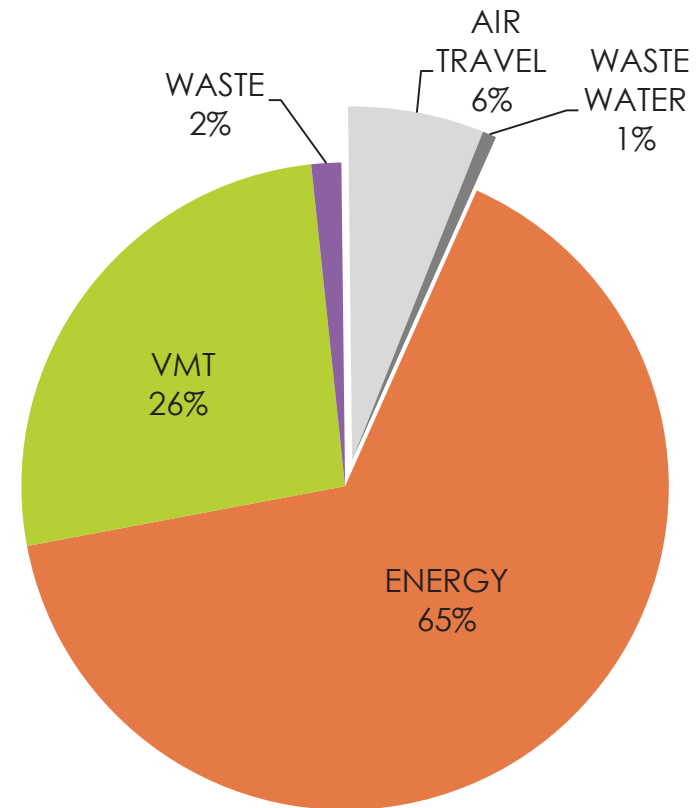
Heating Degree Days  
Cooling Degree Days  
Precipitation (in)



## A COMMON METRIC

### BREAKDOWN OF GREENHOUSE GAS EMISSIONS - 2012 (22 cities)

- RII follows the method outlined in the ICLEI Community Protocol
- Many cities have done greenhouse gas inventories, but this is the first state-wide effort of this scale
- For RII cities, energy is the largest contributor to emissions
- RII's primary metrics comprise over 90% of all in-boundary emissions
- Other emission sources were also calculated, including air travel and wastewater





## ENERGY

BRITISH THERMAL UNITS

## WATER

GALLONS

## TRAVEL

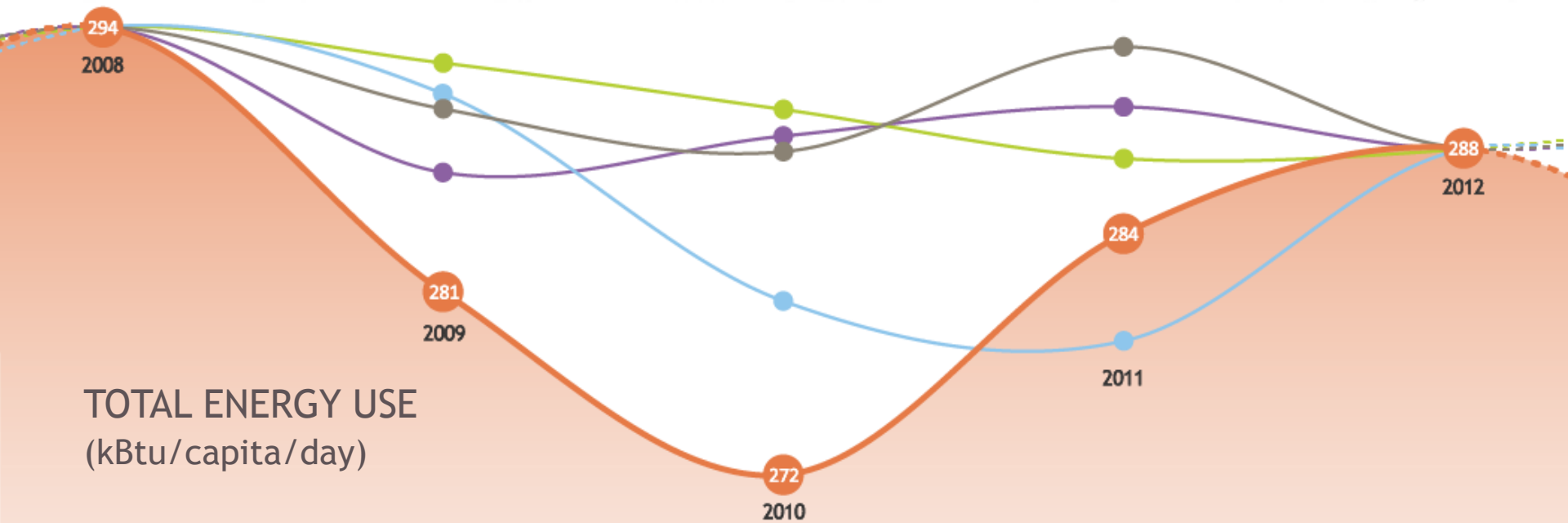
VEHICLE MILES TRAVELED

## WASTE

POUNDS

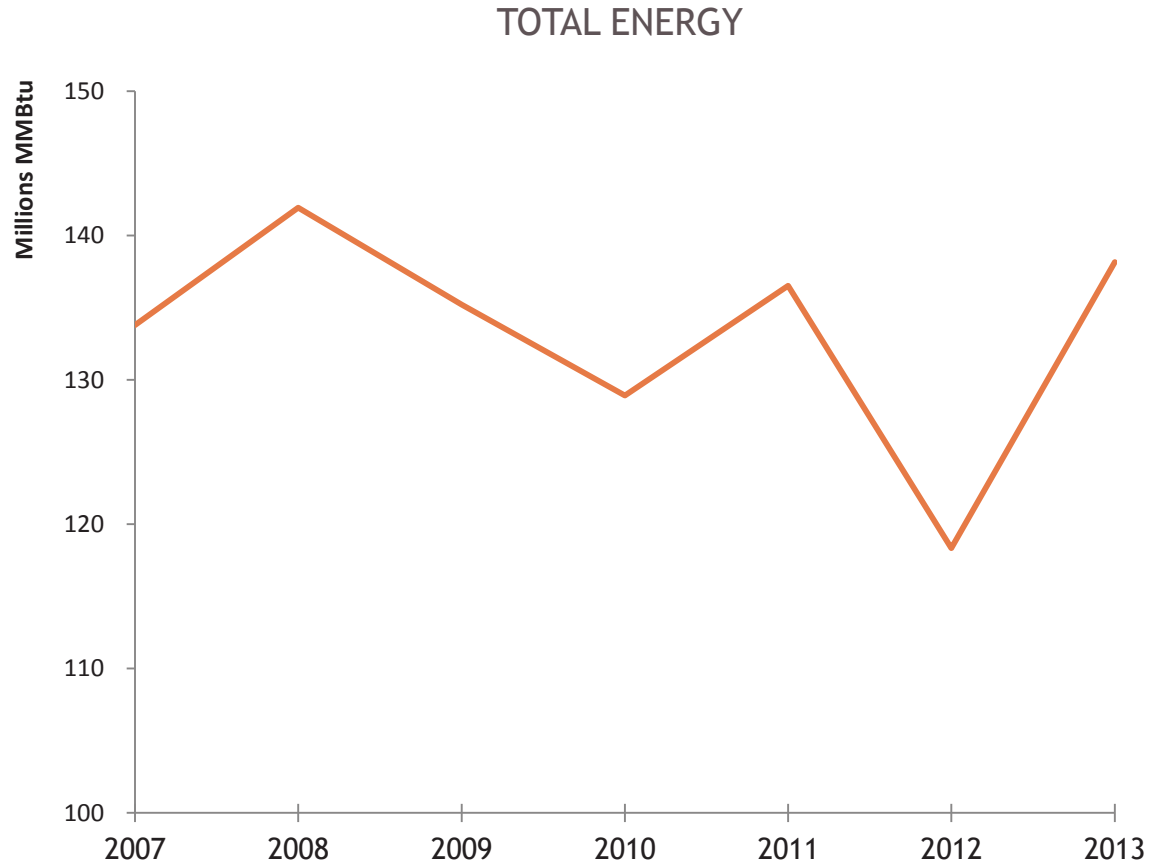
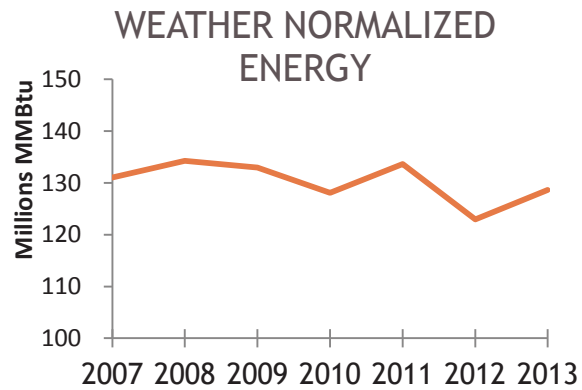
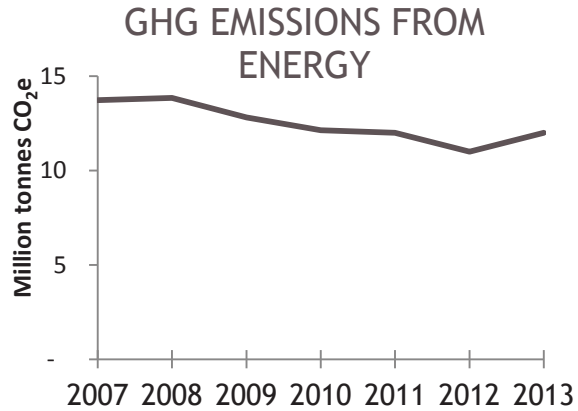
## GHG EMISSIONS

CARBON DIOXIDE EQUIVALENTS





## 7-YEAR TRENDS TWENTY CITIES

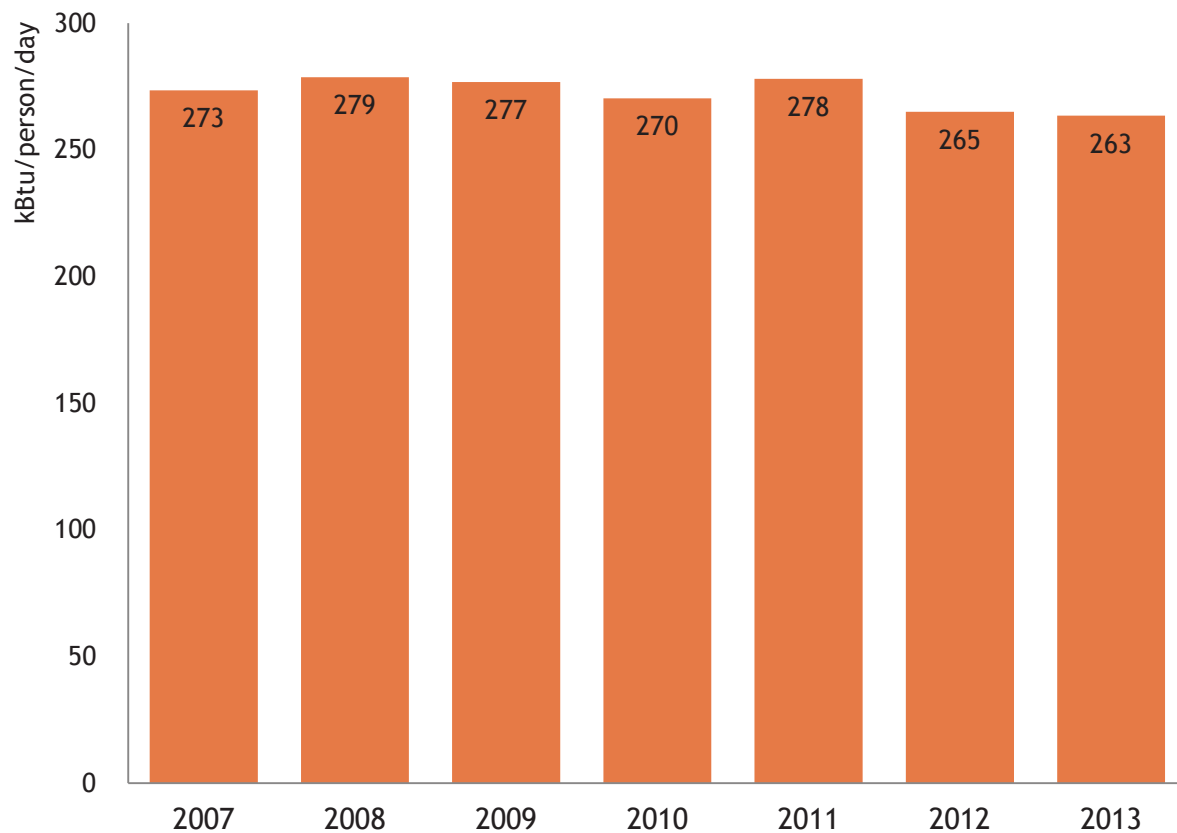




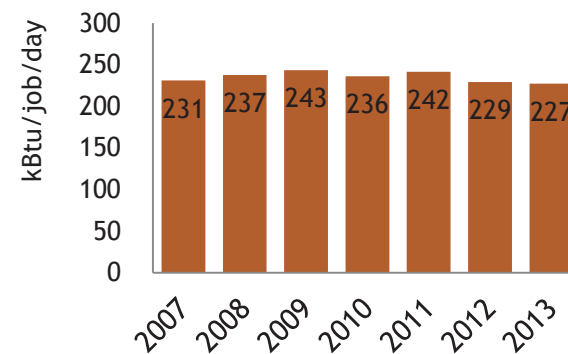
## 5 YEAR TRENDS

### TWENTY-TWO CITIES - WEATHER NORMALIZED ENERGY USE

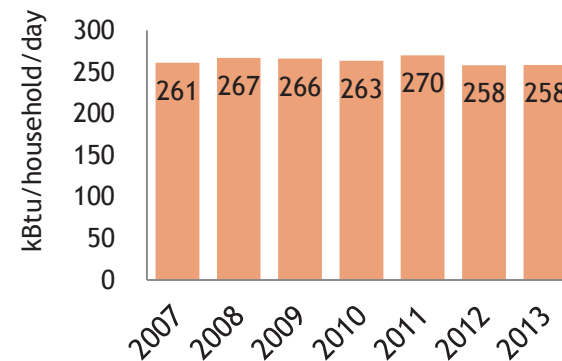
#### TOTAL ENERGY



#### COM./IND. ENERGY



#### RESIDENTIAL ENERGY



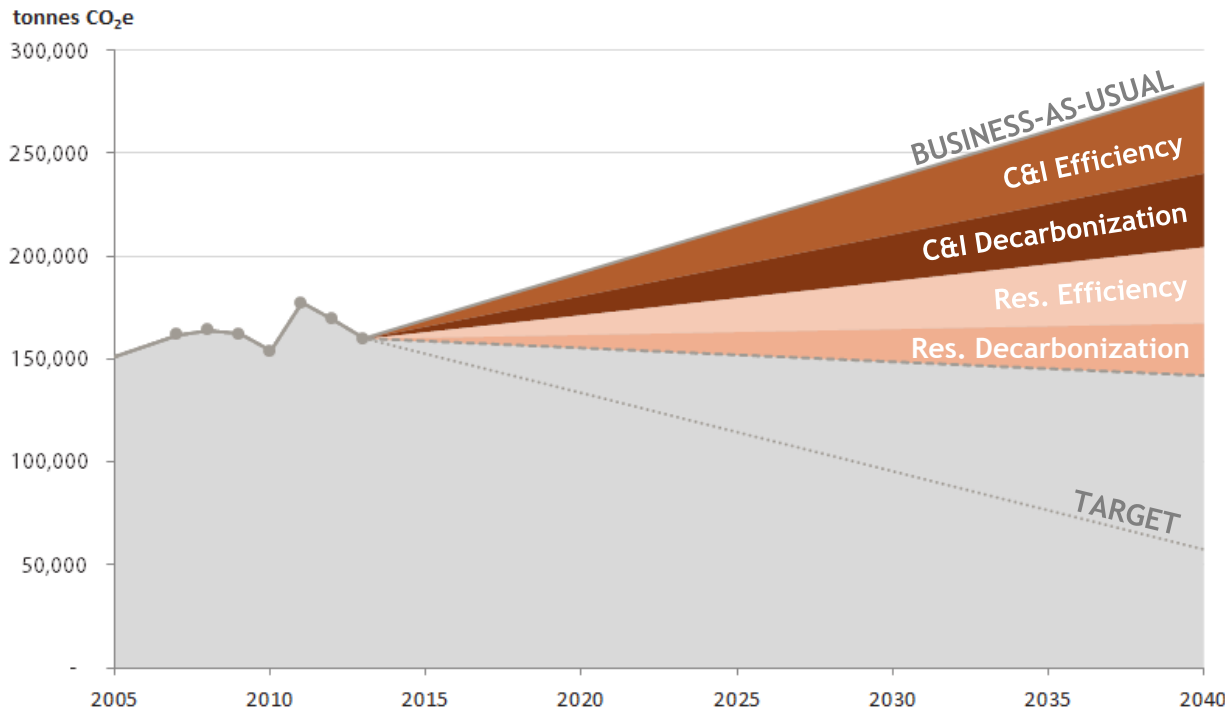




## SO WHAT?

### WEDGE DIAGRAMMING

We are currently working with test cities to identify specific goals and select reduction strategies to commit to. The goal is to create a wedge diagram template for use by cities in sustainability planning.



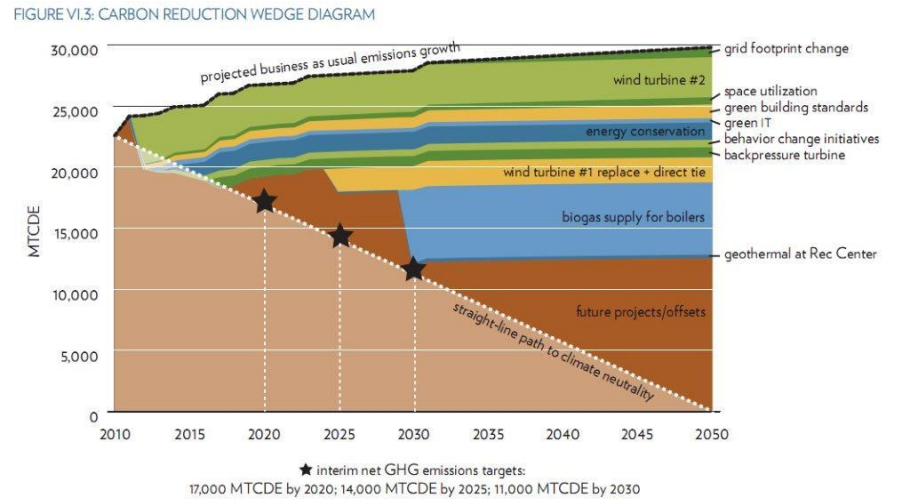
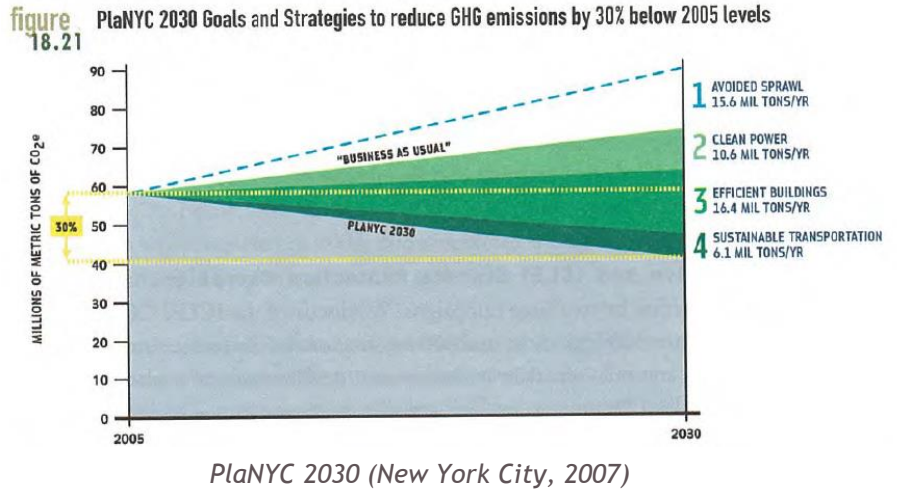
REDUCTION FROM 2005 LEVELS	
— BUSINESS-AS-USUAL	-87%
..... TARGET	62%
---- PLAN	6%

REDUCTION PLAN	
<b>Commercial &amp; Industrial Energy</b>	
<b>Energy Efficiency</b>	<b>28%</b>
Existing buildings	6%
New buildings	20%
Outdoor lighting	1%
Water treatment and distribution	1%
<b>Energy Decarbonization</b>	<b>23%</b>
Decarbonization of grid	18%
Decarbonization of on-site energy	5%
<b>Residential Energy</b>	
<b>Energy Efficiency</b>	<b>29%</b>
Existing buildings	4%
New buildings	25%
<b>Energy Decarbonization</b>	<b>20%</b>
Decarbonization of grid	18%
Decarbonization of on-site energy	2%



## FIVE-YEAR PLAN

- Undergo peer review
- Develop automated online database to manage data
- Collect and publish data for all metro area cities in time for use in comprehensive planning process
- Develop tools to assist cities in comprehensive planning (i.e. summary of city data, wedge diagram template, workshops)
- Expand program to be statewide, and incorporate into state's climate action plan
- Continue to track annual data to measure progress toward goals



*Carleton College Climate Action Plan (2011)*



## CITIES

- Bemidji
- Bloomington
- Burnsville
- Coon Rapids
- Duluth
- Eagan
- Eden Prairie
- Edina
- Elk River
- Falcon Heights
- Hopkins
- Kasson
- Lake Elmo
- Maplewood
- Minneapolis
- Minnetonka
- Oakdale
- Richfield
- Rochester
- Rosemount
- Shoreview
- Saint Anthony
- St. Cloud
- St. Louis Park
- St. Paul
- White Bear Lake
- Woodbury

## DATA SOURCES

### PUBLIC AND PRIVATE UTILITIES

Anoka Municipal Utility  
 CenterPoint Energy  
 Connexus Energy  
 Dakota Electric Association  
 Duluth Comfort Systems  
 Duluth Steam Cooperative  
 Great River Energy  
 Hennepin Energy Recovery Center  
 Minnesota Energy Resources  
 Minnesota Power  
 Minnesota Valley Electric Cooperative  
 NRG Energy  
 Olmsted County Waste to Energy Facility  
 Rochester Public Utility  
 St. Paul District Energy  
 University of Minnesota (Southeast Steam)  
 Western Lake Superior Sanitation District  
 Xcel Energy

### STATE AND LOCAL GOVERNMENT

Duluth Port Authority  
 Hennepin County  
 Metropolitan Airports Commission  
 Metropolitan Council of the Twin Cities  
 Minnesota Department of Administration  
 Minnesota Department of Employment and Economic Development  
 Minnesota Department of Natural Resources  
 Minnesota Department of Transportation  
 Minnesota Pollution Control Agency  
 Rochester International Airport  
 U.S. Energy Information Administration  
 University of Minnesota

### OTHER

Degree Days.net  
 ICLEI Local Governments for Sustainability

## PARTNERS





## SO WHAT?

### TOTAL GREENHOUSE GAS EMISSIONS FROM PRIMARY SOURCES

