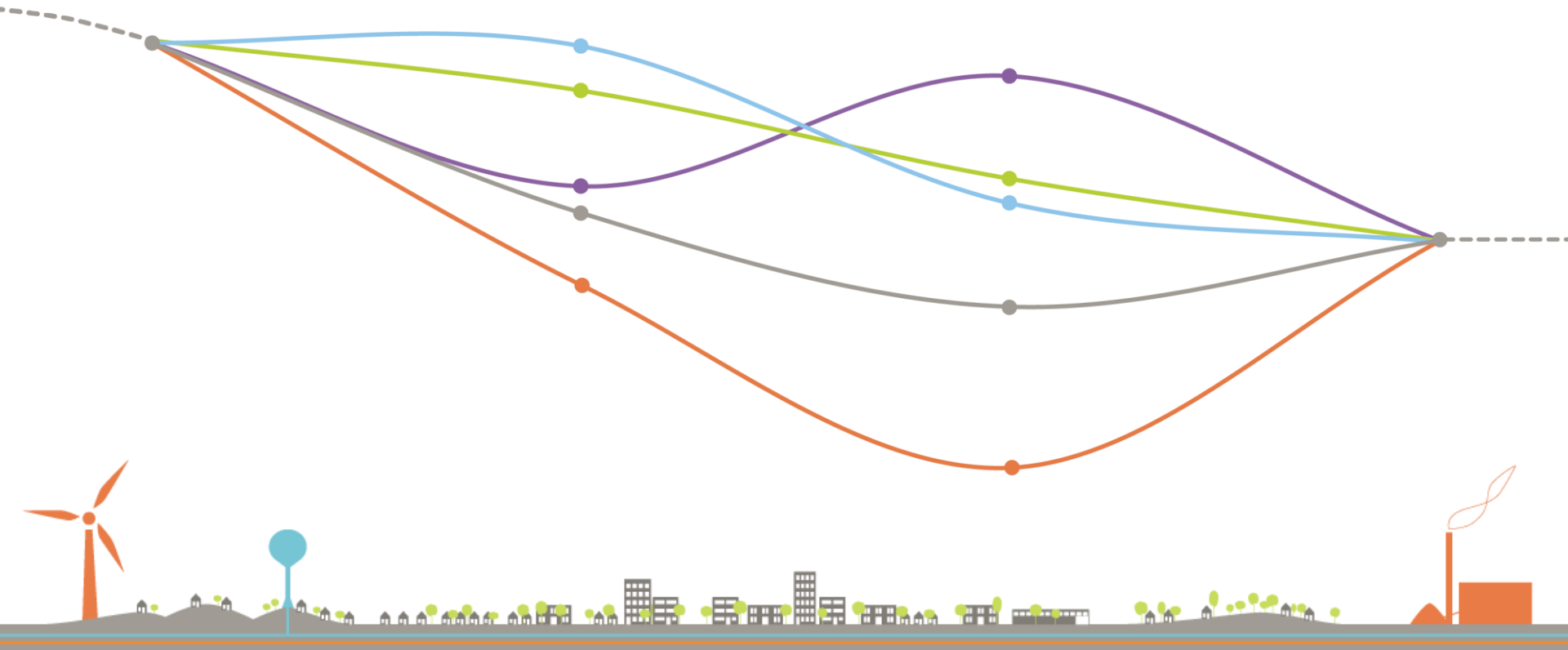
REGIONAL INDICATORS INITIATIVE

ULI MN RCM

Rick Carter, LHB Inc. and Jon Commers, Metropolitan Council

An Inventory of Energy, Potable Water, Travel, Waste, and Greenhouse Gas Emissions for Twenty one Minnesota Cities from 2008 to 2012.



October 14, 2013

REGIONAL INDICATORS INITIATIVE

PARTICIPATING CITIES

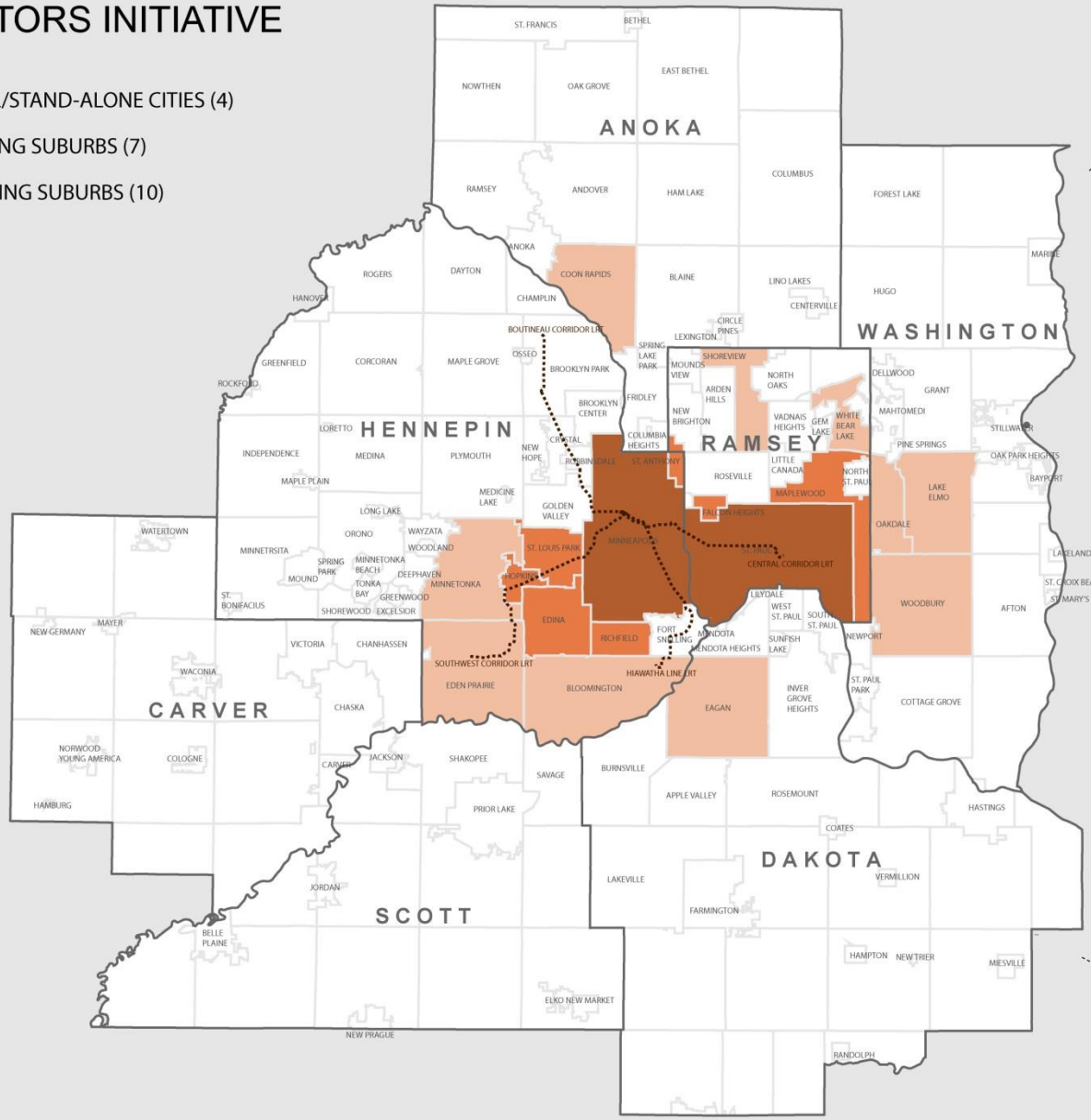
- RII PARTICIPANTS - CENTRAL/STAND-ALONE CITIES (4)
- RII PARTICIPANTS - INNER-RING SUBURBS (7)
- RII PARTICIPANTS - OUTER-RING SUBURBS (10)

The Regional Indicators Initiative participants include:

of the seven county metropolitan area population,
1,330,326 PEOPLE

and:

of total MN population
1,525,529 PEOPLE



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_2E): citywide greenhouse gas emissions associated with each of the four indicators

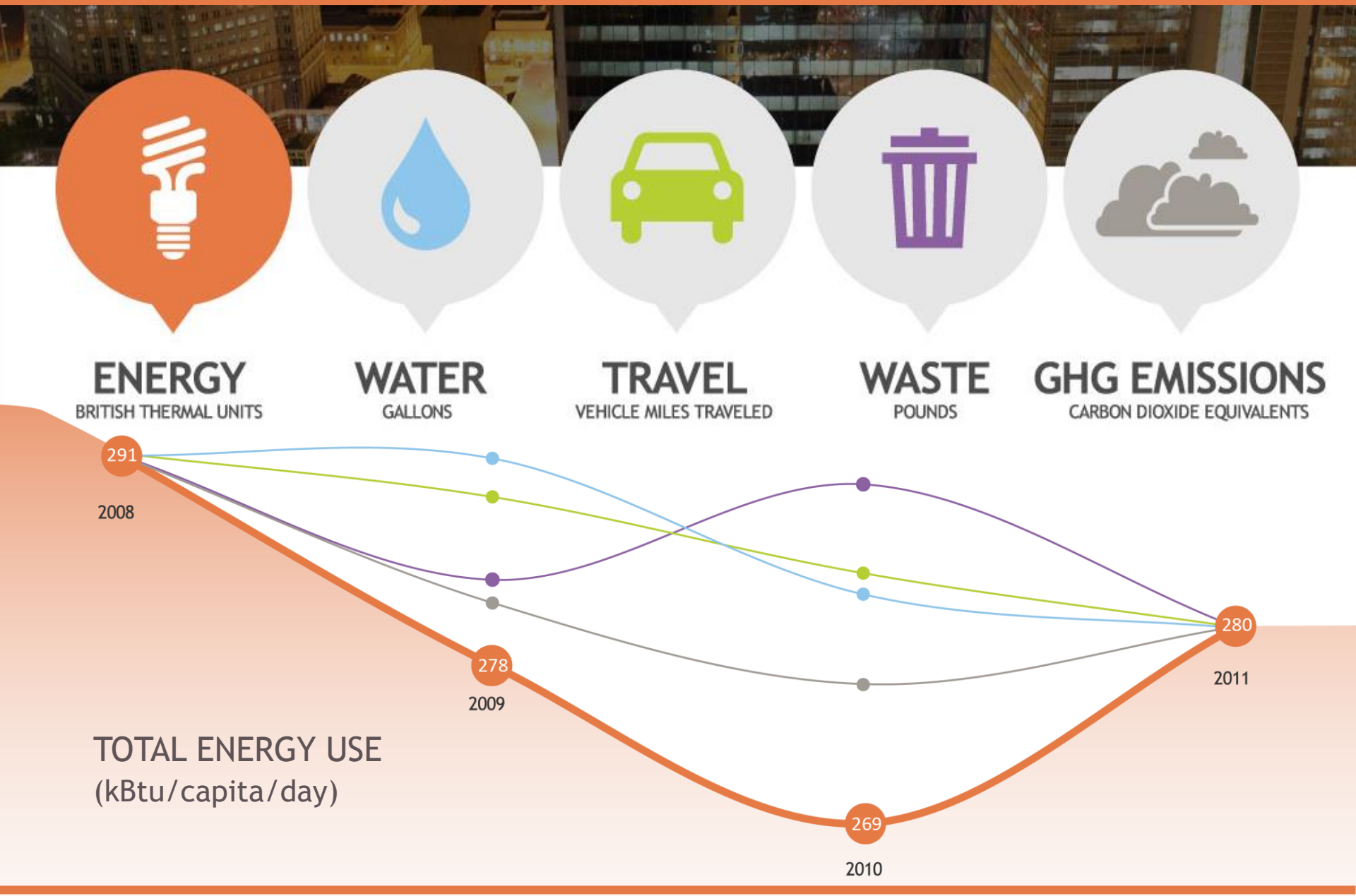
COST (IN DOLLARS): cost estimates associated with each of the four indicators

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

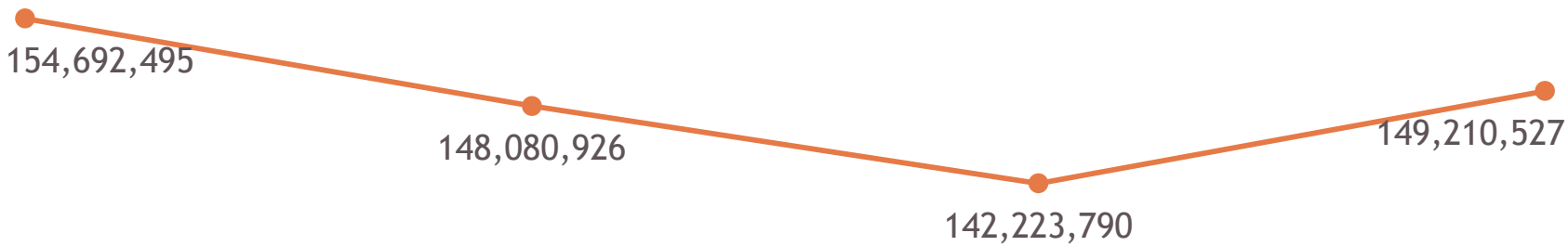
AREA
City Area (sf)

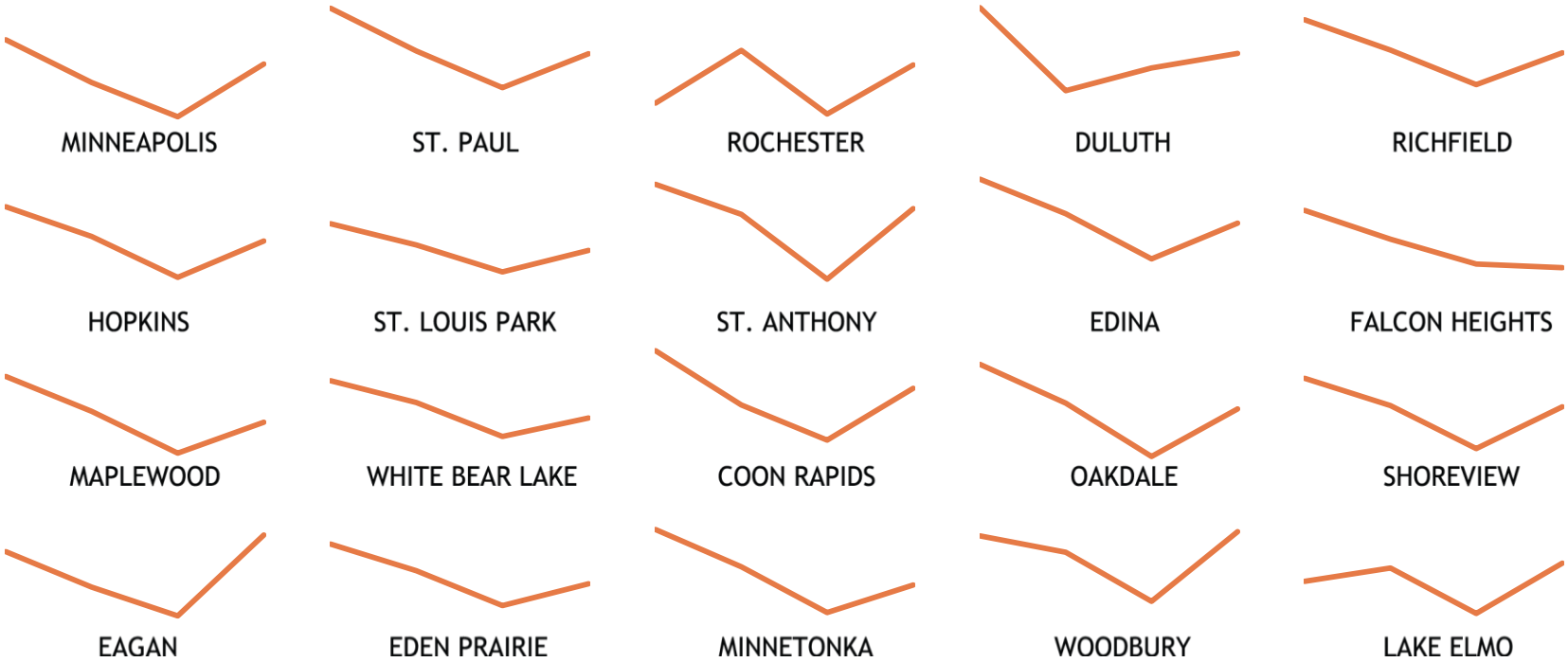
WEATHER
Heating Degree Days
Cooling Degree Days
Precipitation (in)


ENERGY
BRITISH THERMAL UNITS
WATER
GALLONS
TRAVEL
VEHICLE MILES TRAVELED
WASTE
POUNDS
GHG EMISSIONS
CARBON DIOXIDE EQUIVALENTS
291
2008
278
2009
269
2010
280
2011
TOTAL ENERGY USE
(kBtu/capita/day)

THE 'CHECK MARK' TREND

TOTAL ENERGY USE 2008-2011 (MMBtu/year)

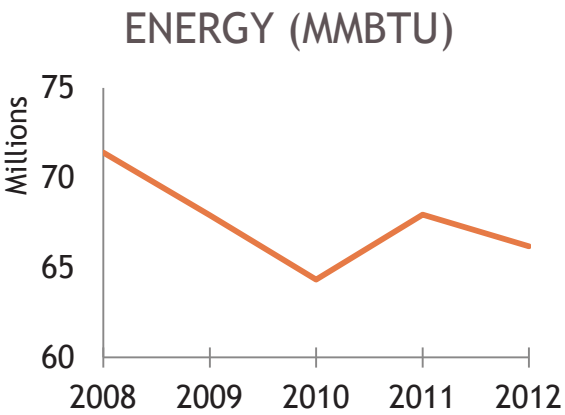


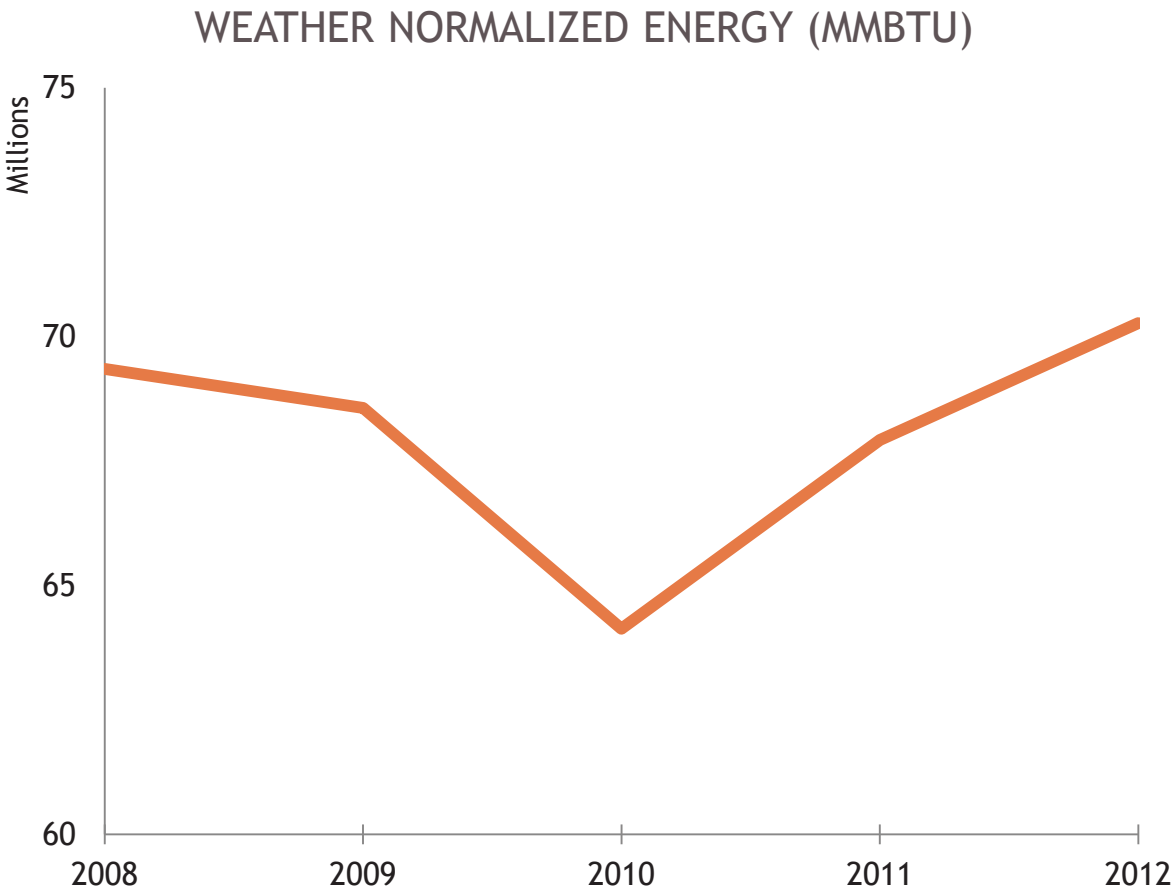


INITIAL 2012 DATA

ELEVEN CITIES

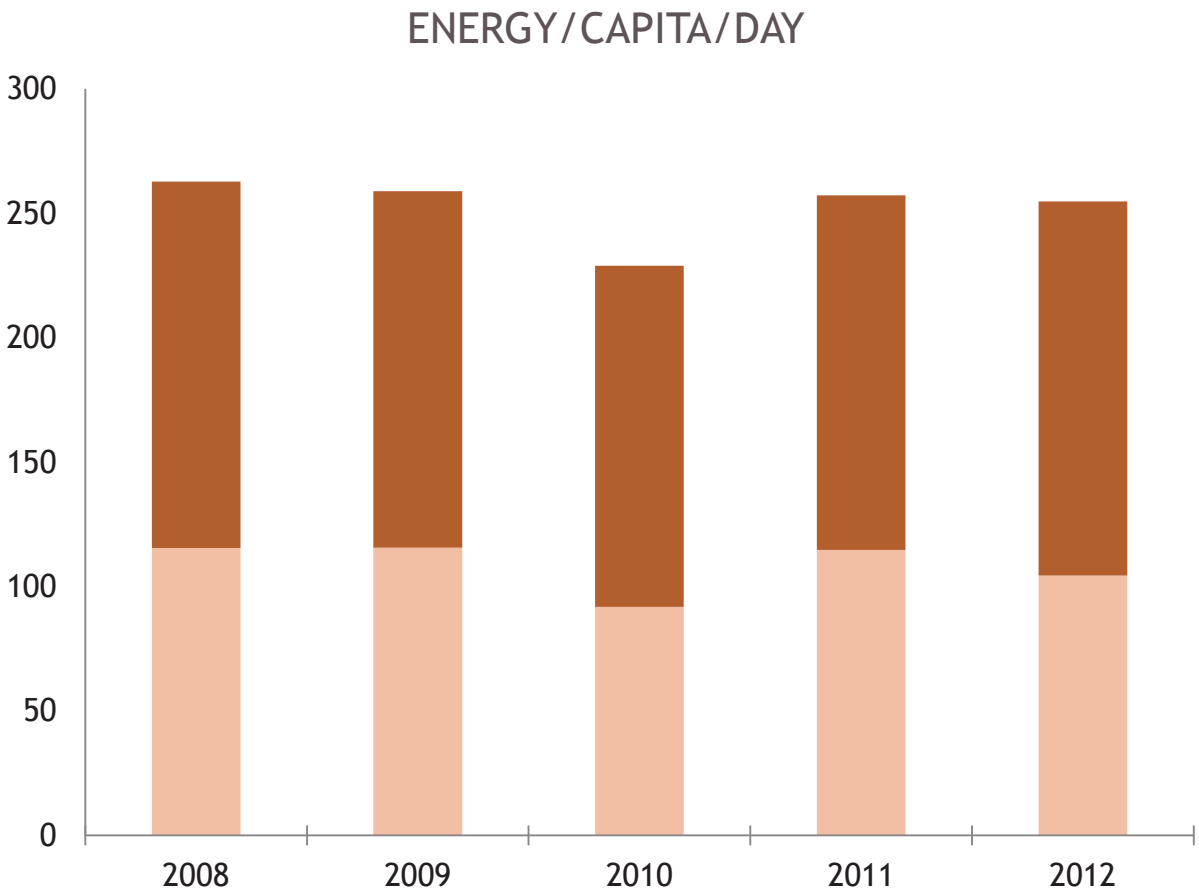
2012 was a hot year, with increased electricity use from 2011 and decreased natural gas use in all eleven cities with complete energy data.

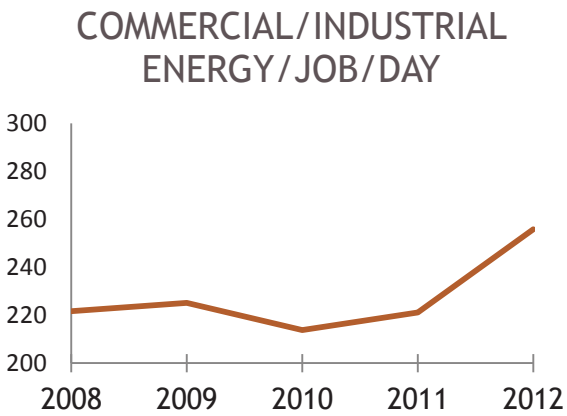


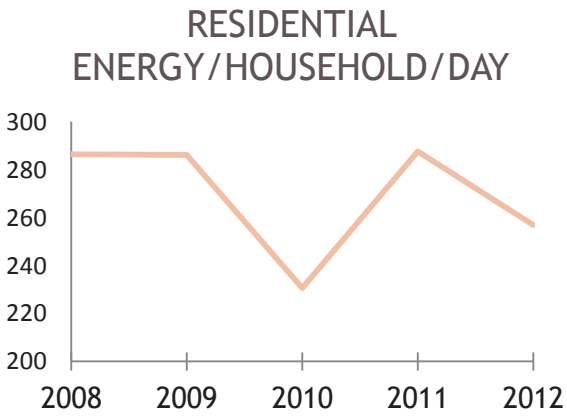


INITIAL 2012 DATA

ELEVEN CITIES – WEATHER NORMALIZED

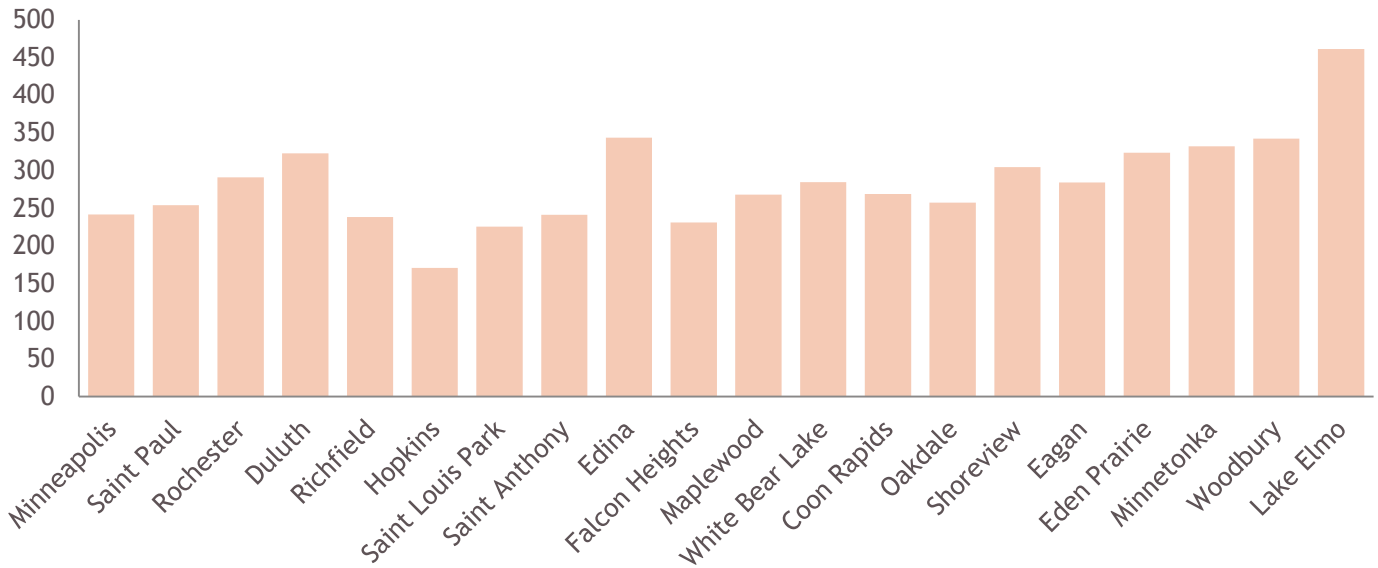






EXPLORE THE DATA

RESIDENTIAL ENERGY – 2011 (kBtu/household/day)



CITIES

- [x] ALL CITIES
- [ ] ALL CENTRAL / STAND-ALONE
  - [ ] Duluth
  - [ ] Minneapolis
  - [ ] Rochester
  - [ ] St. Paul
- [ ] ALL INNER-RING SUBURBS
  - [ ] Richfield
  - [ ] Hopkins
  - [ ] St. Louis Park
  - [ ] St. Anthony
  - [ ] Edina
  - [ ] Falcon Heights
  - [ ] Maplewood
- [ ] All OUTER-RING SUBURBS
  - [ ] White Bear Lake
  - [ ] Coon Rapids
  - [ ] Oakdale
  - [ ] Shoreview
  - [ ] Eagan
  - [ ] Eden Prairie
  - [ ] Minnetonka
  - [ ] Woodbury
  - [ ] Lake Elmo

TIMELINE

- [ ] ALL YEARS (2008-2011)
- [ ] 2008
- [ ] 2009
- [ ] 2010
- [x] 2011

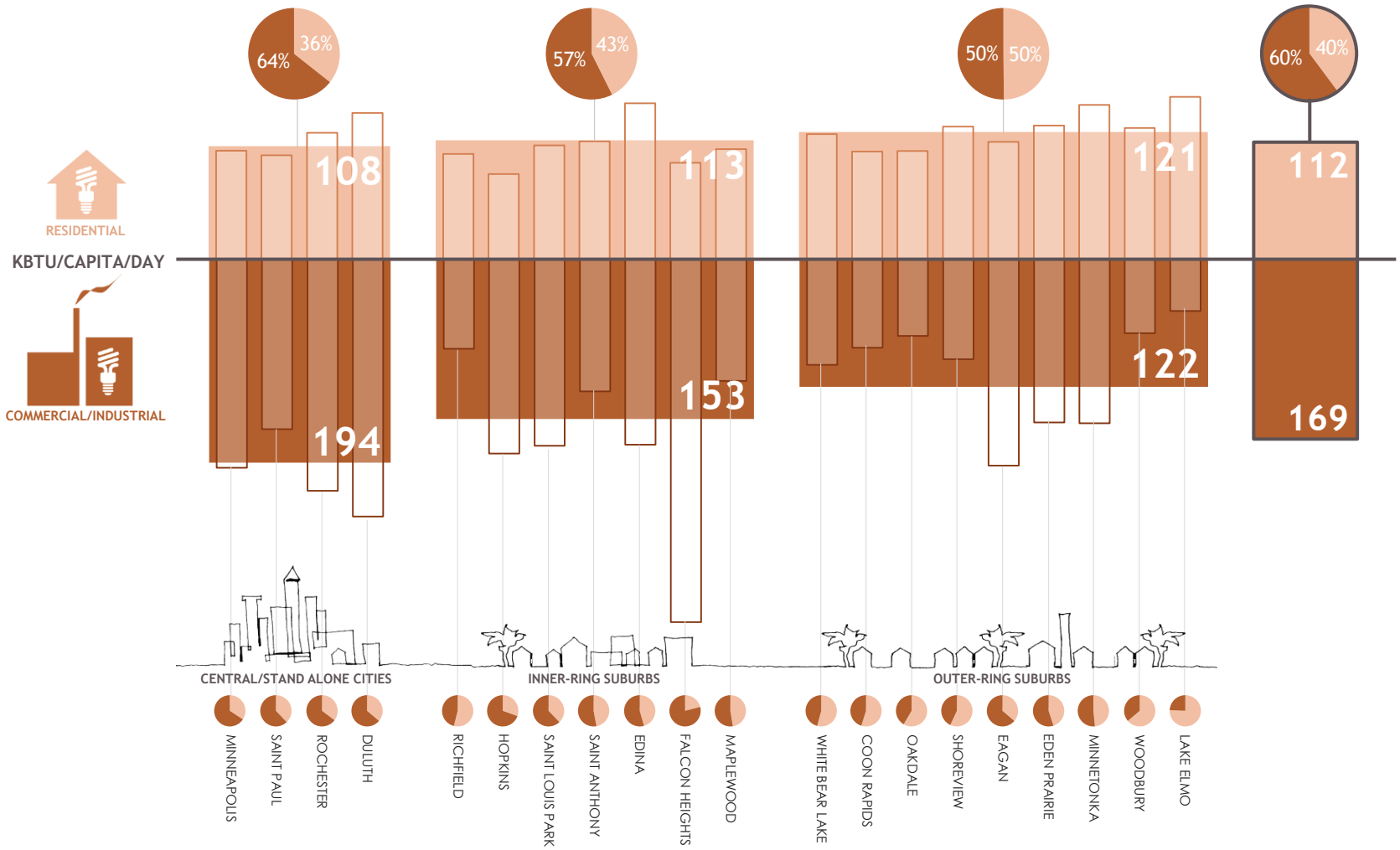
ADD AVERAGES

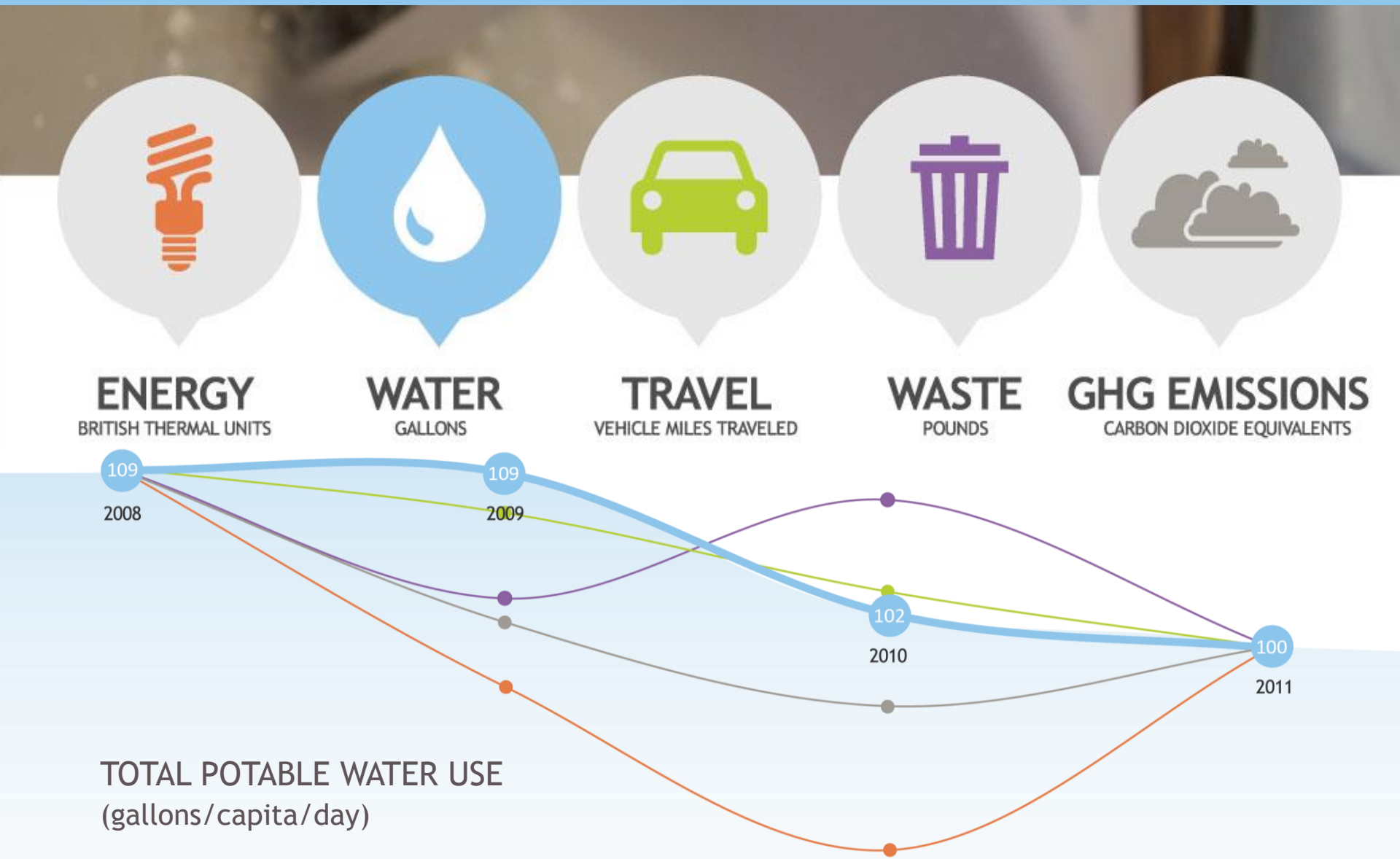
- [ ] Central/Stand-Alone Cities
- [ ] Inner-Ring Suburbs
- [ ] Outer-RIng Suburbs
- [ ] MN State average
- [ ] US Average

NORMALIZE

- [ ] None
- [ ] By Population (per capita)
- [ ] By Weather/Rainfall
- [x] By Household
- [ ] By Job

ENERGY USE - 2011

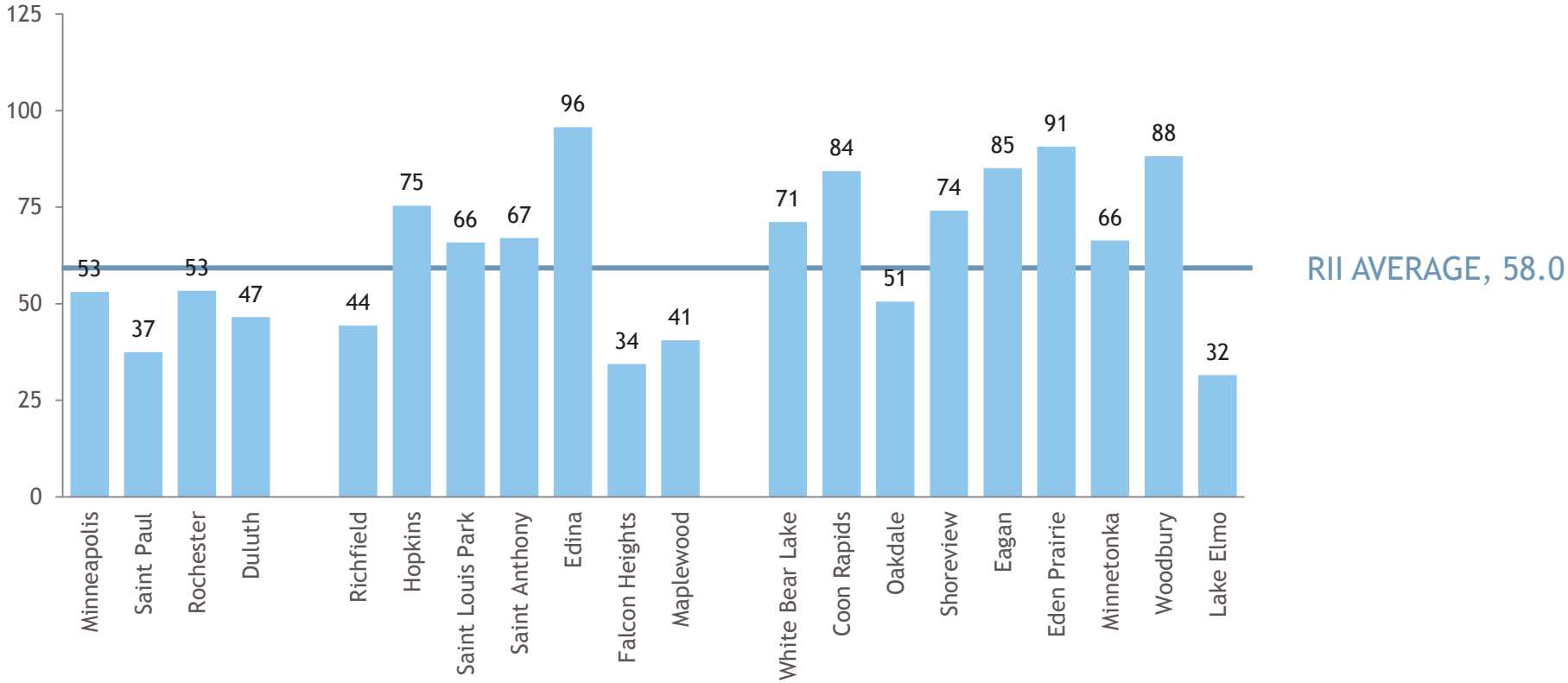




TOTAL POTABLE WATER USE
(gallons/capita/day)

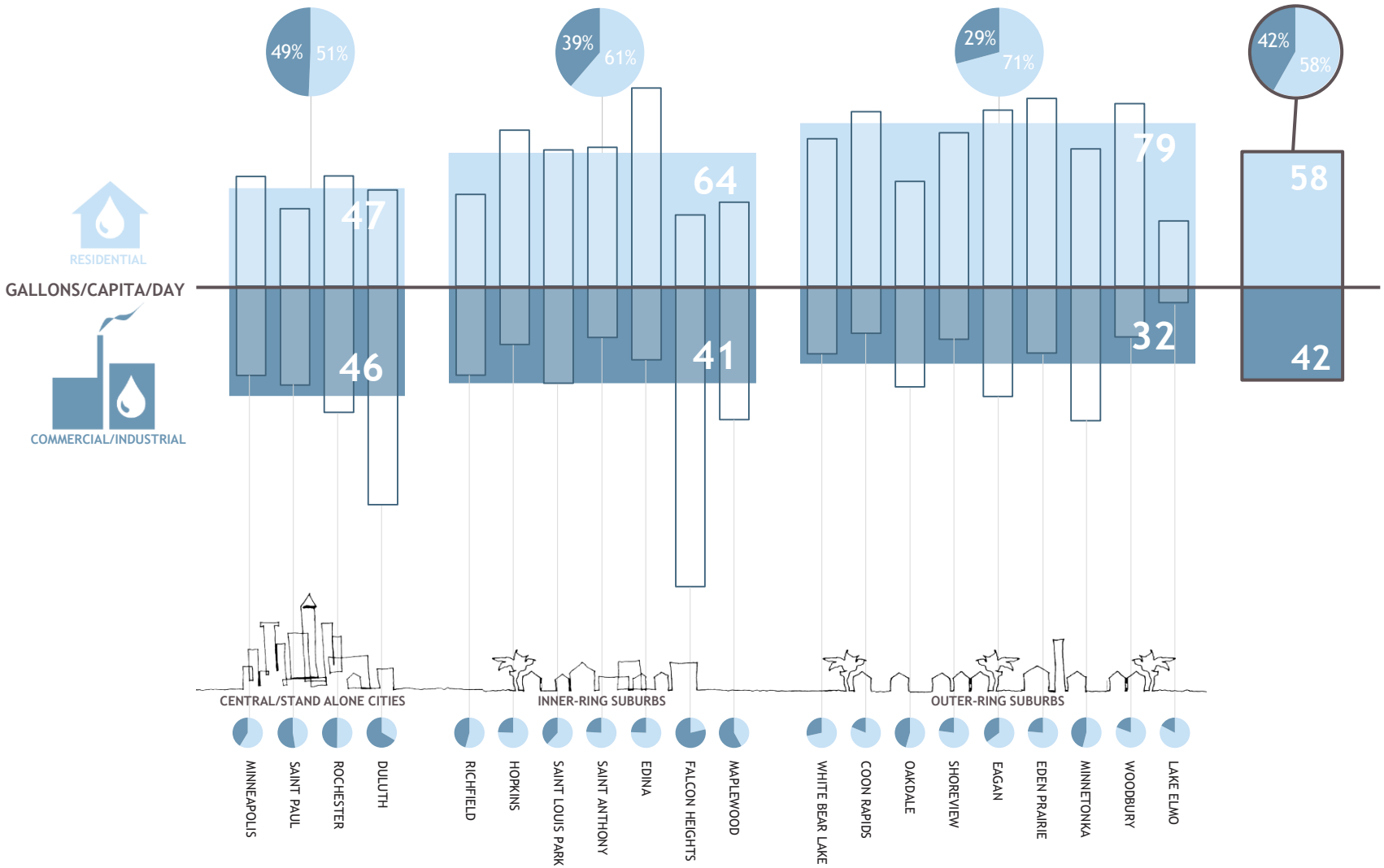
RESIDENTIAL WATER USE

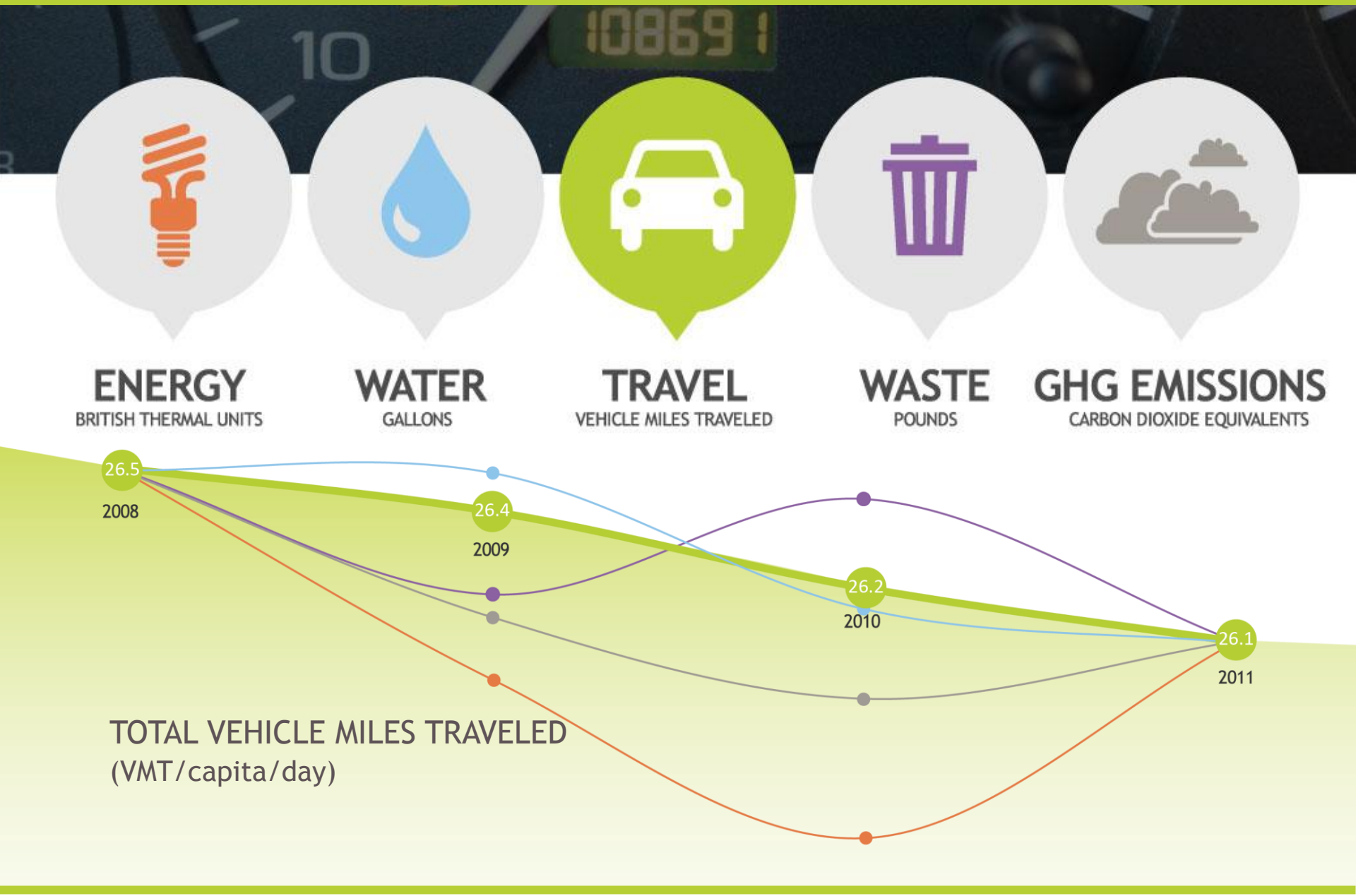
GALLONS/CAPITA/DAY - 2011



CENTRAL/STAND-ALONE CITIES	INNER-RING SUBURBS	OUTER-RING SUBURBS
47.3	64.4	78.8

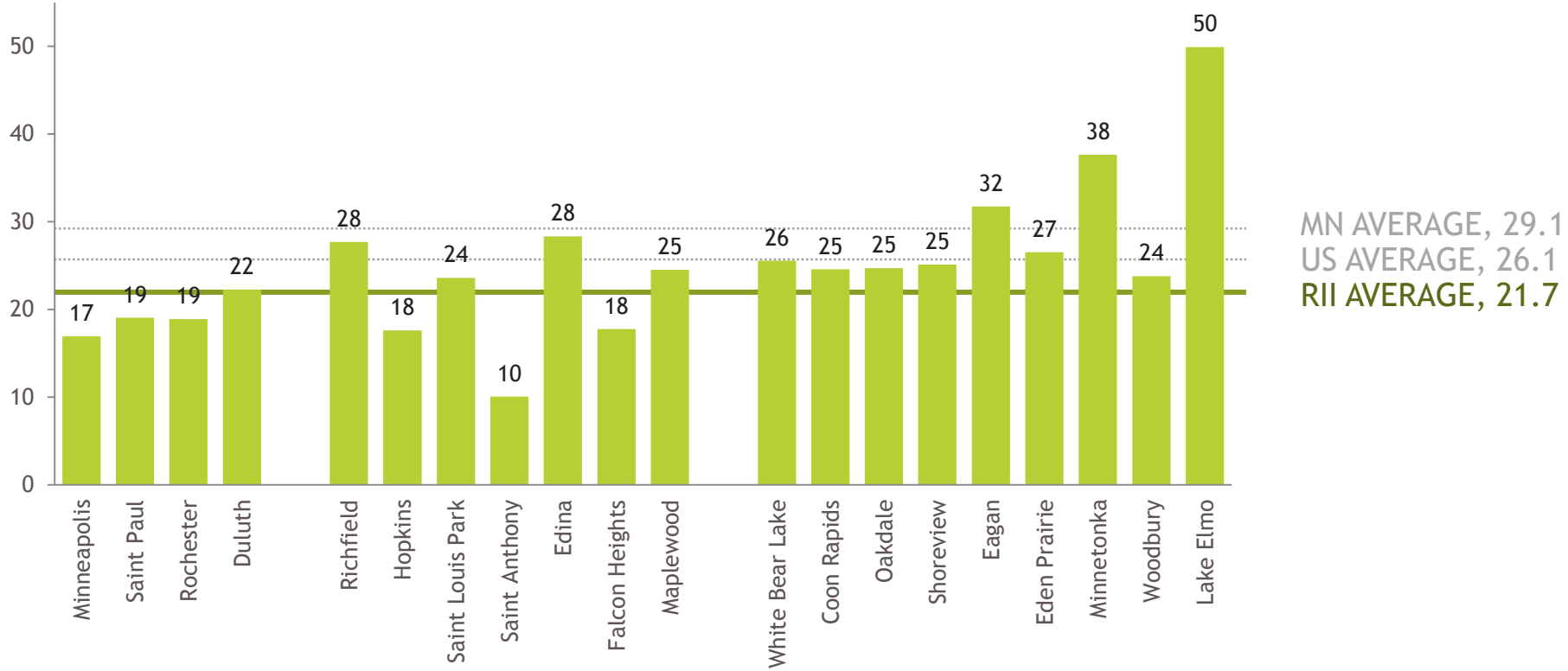
WATER USE - 2011




ENERGY
BRITISH THERMAL UNITS
WATER
GALLONS
TRAVEL
VEHICLE MILES TRAVELED
WASTE
POUNDS
GHG EMISSIONS
CARBON DIOXIDE EQUIVALENTS
26.5
2008
26.4
2009
26.2
2010
26.1
2011
TOTAL VEHICLE MILES TRAVELED
(VMT/capita/day)

VEHICLE MILES TRAVELED INCREASES AT GREATER DISTANCES FROM CENTRAL CITIES

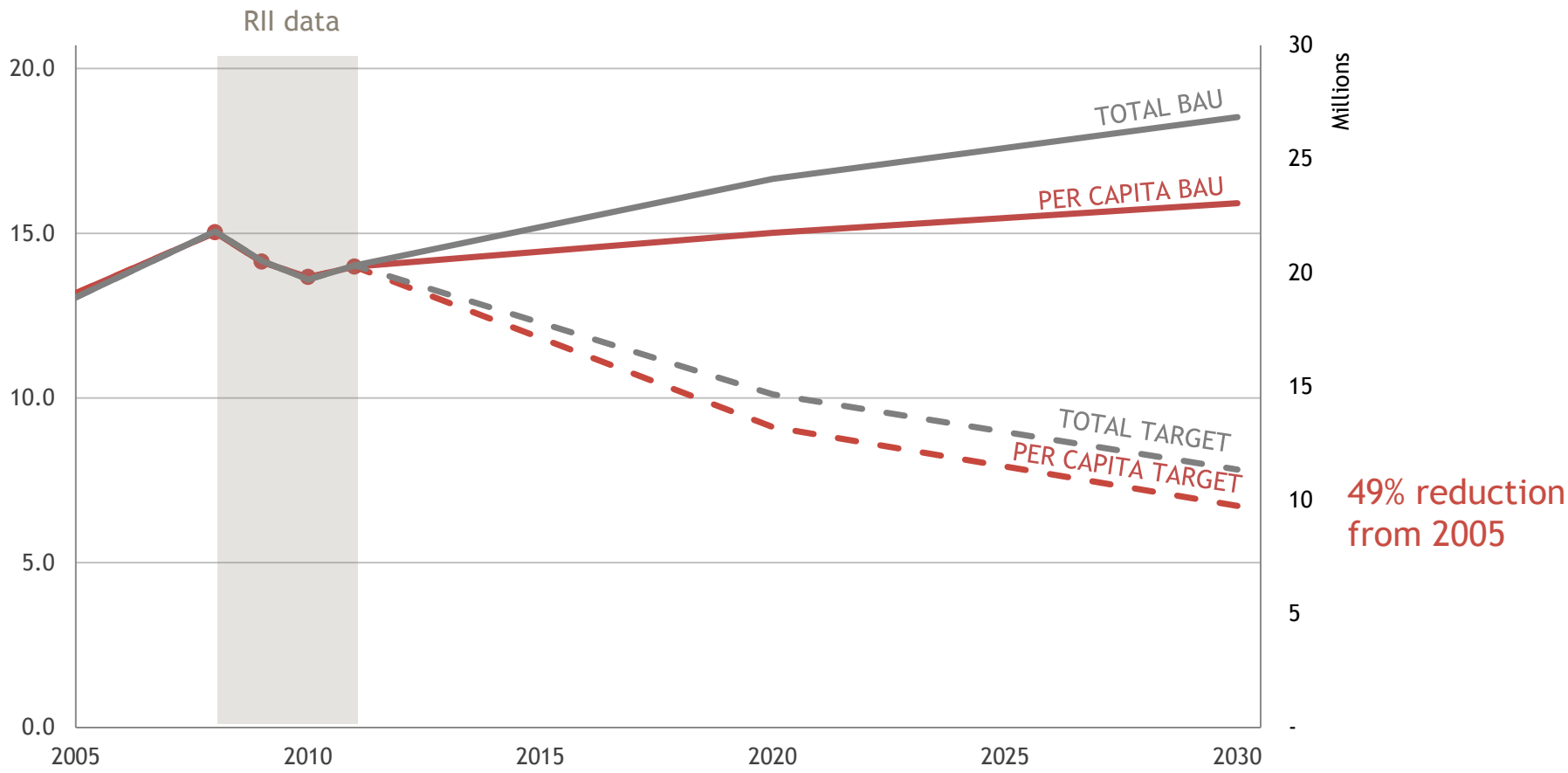
VMT/CAPITA/DAY - 2011



CENTRAL/STAND-ALONE CITIES	INNER-RING SUBURBS	OUTER-RING SUBURBS
19.5	21.4	30.1

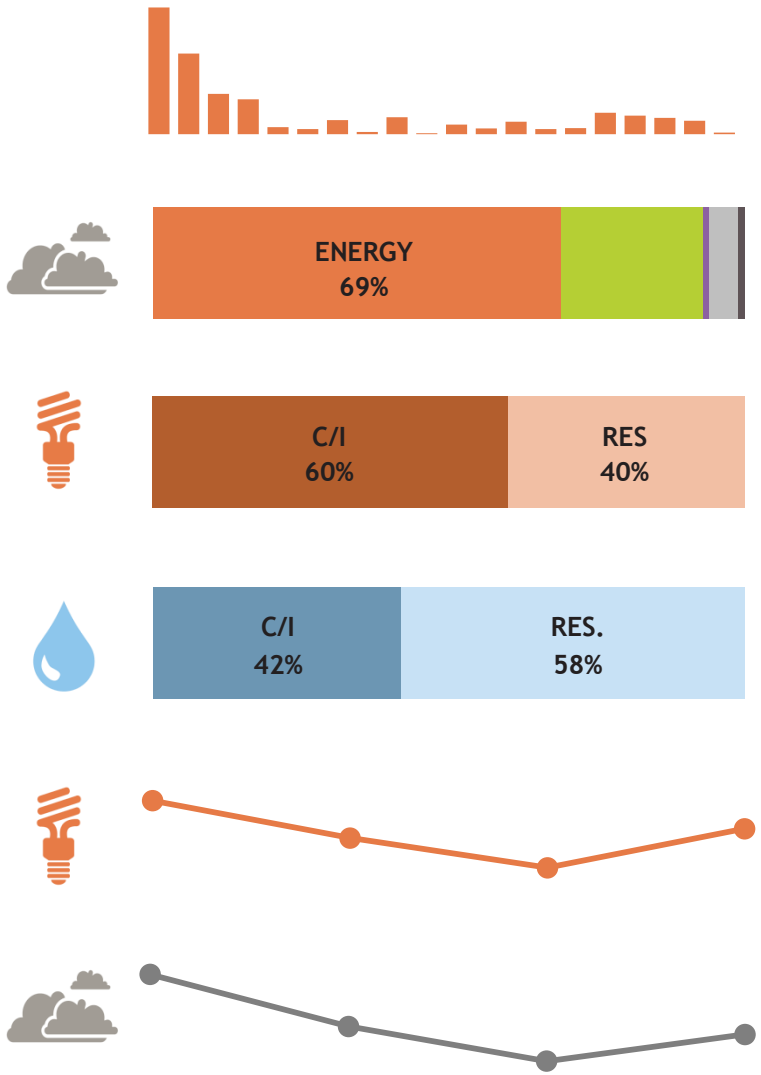
SO WHAT?

TOTAL GREENHOUSE GAS EMISSIONS FROM PRIMARY SOURCES (tonnes CO_2e/capita/year)



CONCLUSIONS

- It is possible to measure community-wide data and normalize by jobs, population, households, and weather
- This data collection helps cities establish a baseline to enable action and track their progress over time.
- Minnesota cities are interested in reducing their emissions, but our data shows that emissions are increasing.
- The Metropolitan Council has begun the process of incorporating the Regional Indicators into the Thrive 2040 process.
- A next step could be reporting indicators in city comprehensive plans



Select recommendations from Minnesota Climate Change Advisory Group report

- Target growth in ways that reduce the number and length of vehicle trips
- Expand infrastructure and programs to increase transit ridership, carpooling, bicycling, and walking
- Prioritize existing roads and design new and expanded roads to serve higher-density, more compact, pedestrian-friendly development in priority growth areas
- Reduce investment in new roads and roadway expansion that accommodate and encourage both low-density development and more and longer vehicle trips

METROPOLITAN COUNCIL

Council directions on climate change

- Continue to advance operational sustainability in wastewater and Metro Transit
- Use climate change as a lens for policy and operational decisions
- Develop expertise in developing, collecting and disseminating information about climate change, including energy and climate data, the next generation of the Regional Indicators data, and a regional greenhouse gases inventory
- Provide technical assistance to the region's local governments around climate change mitigation and adaptation
- Encourage local governments to plan and prepare for climate change, including incorporating climate change planning into their local comprehensive plans.
- Collaborate with regional leadership and convene local governments and the broader community to address climate change mitigation and adaptation within the region

METROPOLITAN COUNCIL