



AUGUST 21-23, 2018 • CLEVELAND, OHIO

# Energy Planning

State, Local, Utility, and Private Sector Perspectives

# Panelists

Lindsay Anderson, Minnesota Dept. of Commerce

Tami Gunderzik, Xcel Energy

Rick Carter, LHB

Shannon Pinc, Saint Louis Park, MN

Jonah Steinbuck, U.S. Dept. of Energy

# Energy Planning Resources

## Data

- [DOE State & Local Energy Data](#)
- [EIA State Energy Profiles](#)

## Best Practices & Case Studies

- [State & Local Solution Center – Develop An Energy Plan](#)
- [Better Buildings Solution Center](#)

## New Guides

- [A Guide for Incorporating Energy Efficiency in State Energy Plans](#)
- Highlights of State and Local Planning for EE & RE (in prep)



### State & Local Energy Data

See City Energy Profile

Get comprehensive energy use and activity data that can help your city plan and implement clean energy projects. A city's energy profile includes summary reports on:

- Greenhouse gas emissions
- Electricity generation
- Natural gas and other fuel source costs
- Renewable energy resource potential
- Transportation, buildings, and industry data
- Applicable policies and incentives

Enter ZIP Code or City, State

Get Summary Report



### Develop An Energy Plan

The development of a long-term energy plan is a foundational step for improving energy performance in your jurisdiction. Strategic energy planning helps state and local governments focus efforts and actions toward a shared energy vision. The resources and best practices available below will help state and local governments develop energy plans that maximize energy savings, economic growth, and public health benefits.

#### STATE ENERGY PLANNING

Most state energy offices across the country are required to have current and long-term strategic energy management plans in place. These strategic plans help to ensure that state agencies are doing everything economically feasible to manage energy consumption and reduce energy- and water-related costs.

The National Association of State Energy Officials provides state energy plans and associated resources, including the 2011 report "An Overview of Statewide Comprehensive Energy Plans" and a set of State Energy Planning Guidelines.

#### LOCAL ENERGY PLANNING

The U.S. Department of Energy has developed the Guide to Community Energy Strategic Planning, which includes a step-by-step process for creating a robust strategic energy plan for local governments and communities that can help save money, create local jobs, and improve national security. The guide offers tools and tips to complete each step and highlights examples from successful planning efforts around the country. Download the entire plan, or access information on each step.

Search: [input field]

ALL STATE & LOCAL SOLUTION CENTER RESOURCES

Showing 1 to 35 of 363 entries

Filter by Action Area	RESOURCES
<input type="checkbox"/> Access and Use Energy Data	National Resource Page of Energy Efficiency Savings Opportunities
<input type="checkbox"/> Design and Implement Energy Programs	These resources explore energy potential in residential, commercial, and industrial buildings, plus a catalog of all state and utility energy efficiency program activities.
<input type="checkbox"/> Develop an Energy Plan	National Resource Guide to Community Energy Strategic Planning
	Introduces a step-by-step process for creating a robust strategic energy plan and offers tools and tips to complete each step.

### A Guide for Incorporating Energy Efficiency in State Energy Plans

#### INTRODUCTION

**About this Guide**  
This guide, written for states, describes ten steps that are commonly incorporated into state energy plans. For each step, the guide provides tips and examples from state energy plans to help states support data-driven energy planning that can reduce energy efficiency. The guide is designed to inform state efforts; it is not meant to be a comprehensive review of how to conduct energy planning.<sup>1</sup>

**State Planning and Energy Efficiency**  
Implementing energy efficiency measures and technologies has significant potential for energy and cost savings.<sup>2</sup> The U.S. Department of Energy (DOE) estimates that energy efficiency improvements could collectively save consumers and businesses approximately 14,000 gigawatt-hours of electricity between 2018 and 2035, which is equal to 16% of baseline retail sales in the United States in 2035. At the state level, these range from 12% to 23% of retail electricity sales. The map below shows the percent of electricity savings potential by state in 2035.<sup>3</sup>

States use energy planning to set strategic goals, develop programs, and measure progress toward a shared vision of a desired energy future.<sup>4</sup> The two most cited goals of the forty states with energy plans in 2017 are to: 1) ensure a reliable supply of energy and 2) manage costs so energy is affordable for

<sup>1</sup> For a comprehensive guide to state energy planning, see: Kate Marks and Julia Friedman, *State Energy Planning Guidelines: A Guide to Developing a Comprehensive State Energy Plan* (Supplemental Policy and Program Options) (National Association of State Energy Officials, 2014).

<sup>2</sup> Energy efficiency is the reduction of energy use while maintaining the same level of service. Energy efficiency is often coordinated with energy conservation, which focuses on using less energy, or with demand-response programs that seek to lower the use of energy at specific times of the day or year when high energy demand may adversely affect system reliability.

<sup>3</sup> Source: Electric Power Research Institute (EPRI), 2017. [State-Level Electric Energy Efficiency Potential Estimates](#).

<sup>4</sup> While this guide is focused on energy-saving opportunities in residential, commercial and industrial sectors, it is important for state energy office officials to understand the significant energy impact of the transportation sector. It is expected that technological advancements (i.e., the evolution and adoption of electric vehicles) will result in increased electricity consumption, but decreased energy use (or increased "energy productivity") overall. The so-called transportation energy nexus is likely to require state planning, policy and regulatory frameworks.





## Clean Energy State Partnerships with Utilities and Local Governments

**Lindsay Anderson**

State Program Administrator

Minnesota Dept. of Commerce



# Clean Energy State Partnerships with Utilities and Local Governments

Lindsay Anderson

August 23, 2018

[mn.gov/commerce](http://mn.gov/commerce)

# Takeaway & Preview

Partnerships are key to support statewide clean energy efforts

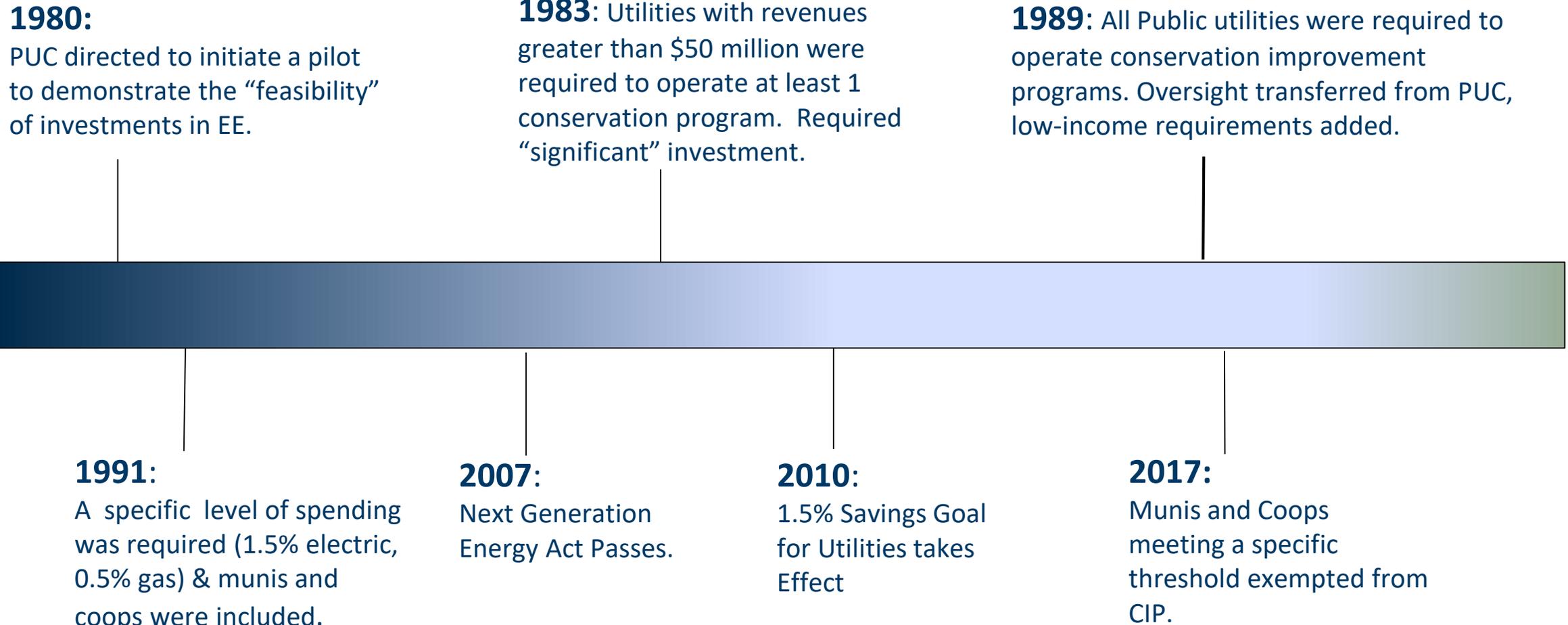
- State Energy Goals
- Conservation Improvement Program
- GreenStep Cities Program

# State of Minnesota Goals

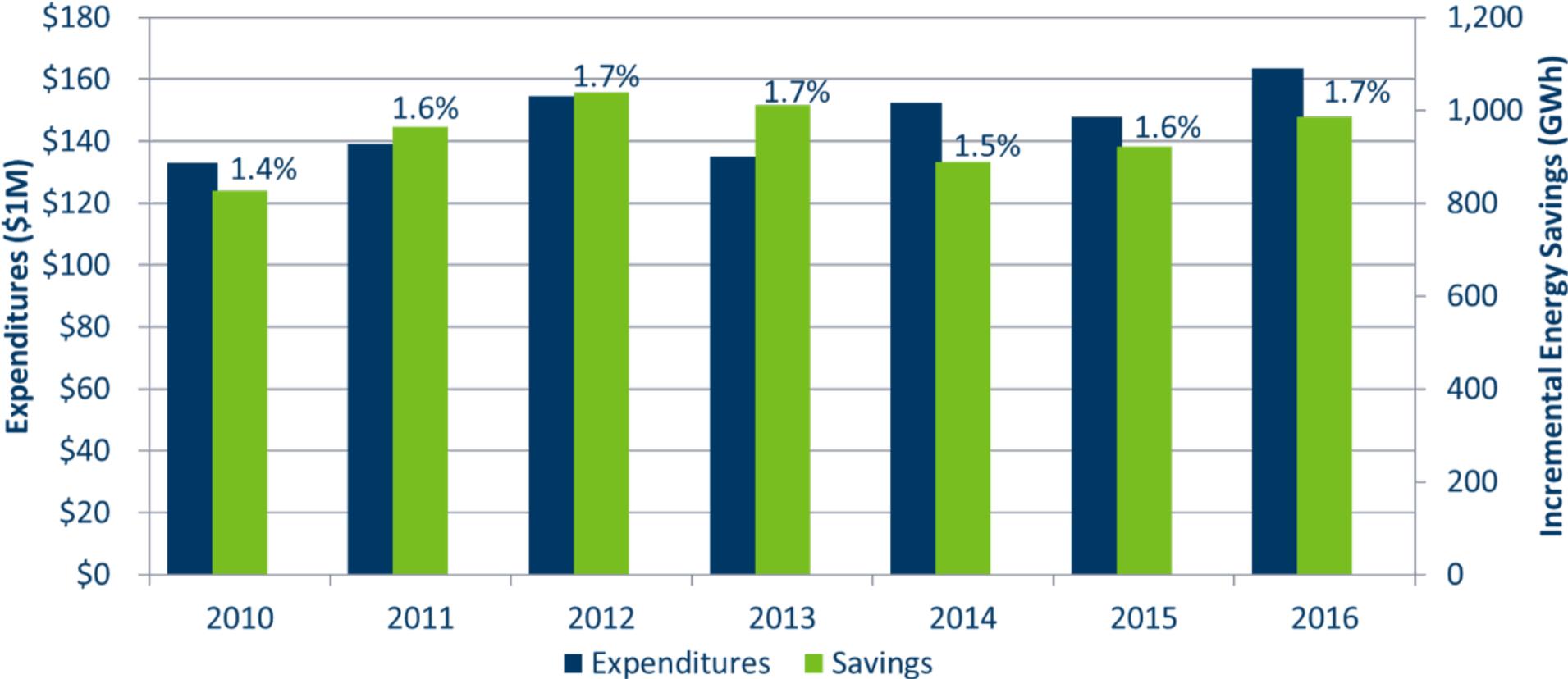
## Next Generation Energy Act



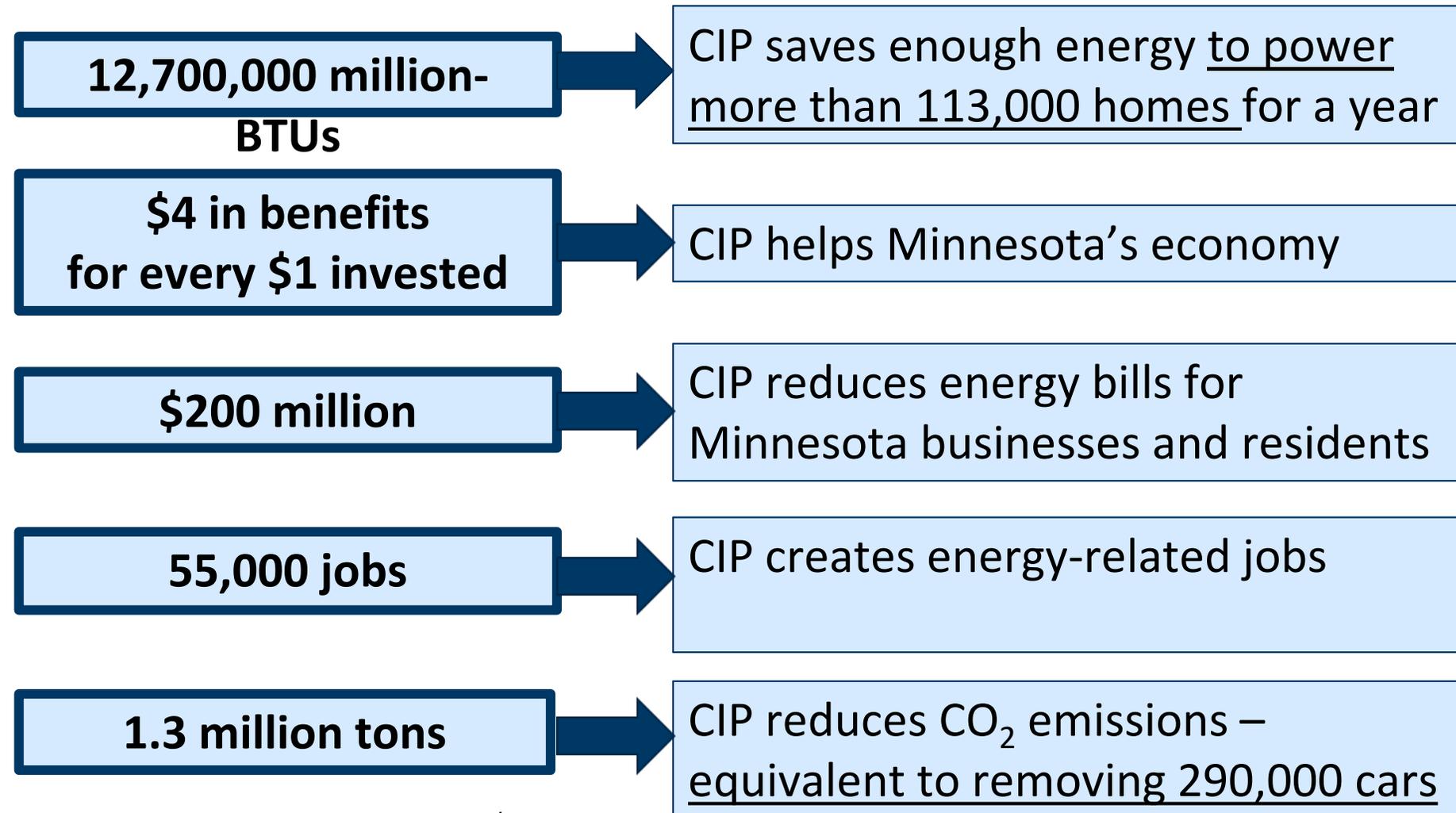
# Conservation Improvement Program (CIP)



# CIP Electric Performance (2010-2016)



# CIP Benefits from 2014-2015





# GreenStep Cities

Voluntary challenge, assistance and recognition program to help cities achieve their sustainability and quality-of-life goals.





# 29 Best Practices, 5 Categories

- Developed by and for communities
- Assistance & peer learning
- Social Norming & Tipping Point Theory
- Achievable
- Measureable Results
- Healthy competition among peer cities
- Recognition
- Promoting innovation
- Designated city coordinator



**Buildings and Lighting**



**Land Use**



**Transportation**



**Environmental Management**



**Economic and Community  
Development**



# GreenStep Cities has broad reach

- 45% of Minnesota Population
- More than 120 cities big & small

## GSCs

2%

Population  
● > 100,000 - 294,873

32%

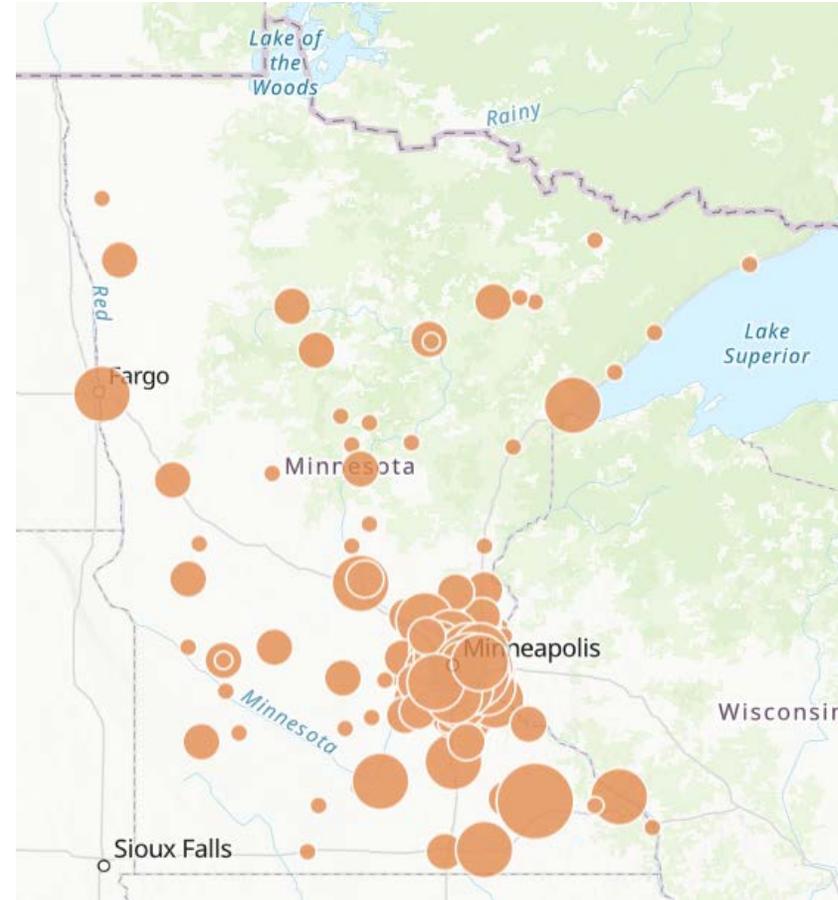
● > 20,000 - 100,000

34%

● > 5,000 - 20,000

33%

● 255 - 5,000





# GreenStep Cities 2017 Benefits



6 cities reported generating 838 MWh from renewable energy in one year

The average percent of Step 5 Cities' street lights converted to LED is 27%, up from 17% in 2016



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651.539.1771



## Partners in Energy

**Tami Gunderzik**  
Senior Product Manager  
Xcel Energy





***Xcel Energy***<sup>®</sup>

**PARTNERS IN ENERGY**

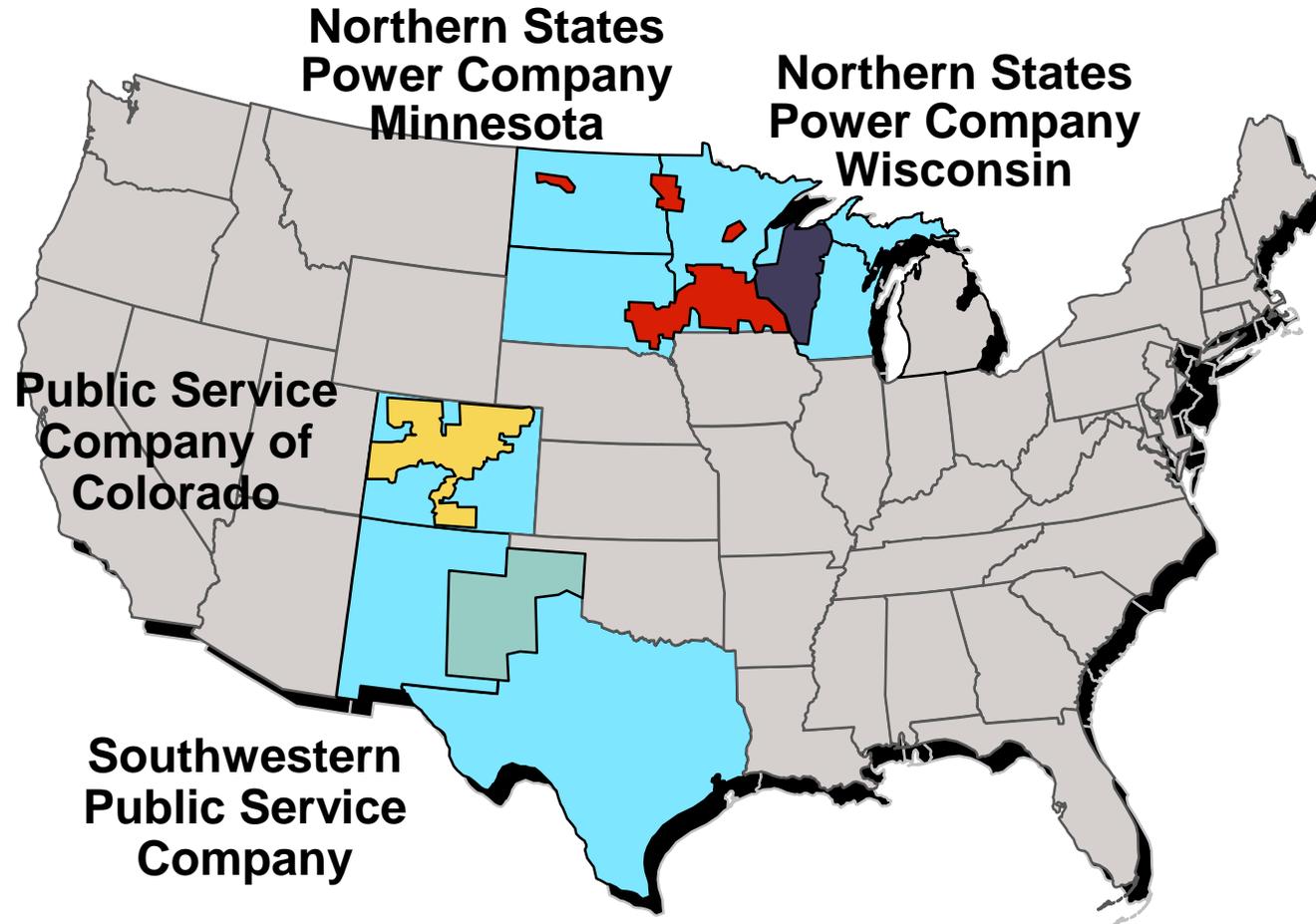
An Xcel Energy Community Collaboration

**Tami Gunderzik**

**Xcel Energy**

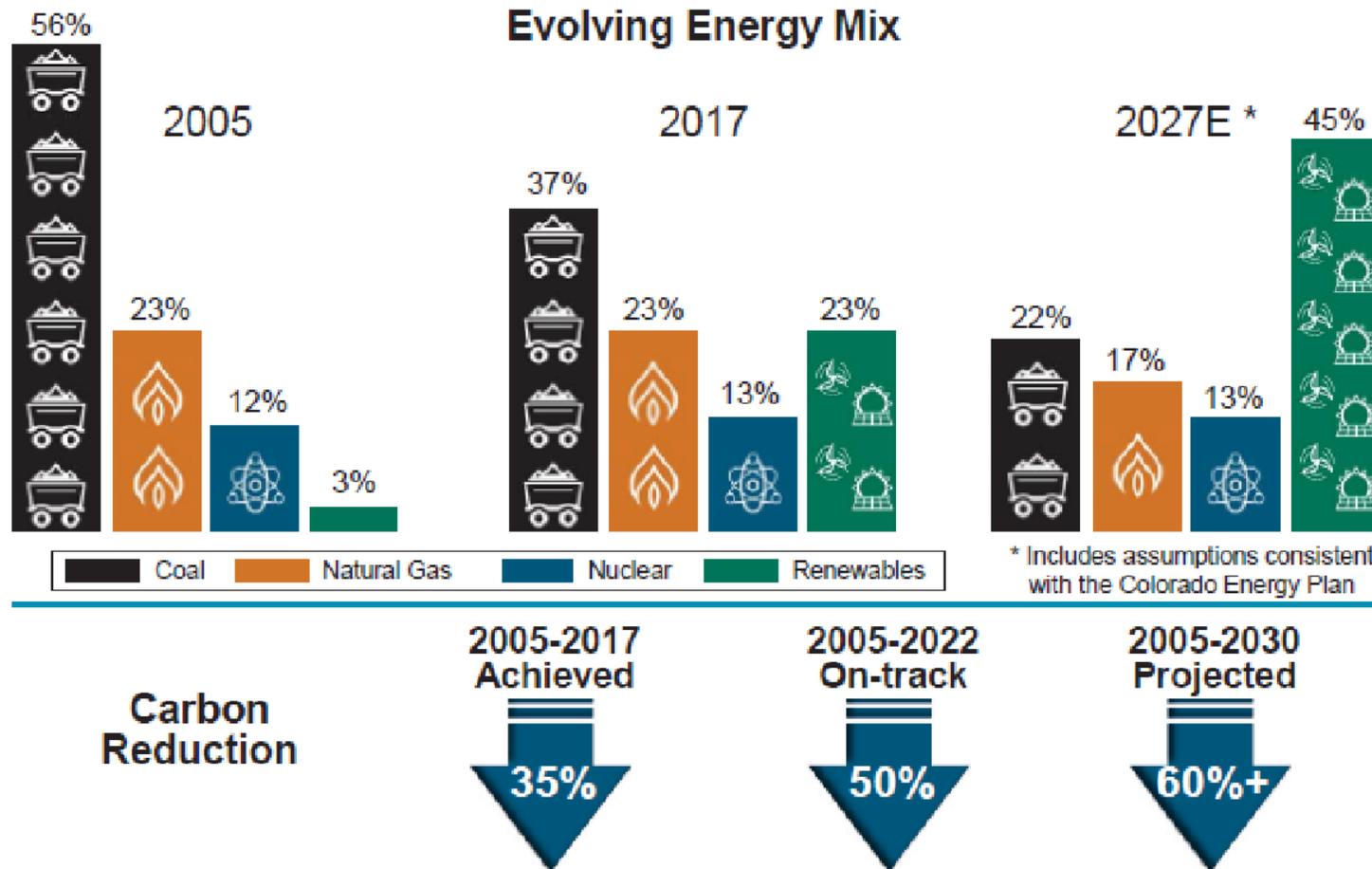
**August 23, 2018**

# Xcel Energy Service Areas



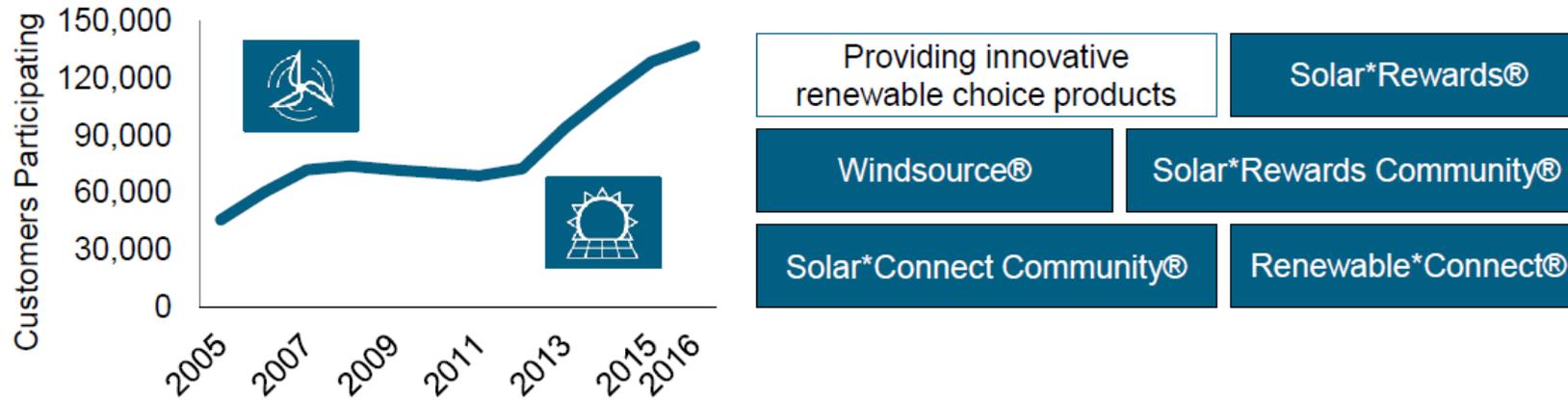
# Commitment to Clean Energy

## Lead the Clean Energy Transition

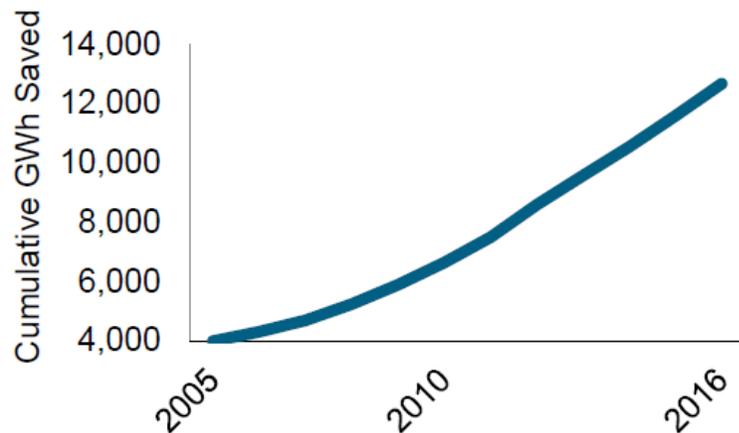


# Products and Services

## Renewable Energy Programs

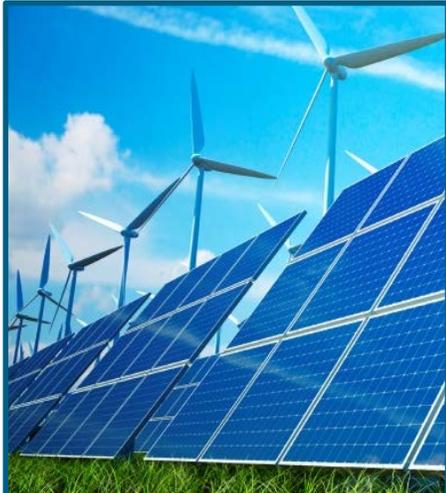


## Energy Efficiency Programs



More than 150 efficiency and rebate programs that annually save one TWh of electricity

# Customer Needs



**Sustainability**



**Pricing Options**



**Energy Efficiency**



**Convenience**

# Partners in Energy

Target Market: Community customers in Colorado and Minnesota.

A two-year collaboration with Xcel Energy to develop and implement a community's energy plan goals.

Xcel Energy provides tools and resources to enable community-driven energy planning and implementation.

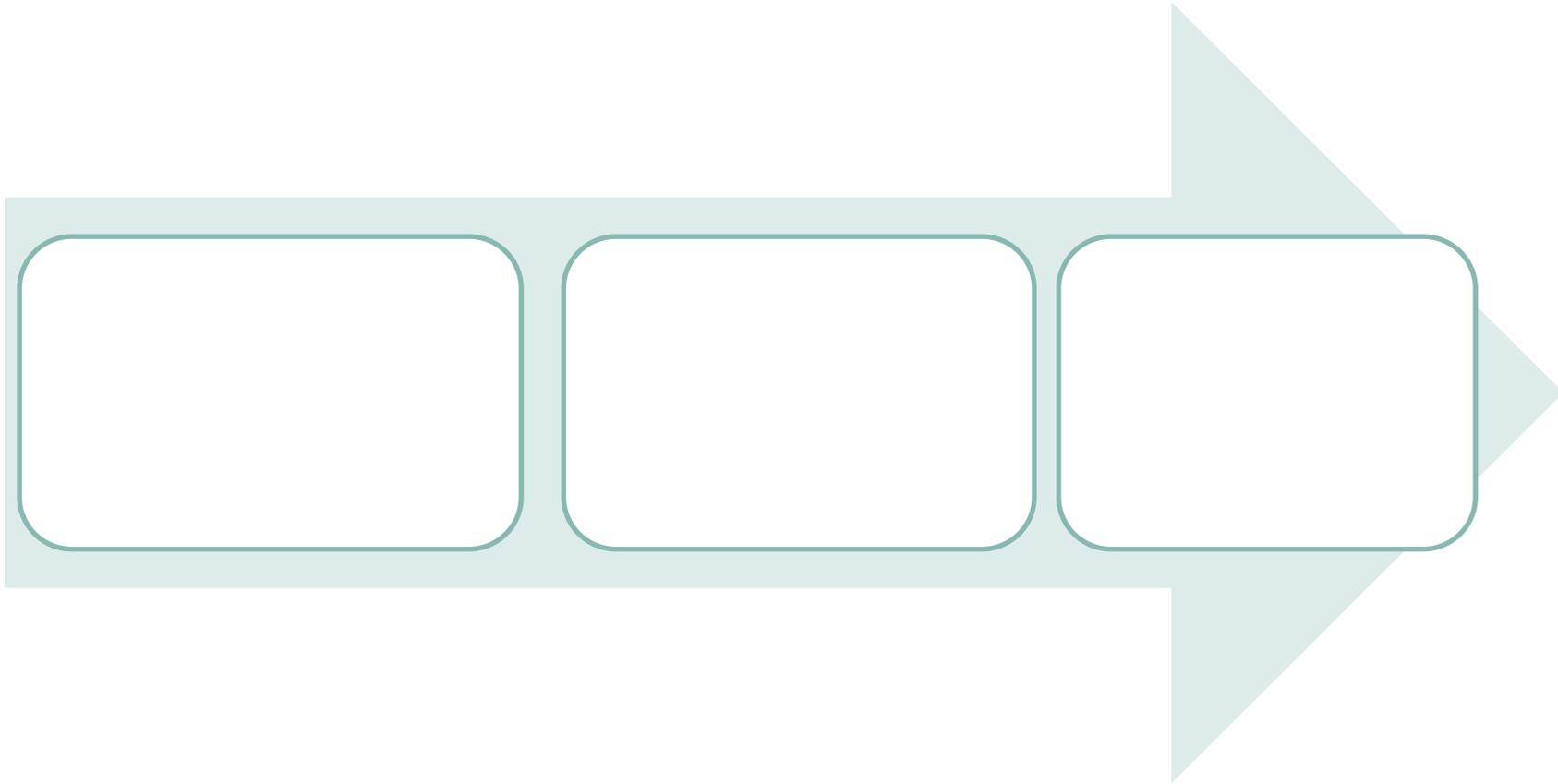
Planning  
(6 months)

Implementation  
(18 months)

# Program Objective

Engage with the communities we serve by providing them with tools and resources to develop and carry out their energy action plan.

# Xcel Energy's Goals



# How it Works



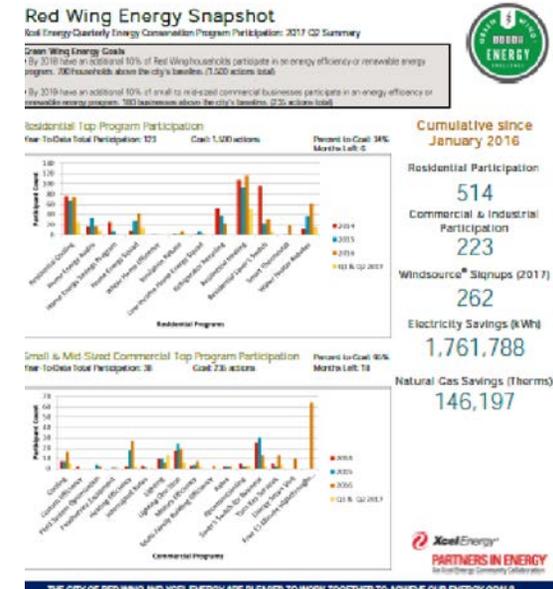
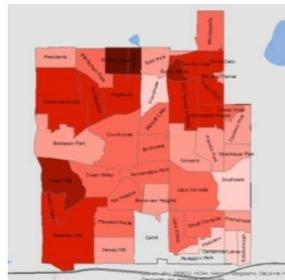
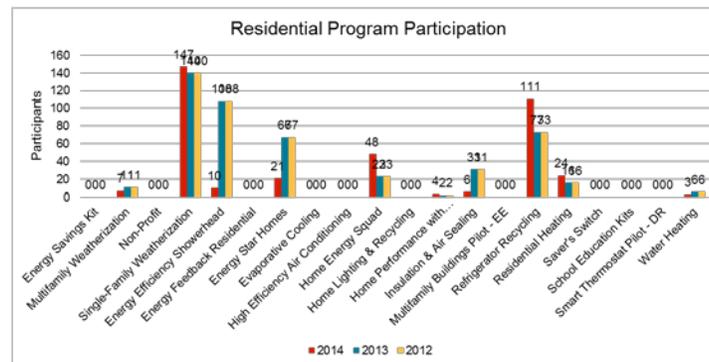
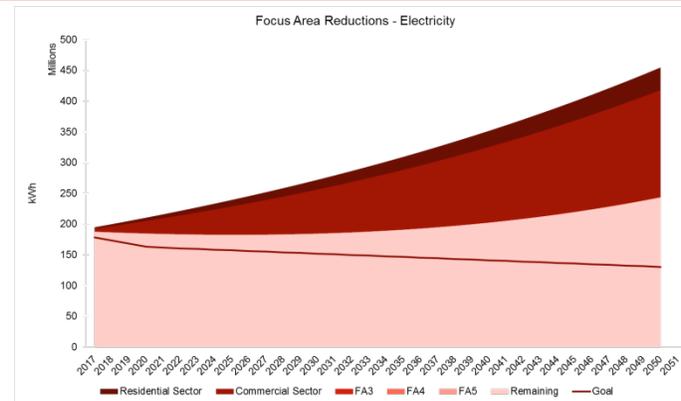
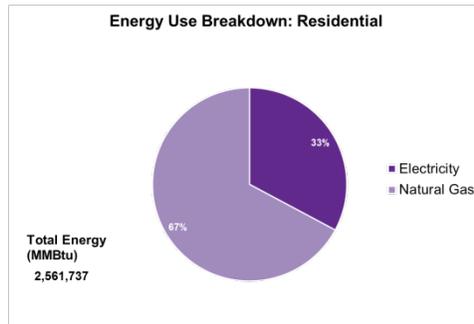
# Tools & Resources - Data

## Planning

- Set the baseline
- Inform planning

## Implementation

- Community Reporting
- Track results



# Tools & Resources - Manpower

## Planning

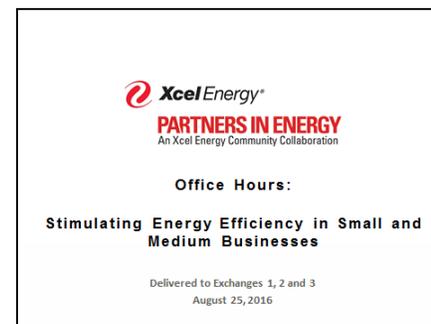
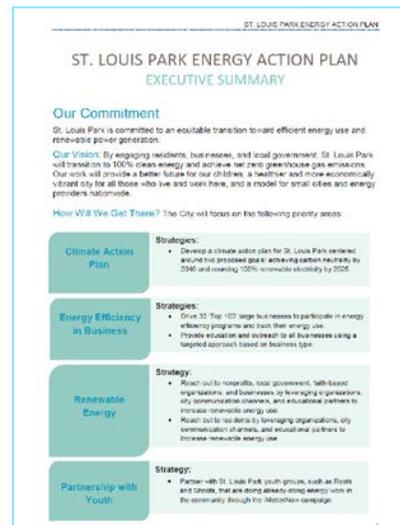
- Facilitation
- Document Development
- Project Management

## Implementation

- Project Management
- Subject Matter Expertise



**Facilitation & Guidance**



Initial Implementation Steps	
<b>2016</b>	
<b>January 2016</b>	<ul style="list-style-type: none"> <li>First meeting (Community Team)</li> </ul>
<b>February 2016</b>	<ul style="list-style-type: none"> <li>Provide information on existing business programs (Xcel Energy)</li> <li>Research business outreach and recognition programs (Community Team)</li> </ul>
<b>March 2016</b>	<ul style="list-style-type: none"> <li>Draft a business program tool (Xcel Energy and Partners in Energy Facilitation Team)</li> <li>Provide technical program descriptions (Xcel Energy and Partners in Energy Facilitation Team)</li> <li>Research business outreach and recognition programs (Community Team)</li> </ul>
<b>April 2016</b>	<ul style="list-style-type: none"> <li>Meet with Chamber of Commerce (Community Team)</li> </ul>
<b>May 2016</b>	<ul style="list-style-type: none"> <li>Develop strategy for promotion (Community Team)</li> <li>Research tracking options for business leaders (Community Team)</li> <li>Plan for July launch events (Community Team)</li> <li>Refine the business program tool (Xcel Energy)</li> </ul>
<b>June 2016</b>	<ul style="list-style-type: none"> <li>Continue to plan for July launch events (Community Team)</li> <li>Develop recognition materials (Xcel Energy)</li> <li>Continue to develop launch event materials (Xcel Energy)</li> </ul>
<b>July 2016</b>	<ul style="list-style-type: none"> <li>Business recognition program launch event (Community Team + Chamber of Commerce)</li> </ul>
<b>August 2016</b>	<ul style="list-style-type: none"> <li>Recruit businesses for recognition program (Whole Team)</li> <li>Advise the business recognition program (Community Team)</li> <li>Refine outreach campaign (Community Team)</li> </ul>

# Tools & Resources – XE Offerings

## Planning

- Education
- Match tactic with focus area
- Broad selection

## Implementation

- Help remove customer barriers
- Drive impacts
- Co-branding



Conservation/DSM



Renewables



Education -  
Customer Service



# Community Benefits





**PARTNERS IN ENERGY**  
An Xcel Energy Community Collaboration



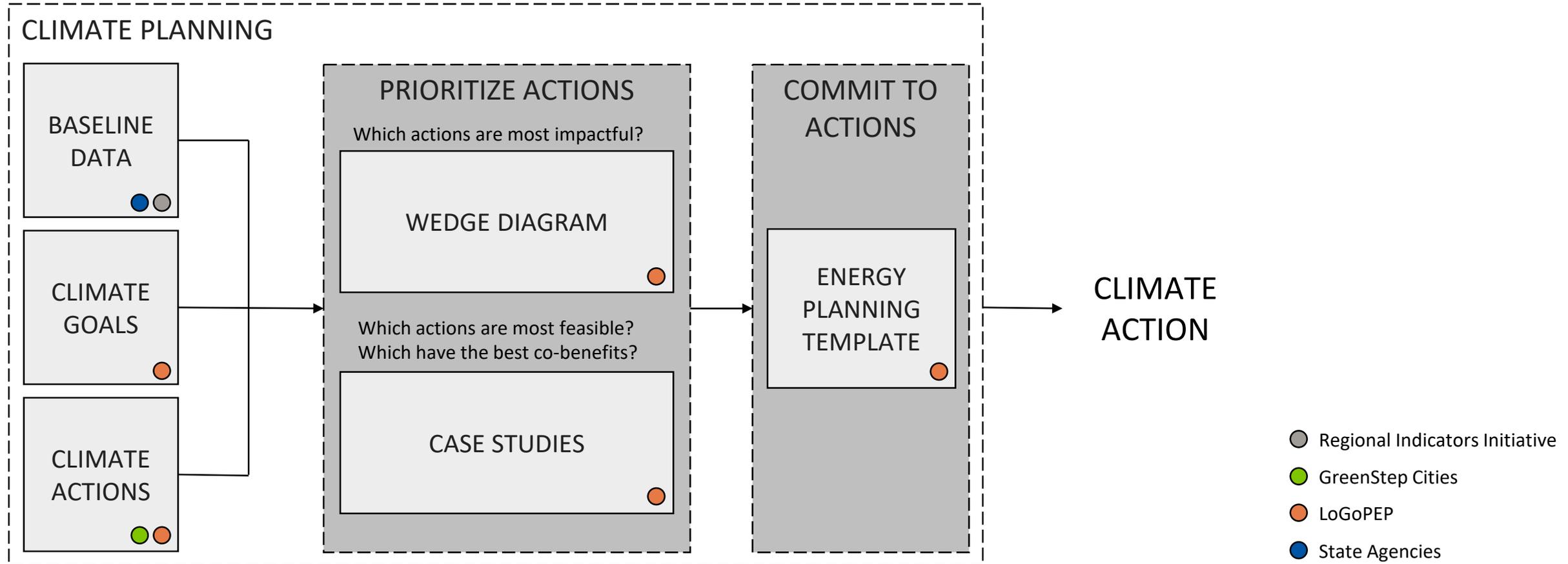
## Regional Indicators Initiative

**Rick Carter**  
Senior Vice President  
LHB





PROBLEM: Local governments lack information and guidance to adequately plan and take action to set and meet climate targets.



SOLUTION: Leverage existing relationships and develop new resources to fill in climate planning and action gaps.



# 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)

## 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

# 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

## AREA

City Area (sf)

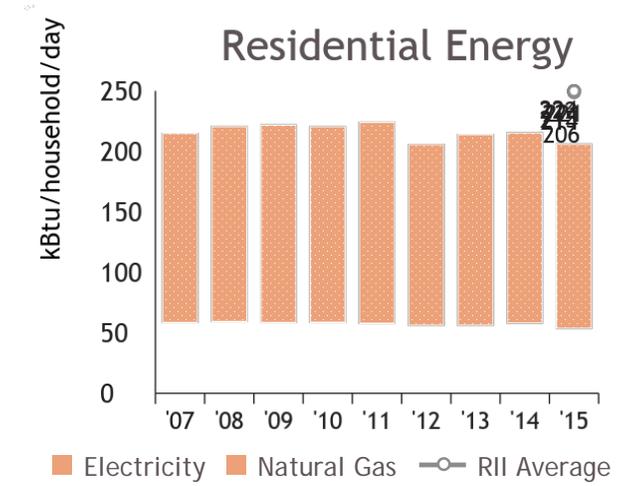
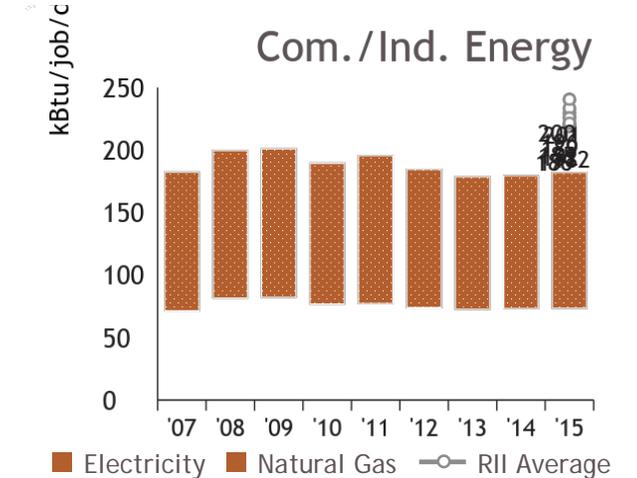
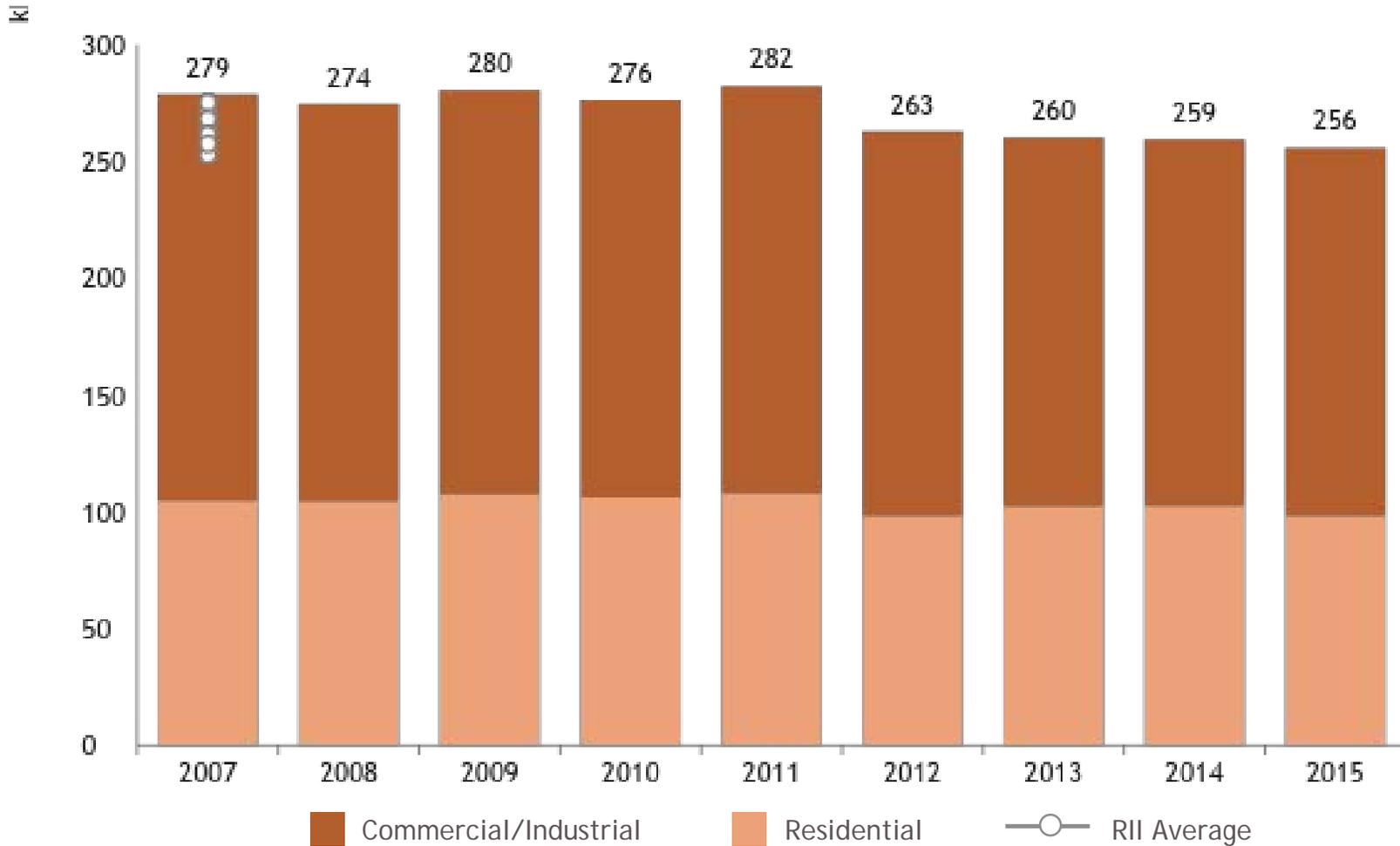
## WEATHER

Heating Degree Days  
Cooling Degree Days  
Precipitation (in)



# ENERGY USE

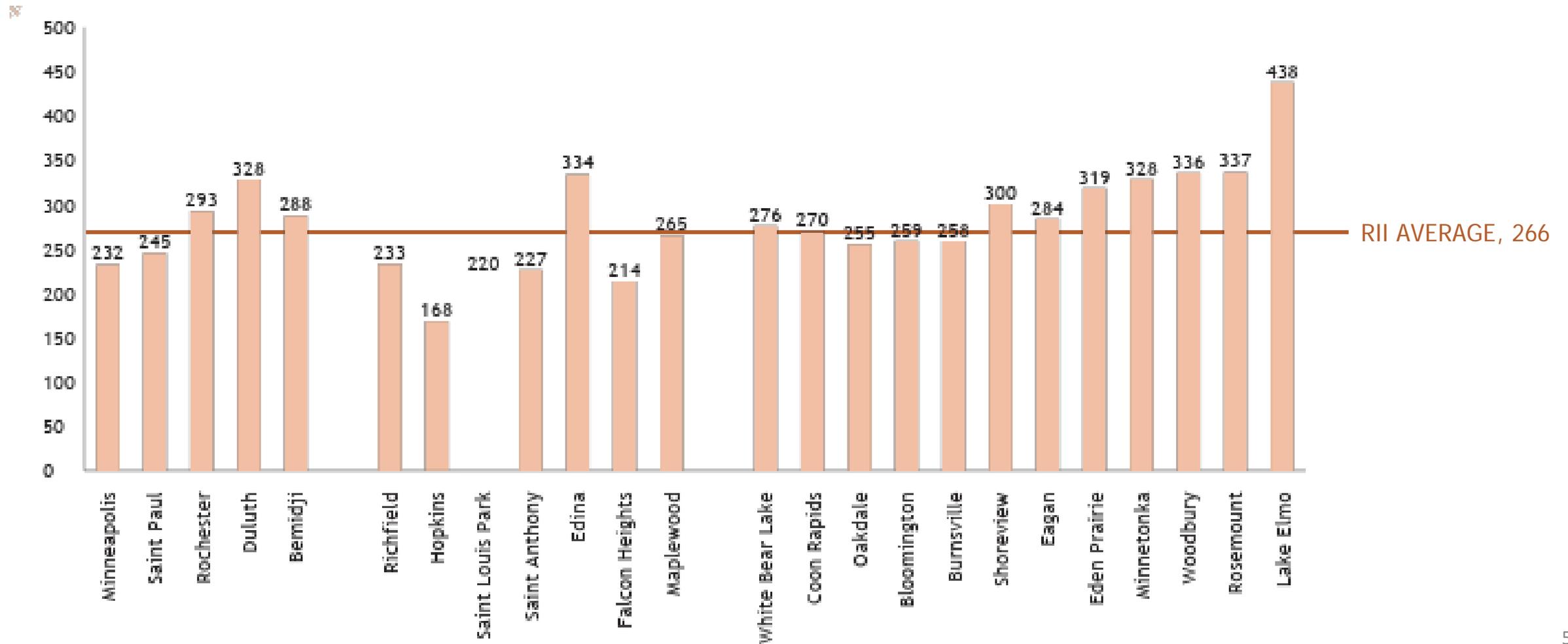
## SAINT LOUIS PARK - WEATHER NORMALIZED





# RESIDENTIAL ENERGY USE

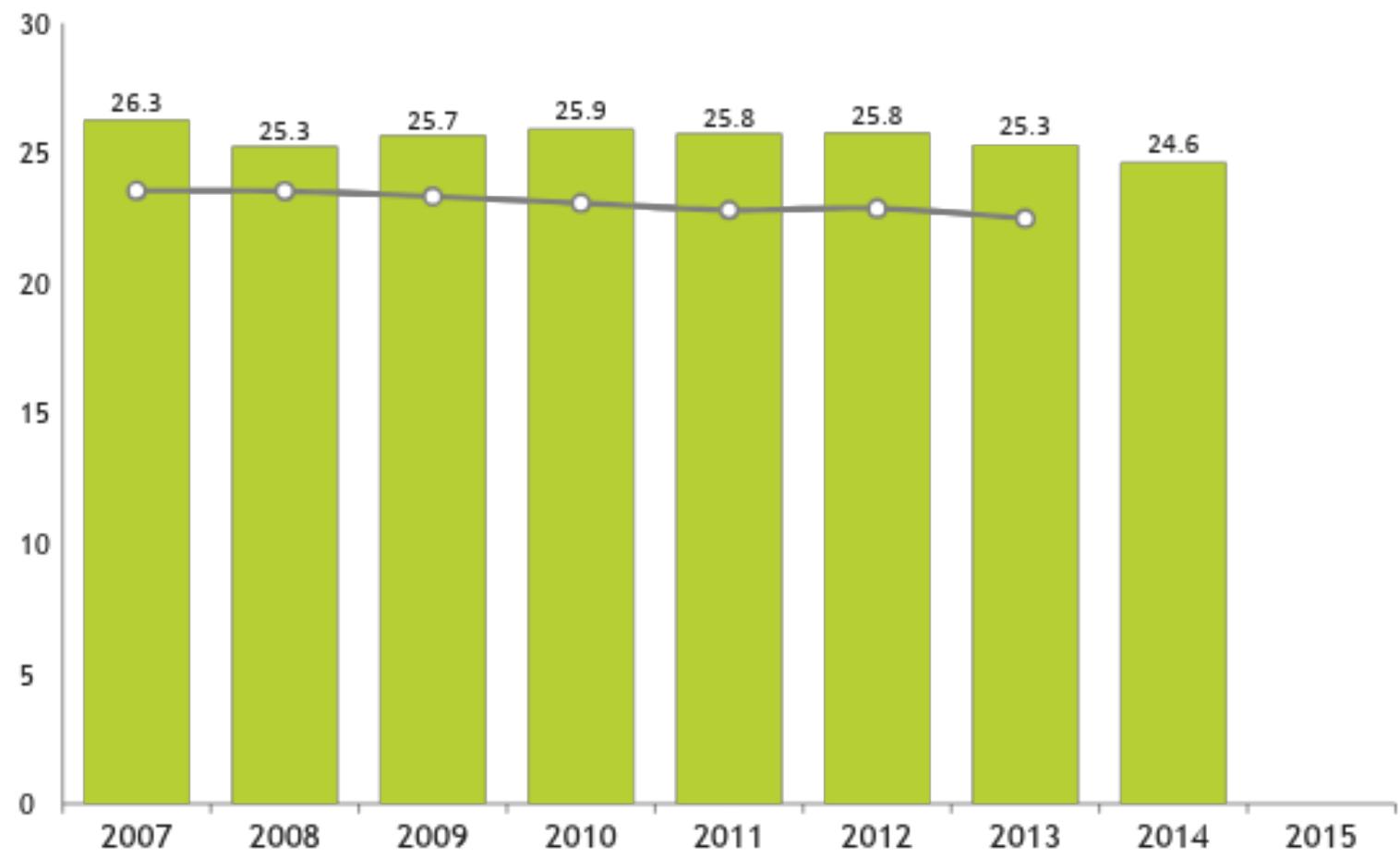
## KBTU/HOUSEHOLD/DAY - 2007-2013 AVERAGE



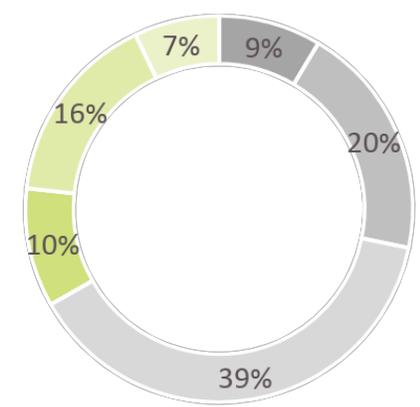


# VEHICLE TRAVEL

## SAINT LOUIS PARK



VEHICLE TRAVEL BY ROAD TYPE

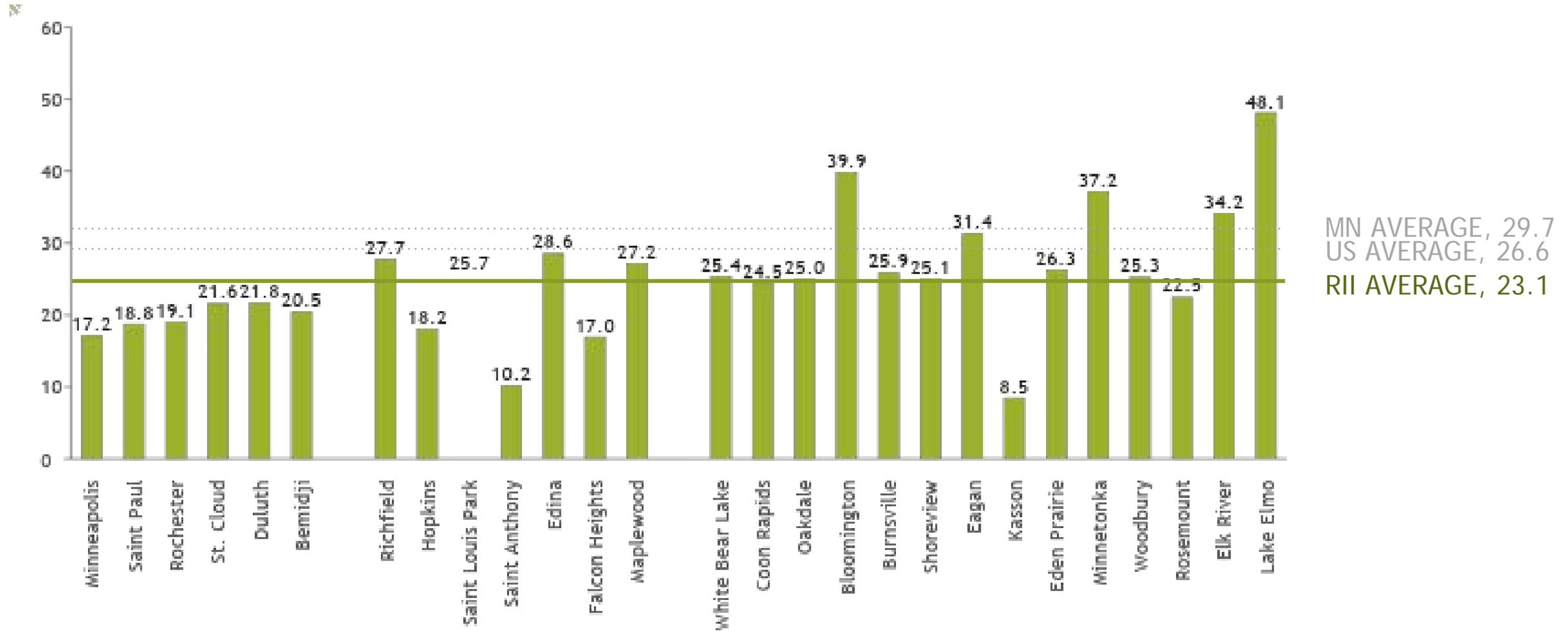


- Interstate Trunk Highway (ISTH)
- US Trunk Highway (USTH)
- Minnesota Trunk Highway (MNTH)
- County State Aid Highway (CSAH)
- Municipal State Aid Street (MSAS)
- Municipal Streets (MUN)



# VEHICLE MILES TRAVELED

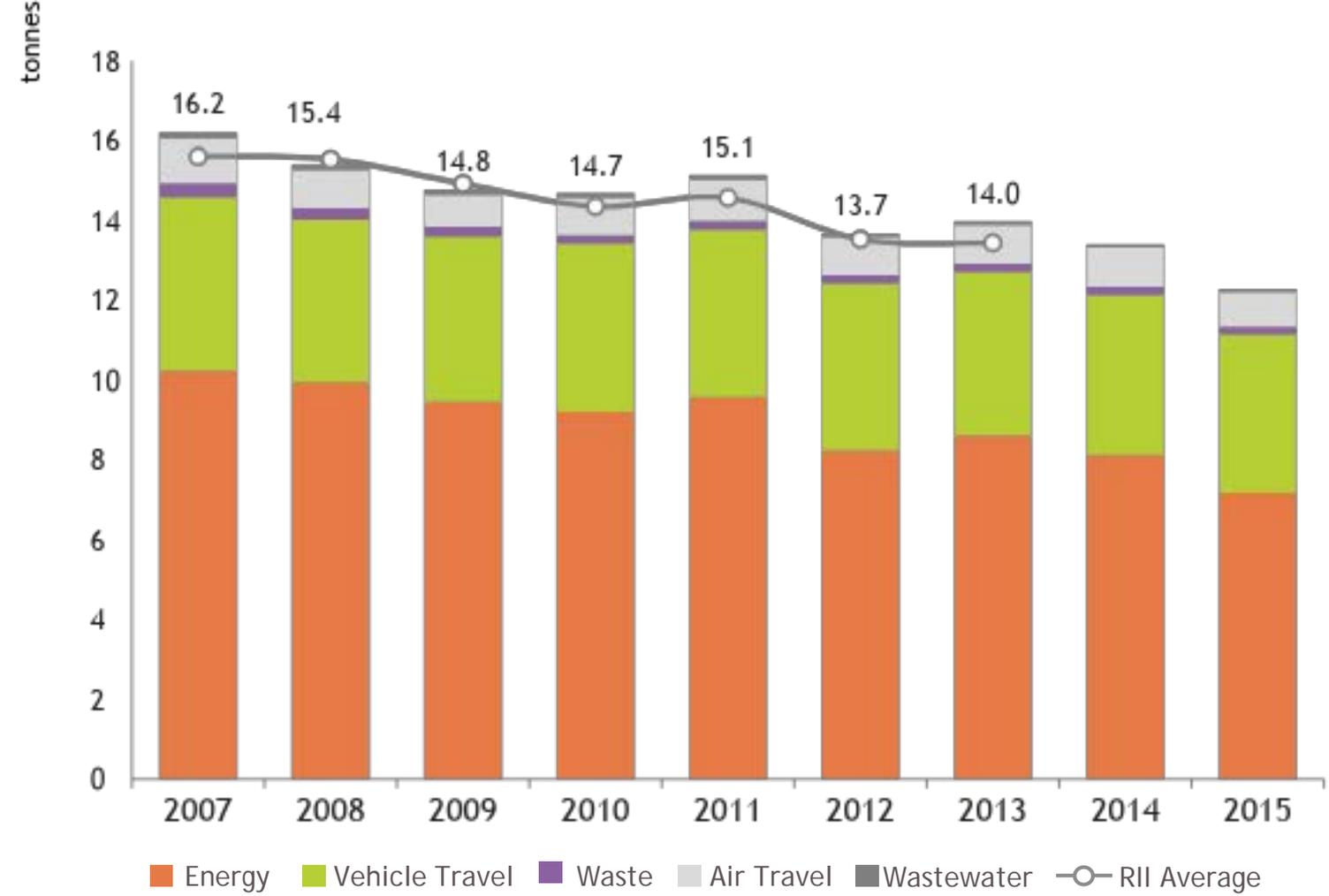
## VMT/CAPITA/DAY - 2007-2013 AVERAGE



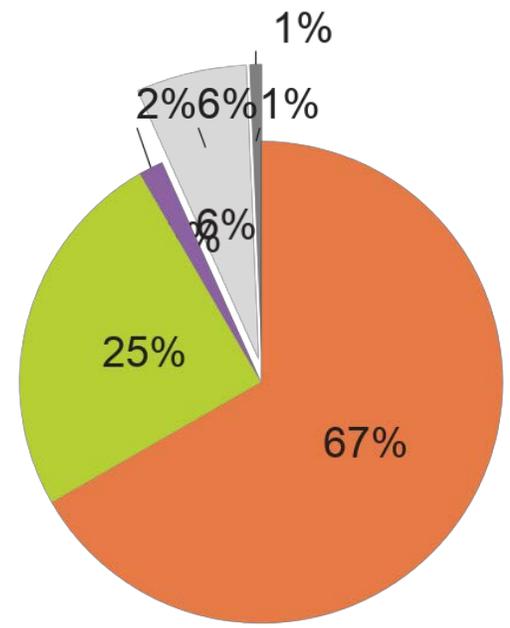


# GREENHOUSE GAS EMISSIONS

## SAINT LOUIS PARK



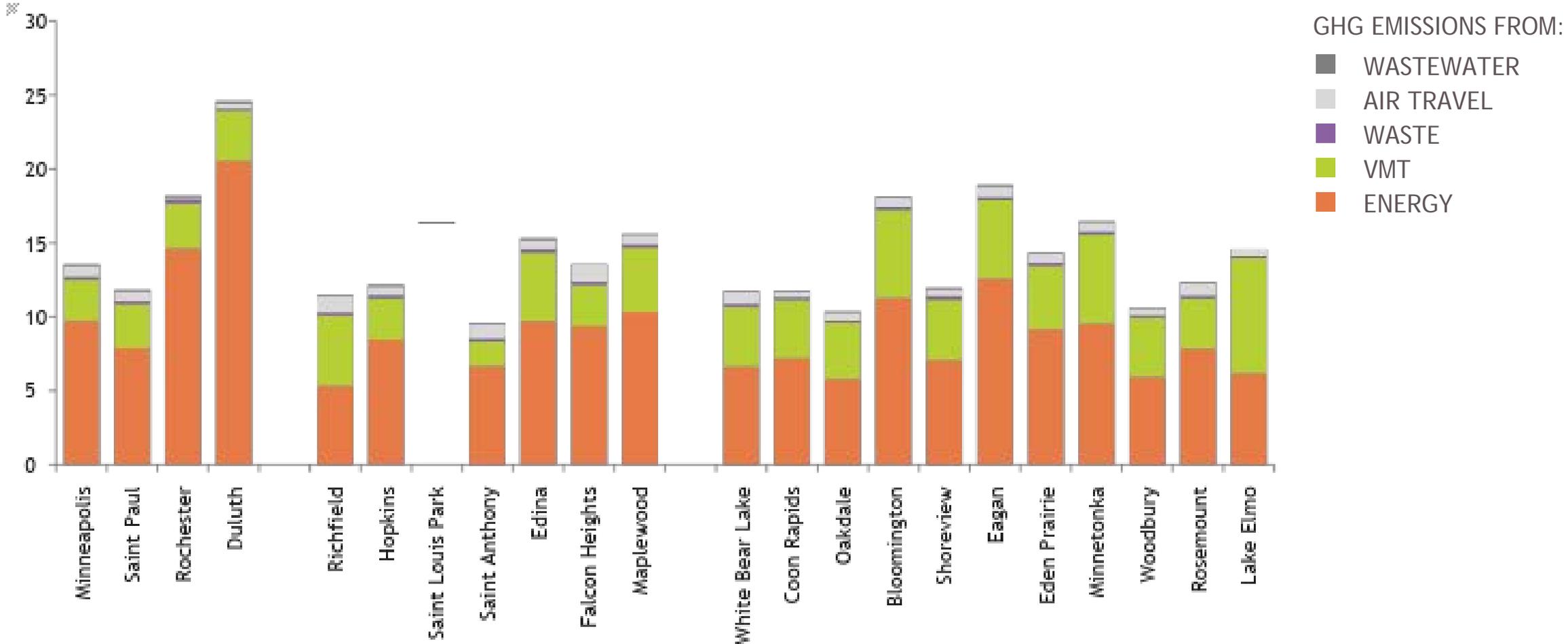
## REGIONAL INDICATORS AVERAGE





# GREENHOUSE GAS EMISSIONS

TONNES CO2E/CAPITA/DAY - 2012





## ENERGY PLANNING TOOLS:

- A brief guide on how to incorporate energy and/or climate resilience in a city's [request for proposals](#)
- An energy planning [guide](#) and [workbook](#)
- An [example analysis of energy existing conditions](#)
- [Example local government energy goals](#)
- A [solar energy calculator](#) to assist in setting solar energy development goals
- A [wedge diagram tool](#) for energy and greenhouse gas reduction planning with an associated menu of feasible city actions

<http://www.regionalindicatorsmn.com/energy-planning>





## LESSONS LEARNED:

- It is easy for cities to lead by example; they are just beginning to explore opportunities for regulation, incentives and encouragement.
- The large number of players and programs in this area can be overwhelming to cities.
- Expanding to the statewide scale (and beyond) requires overcoming barriers such as:
  - Sustainable funding
  - Streamlined data collection process
  - Balance between generic vs. regional data (e.g. for wedge tool strategies)



## 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  
 Beltrami Electric Cooperative  
 CenterPoint Energy  
 Connexus Energy  
 Dakota Electric Association  
 Duluth Comfort Systems  
 Duluth Steam Cooperative  
 Elk River Municipal Utilities  
 Great River Energy  
 Hennepin Energy Recovery Center  
 Minnesota Energy Resources  
 Minnesota Power  
 Minnesota Valley Electric Cooperative  
 NRG Energy  
 Olmsted County Waste to Energy Facility  
 Otter Tail Power Company  
 People's Energy Cooperative  
 Rochester Public Utilities  
 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



PERFORMANCE  
DRIVEN DESIGN.



ORANGE  
ENVIRONMENTAL



Energy Transition Lab

UNIVERSITY OF MINNESOTA  
Driven to Discover<sup>SM</sup>



Urban Land Institute Minnesota



Minnesota Pollution Control Agency



GREAT PLAINS INSTITUTE

Better Energy.  
Better World.



COMMERCE DEPARTMENT

<http://www.regionalindicatorsmn.com/>



## The Power of Partnerships

**Shannon Pinc**

Environment & Sustainability Coordinator

City of St. Louis Park, MN





# City of St. Louis Park, MN

## The Power of Partnerships

Shannon Pinc

Photo: Discover St. Louis Park

# Partnerships

Public



Private



Community





# Mn Dept. of Commerce



## Made in Minnesota (MiM)

39kW solar array on Fire Station #2



LHB



## REGIONAL INDICATORS INITIATIVE

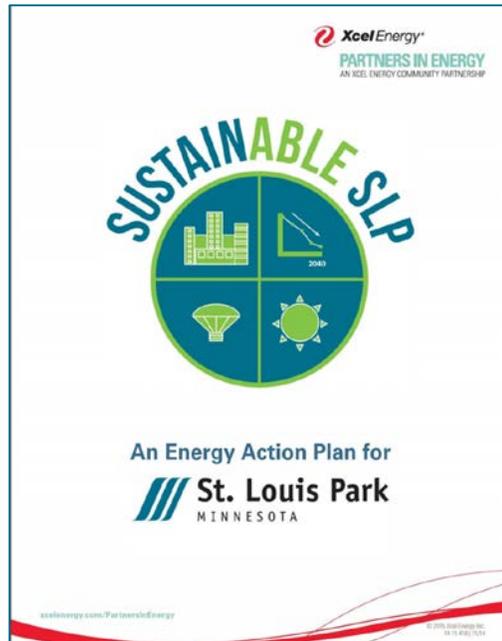
St. Louis Park  
Green Building Policy



# Xcel Energy



**PARTNERS IN ENERGY**  
AN XCEL ENERGY COMMUNITY PARTNERSHIP



City Hall  
Police Station  
Fire Station #1  
Fire Station #2

# Youth



**iMATTER**

SLP Roots & Shoots  
Environmental Club



## St. Louis Park Climate Action Plan

# 2040

Setting a course toward carbon neutrality

“The time to act is now. We shouldn't have to be afraid of our future”

--Jayne Stevenson, youth member of the Environment and Sustainability Commission

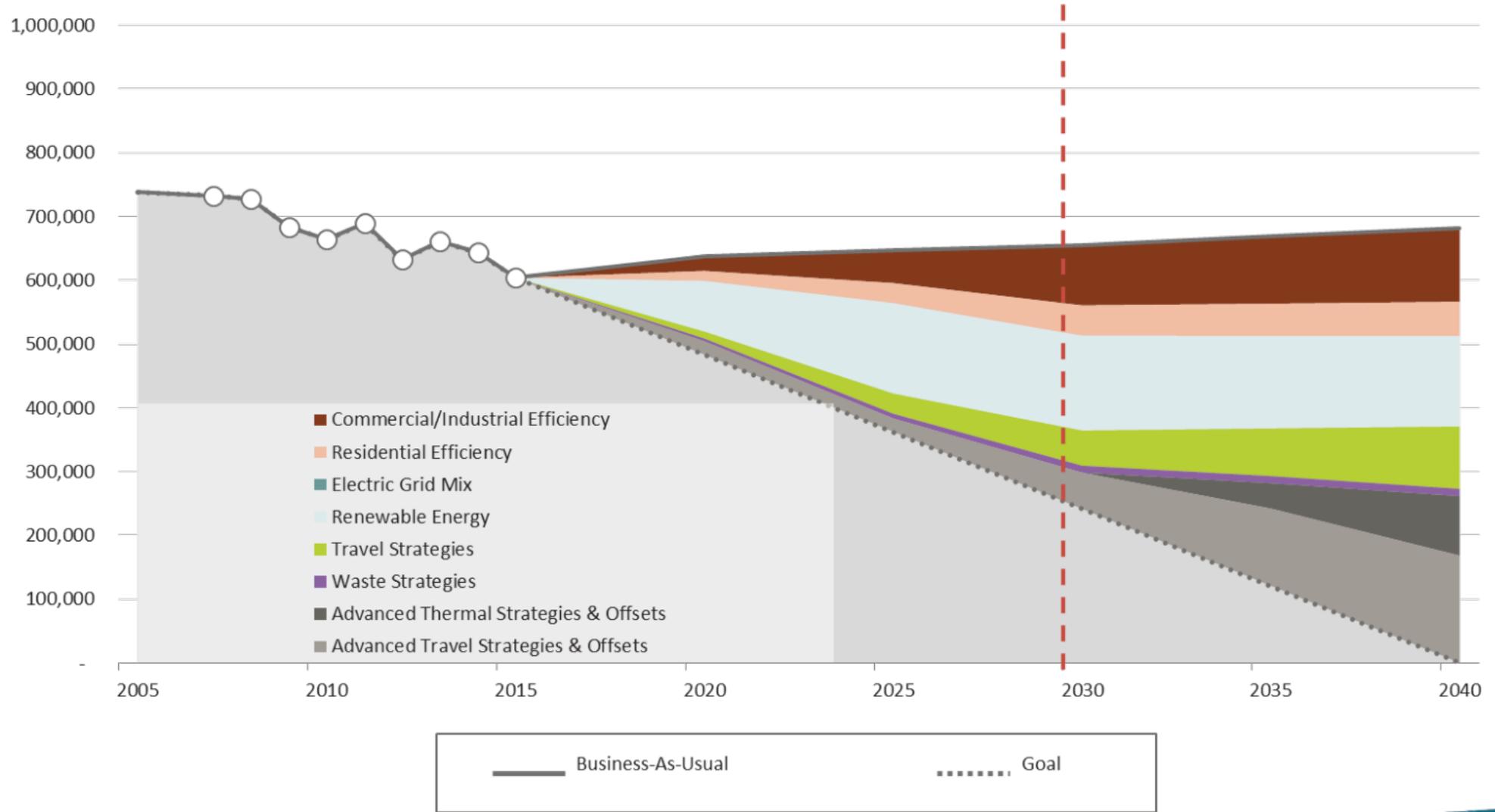
2018 Kick Start Goals  
2030 Mid Term Goals  
Advanced Strategies  
Municipal Focus

# CAP 2030 Mid-Term Goals

Impact	Goals
<b>Building Energy Efficiency</b> <b>21.7%</b>	<ol style="list-style-type: none"><li>1. Reduce energy consumption in large commercial buildings 30%</li><li>2. Reduce energy consumption in small to mid-size commercial buildings</li><li>3. Design all new construction to be net-zero energy</li><li>4. Reduce energy consumption in residential buildings by 35%</li></ol>
<b>Renewable Electricity</b> <b>23.3%</b>	<ol style="list-style-type: none"><li>5. Achieve 100% renewable electricity</li></ol>
<b>Travel</b> <b>8.4%</b>	<ol style="list-style-type: none"><li>6. Reduce vehicle emissions 25%</li></ol>
<b>Solid Waste</b> <b>1.1%</b>	<ol style="list-style-type: none"><li>7. Reduce solid waste 50%</li></ol>

# PLANNED EMISSIONS REDUCTIONS BY SECTOR

tonnes CO2e



# Thank you!

**Shannon Pinc**  
**Environment & Sustainability Coordinator**  
**[spinc@stlouispark.org](mailto:spinc@stlouispark.org)**

# Questions