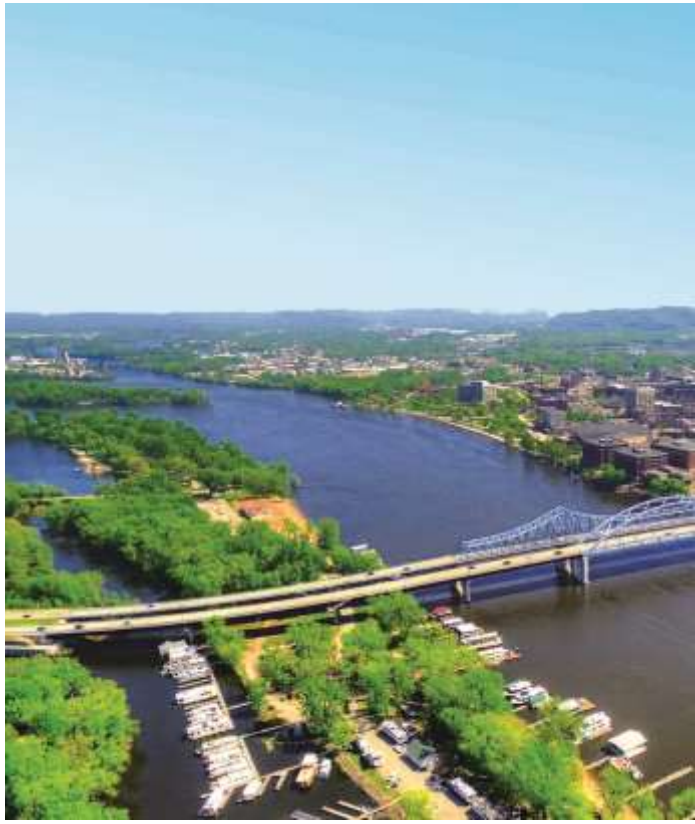
Sustainability Workshop for La Crosse Small Businesses and Organizations

Retooling for a New Energy Economy

La Crosse Sustainability Toolkit for Small Business



Welcome!

Climate Alliance for the Common Good / City of La Crosse

- About the Climate Alliance
- Toolkit/ Workshop Funding:

Trane Company part of Trane Technologies.

Welcome!

Tom Schlesinger

- PhD, Masters
- Gundersen Strategic Planner, retired
- Executive director of the *Climate Alliance for the Common Good*

Small Businesses Can Make a Big Difference

"Small organizations have the power to make a huge change in achieving climate balance"

And Become More Profitable!

Studies show that the most sustainable companies are also the most profitable." *Harvard Business School*

Traditionally...

Why Change?

- Transition from fossil fuels to renewables
- New technologies=more efficient energy use
- New business opportunities
- Growing risks to businesses

Building Your Business and Helping the Environment

• Reduce energy use	Saves money Addresses warming
• Use renewable energy	Saves money Helps your business
• Support policy curbing greenhouse gases	Improves business sustainability

Customers Prefer Climate-Friendly Businesses

- The climate has already changed in La Crosse. Start with the numbers:
  - 87% of La Crosse citizens report being negatively affected by climate variability.
  - The area has experienced more extreme weather, including extreme heat, cold, and flooding.

- Many customers and employees (especially young people) prefer businesses that are climate-friendly.

- Sustainability and climate-positive acts drive profits

The Rest of the Afternoon

Reducing Energy in Buildings	David Boen, Trane Technologies (retired)
Adopting Renewable Energy/Solar	Josh Barbara, Solar Connections
Landscaping/Water	Judson Steinback, Coulee Ecoscapes
Transportation	Adam Schwartz, WI Clean Cities
Controlling Waste/Food Waste	Brandon Knudtson, Hilltoppers Refuse
Financing, Incentives & Rebates	Paul Dragseth/Focus on Energy, Adam S
Putting it All Together: Your Sustainability Plan	Tom Schlesinger Climate Alliance for the Common Good

Putting It All Together- The Template

Sustainability Plan

Reduce Energy Demand

Suggestions: HVAC tune-up; Power off computers; Replace equipment as necessary using energy smart equipment; conversion; Lighting motion sensors; Smart energy strips.

Initiative: Buildings-Reduce Energy Use

Action	Target	Manager/Team	Timeframe (such as monthly)	Notes
Example-power off computers	*70% compliance*	*Building manager*	*Check compliance monthly*	

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Buildings? Yes, Buildings

Buildings are the leading source of your energy usage and carbon emissions in La Crosse.

Your business can reduce these.

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David Boen

Education:

- **AS Sacramento City College**
- **BS Ferris State University**
- **MS Austin Peay University**

Retired

35 years in HVAC, mostly Trane

HVAC instructor, Western TC

davidlboen123@gmail.com

About buildings

How to reduce your carbon footprint while saving money

If you rent/don’t own the building:

- Reduce energy use.
- Purchase green power through Xcel Renewable Connect program.

If you do own the building:

- Invest in a building retrofit to increase energy efficiency.

Reducing energy use – easy stuff

Buy a Kill-A-Watt and use it.

Use LED bulbs

Enable sleep or hibernate mode on electronics

Heating and cooling

- Set thermostat lower in winter, higher in summer
- Use spot heating
- Clean air filter
- Make sure thermostat is properly programmed

Reducing energy use – harder stuff

Have an energy audit done

Reduce heat loss/ gain

Upgrade appliances

- Use an induction cooktop
- Replace heating with a heat pump
- Install a setback or ‘Smart” thermostat
- Buy Energy Star rated appliances
- Get a heat pump water heater

Can I turn the heat off when I don’t need it?

Not in Wisconsin! But you can turn it down…

Depends on the heating type

- Central gas heat – 55F minimum
- Floor heat or radiators – a few degrees
- Heat Pump – a few degrees or more but it depends (ask your contractor)

Thermostat types

Set-back thermostats versus “Smart” thermostats

Setback thermostat:
Set the occupied vs unoccupied schedule
Very reliable and predictable
No remote access

Smart thermostat:
The thermostat learns when occupancy occurs
Usage reports are available
Wi-Fi is required
Commercial versions are available

What is electrification?

Electrification means replacing fossil fuel powered devices like gas boilers and furnaces with electrically-powered equivalents, such as heat pumps.

Electrification is one of the most important strategies for reducing CO2 emissions by shifting energy sources from fossil fuels to renewable energy sources.

Getting away from fossil fuels

Fully electric

- Replace gas stove with induction cooktop
- Replace central gas heat with a cold climate air to air heat pump
- Replace hydronic boiler with a cold climate air to water heat pump
- Replace water heater with a heat pump water heater

What is a Heat Pump?

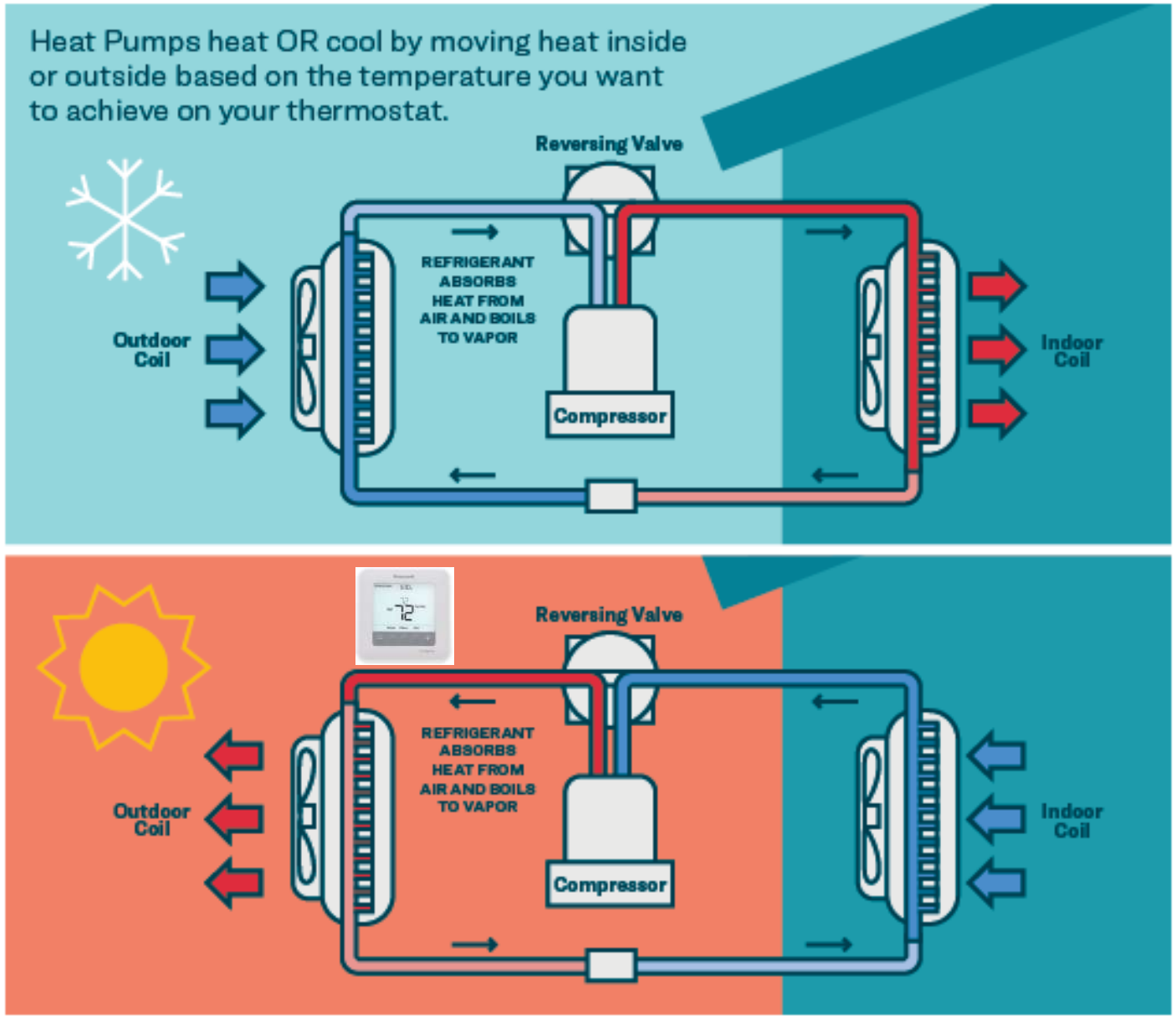
Replaces your AC unit and also provides heat in the winter

Can be used as a primary heat source even if you have gas heat

Single stage heat pumps can heat down to about 30F

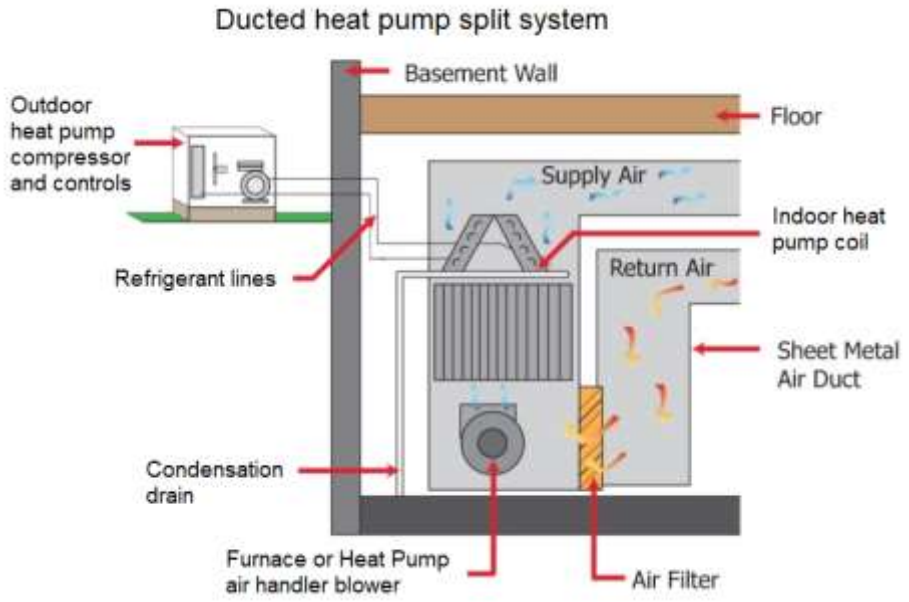
Cold Climate heat pumps can heat down to 5F (or lower) (DOE Challenge)

What is a Heat Pump?



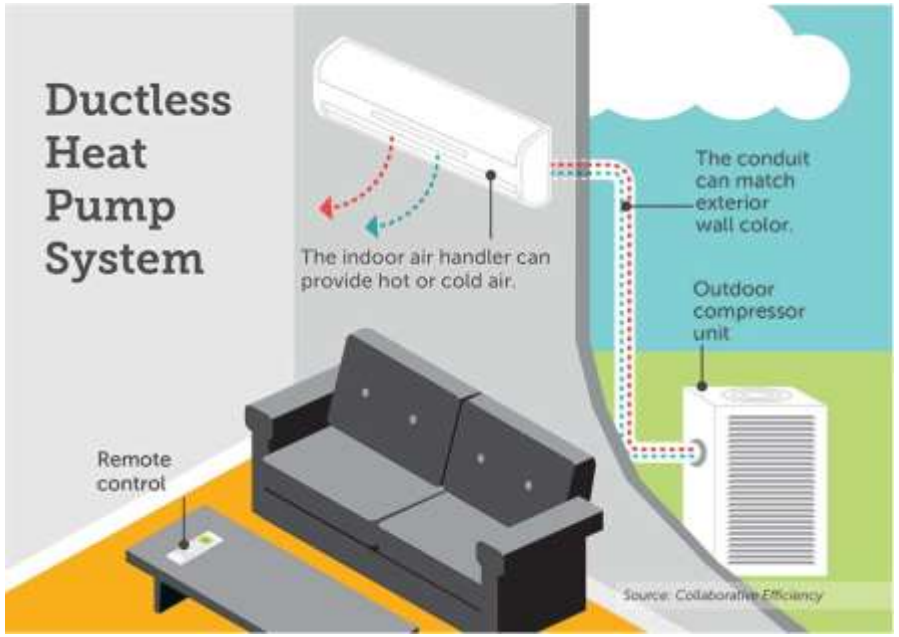
Heat pump system types

Conventional Duct System



Advantages:
Best air distribution, even heat and cool
Air filtration can be superior to ductless
Can use gas heat as backup for very cold days
Disadvantages:
More complexity
Takes up more space

Ductless System



Advantages:
Best efficiency available
No ducting
Can be supplemented with radiant heat (hot water)
Disadvantages:
Uneven heating and cooling
Requires multiple systems

Heat pump system types

Air to water heat pump

Advantages:
Can be used for heating and cooling
Can be used with radiant floor heat
Can also replace or supplement water heater
Replaces a fossil fuel boiler system
Very quiet operation

Disadvantages:
Expensive and complex installation
Air filtration must be done separately

DOE Heat Pump Challenge

The US Department of Energy sent out a challenge to HVAC manufacturers to build heat pumps for all climates

Challenge #1

Full heating capacity down to 5F at ½ the energy cost of electric heat.

Challenge #2

Optimized for heating down to -15F

Challenge accepted:

Carrier
Daiken
Johnson Controls
Lennox
LG
Midea
Mitsubishi Electric
Rheem
Trane Technologies

Heat pump water heater

Air to water heat pump

Advantages:
Save energy on heating water
Dehumidifies while heating
Keeps area cool

Disadvantages:
Basement can become cold
Quiet but not silent

More Information

Find these organizations online:

NEEP Cold Climate Air Source HP list

https://ashp.neep.org/#!/product_list/

NEEP Cold Climate Heat Pump information

https://neep.org/heating-electrification/ccashp-specification-product-list

Energy.gov Air Source Heat Pump consumer information

https://www.energy.gov/energysaver/air-source-heat-pumps

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Solar for Small Businesses

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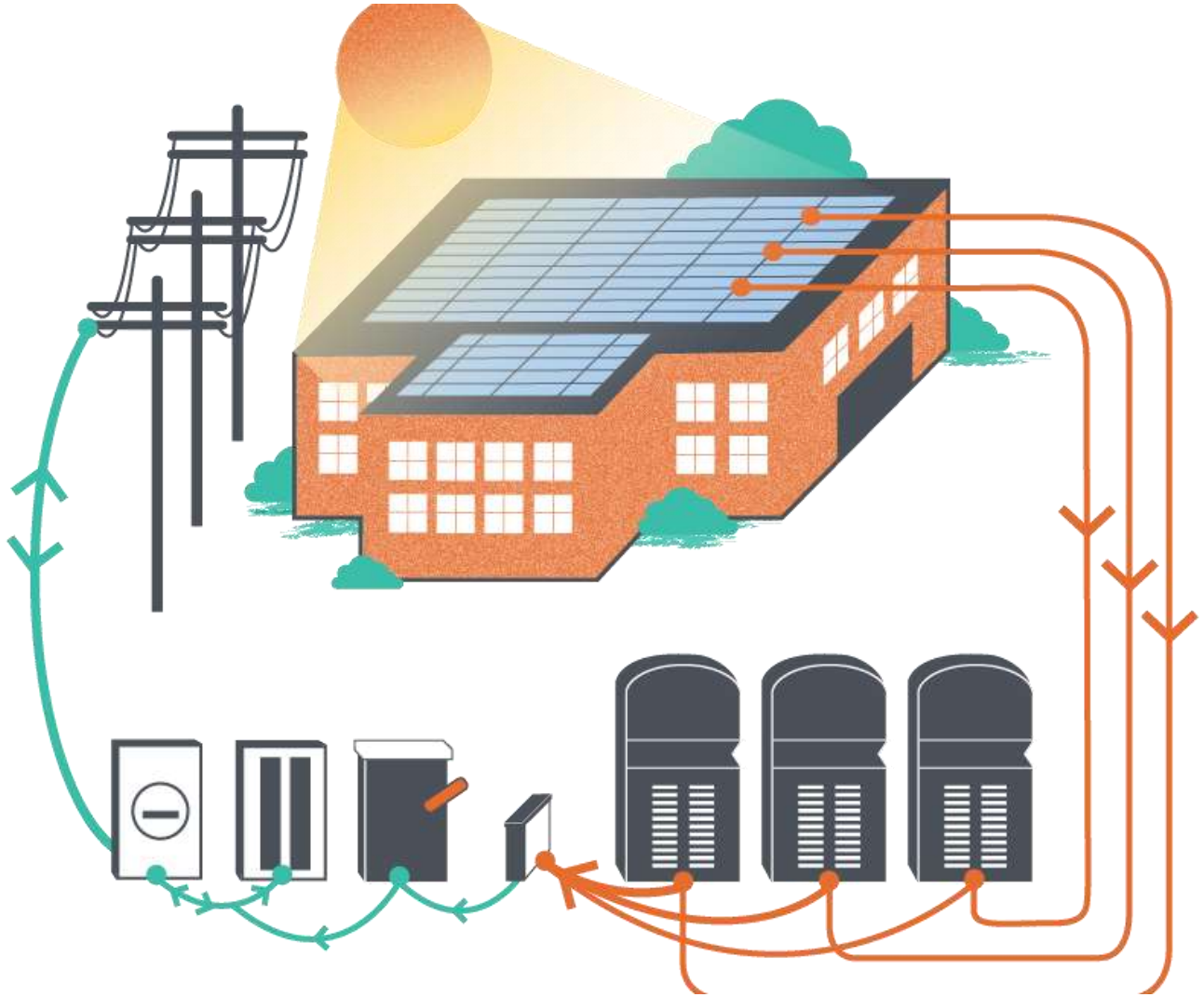
About Solar Connection

- Licensed electrical contractor in Wisconsin, Minnesota, and Iowa
- Specialize in solar and energy storage
  - Schools, Non-Profits, Commercial, Industrial, Agricultural, and Residential
- Founded in 2010
- Became part of A.L.M. (Mathy family of companies) in 2019
- In-house solar design experts, electrical engineering, electricians, solar installers, and project management.



Flow of Energy

1. Solar Modules (Panels)
2. Inverter(s)
3. Electrical
4. Grid
    1. Bidirectional
    2. Buy electricity from the grid when you need to or sell overproduction from solar
        1. Utility-dependent policies

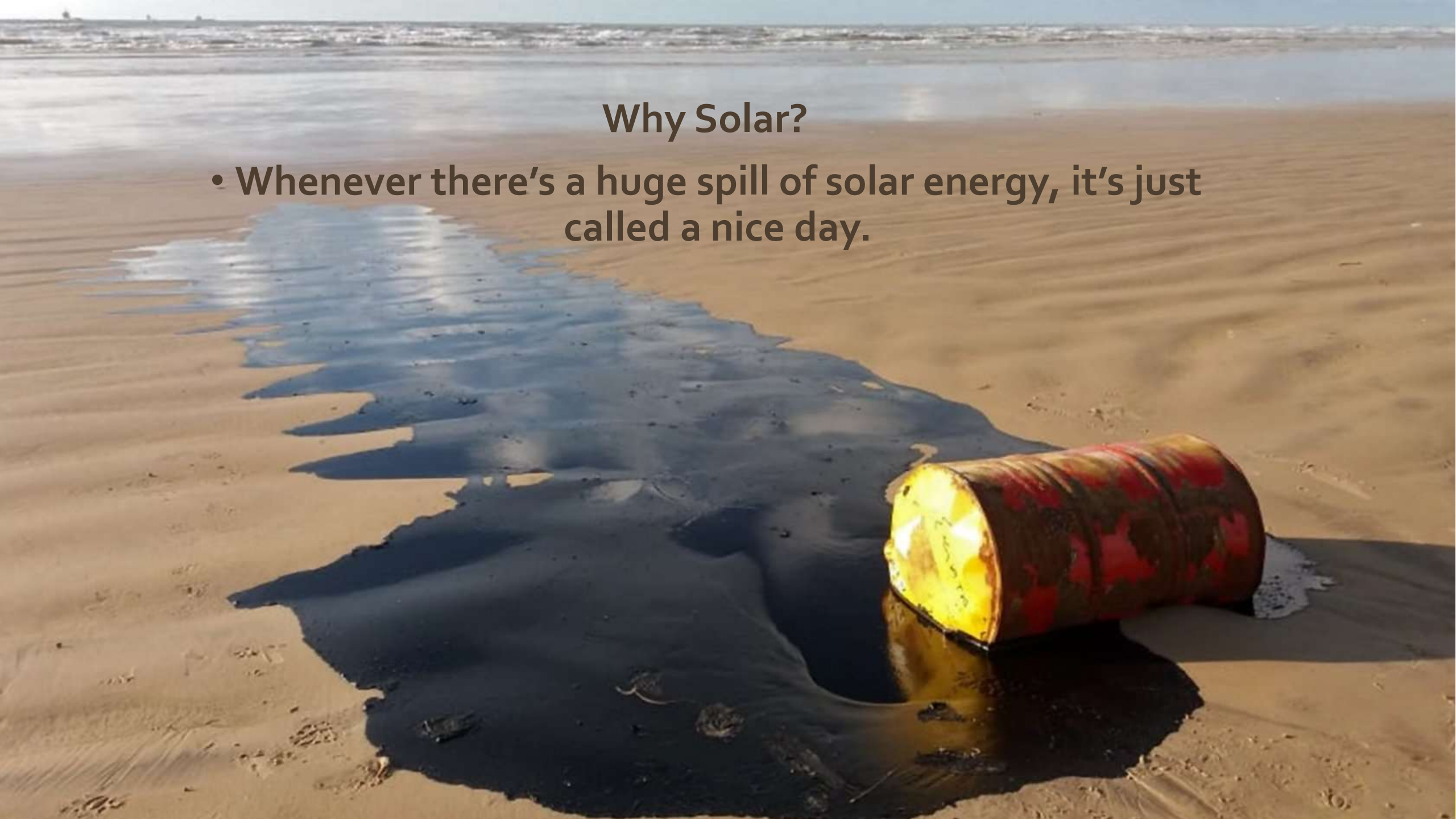
https://cdn.greenmatch.co.uk/cdn-cgi/image/format=auto/2/2022/10/how-solar-panels-work.png

Flat Roof Mount: Boys & Girls Club | La Crosse, WI

Roof Mount: Habitat ReStore | La Crosse, WI

Ground Mount: Torrance Casting | La Crosse, WI

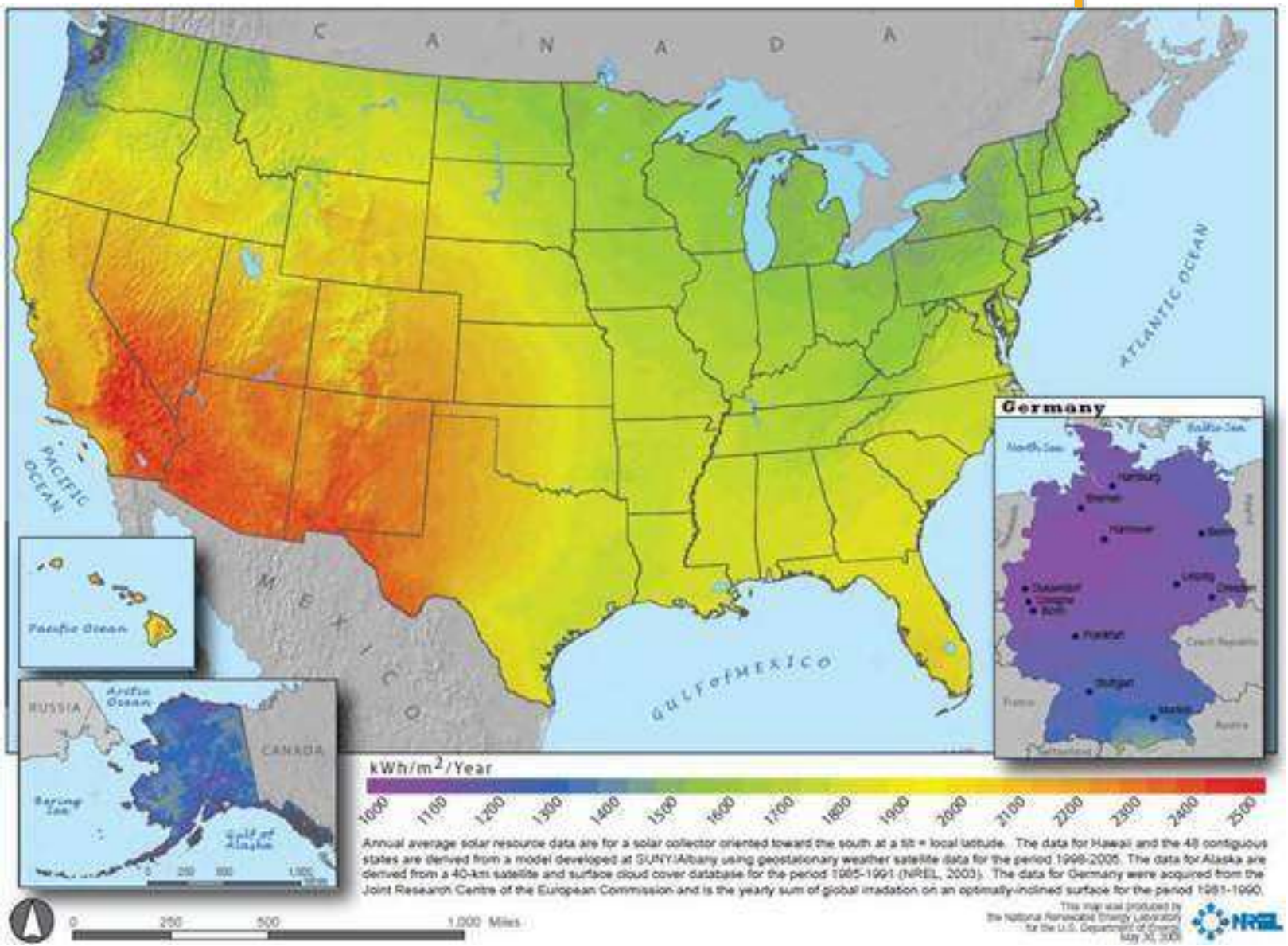
Solar Pergolas



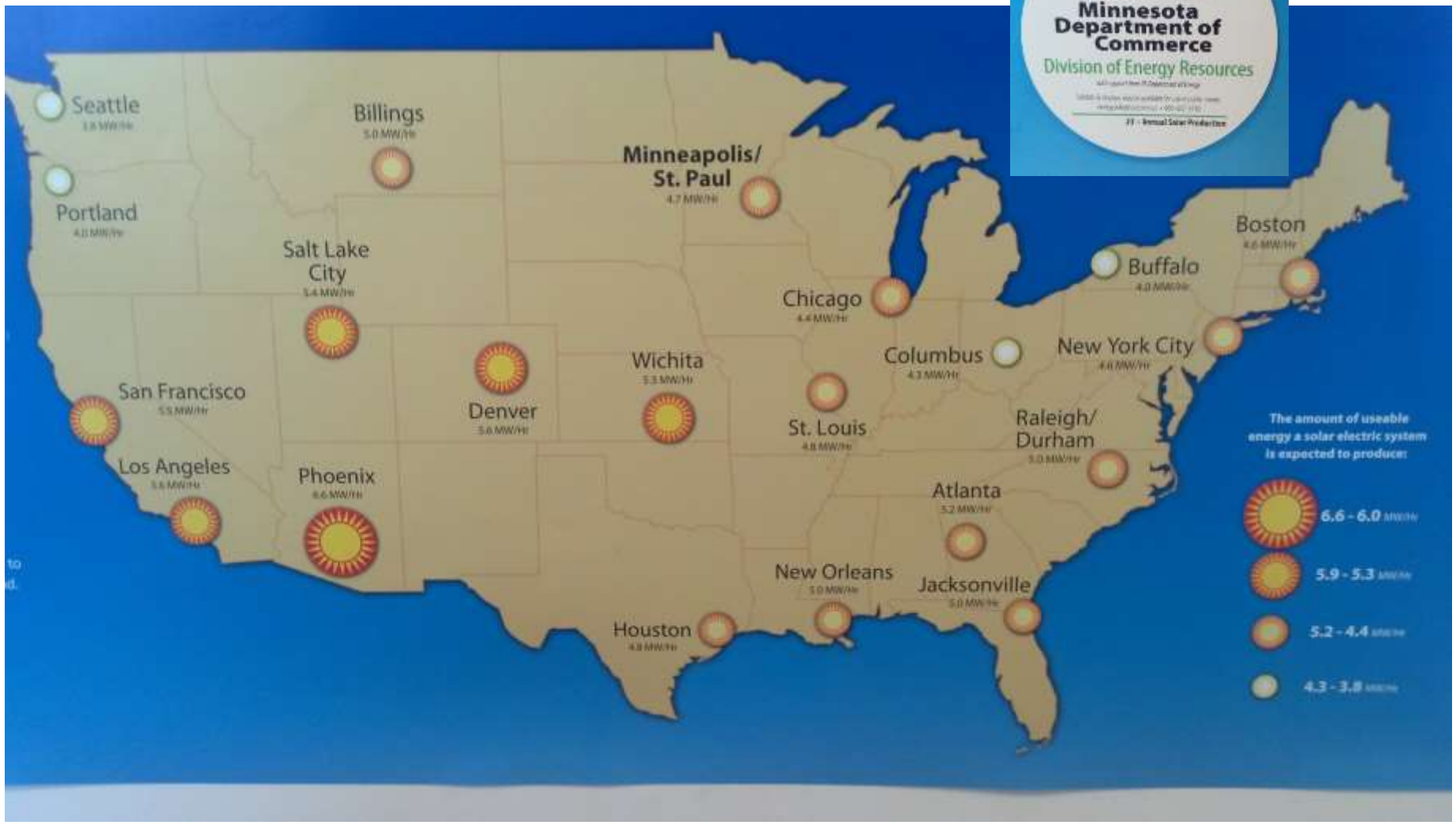
Why Solar?

- Whenever there's a huge spill of solar energy, it's just called a nice day.

US Solar Resource Map



US Solar Resource Map



- Minnesota/Wisconsin has a solar resource equivalent to Houston and Miami (multiple sources)

Does Solar WORK IN THE WINTER?

Believe it or not, solar panels don't need warm weather to thrive.

- Solar panels are designed with snow in mind.
- They're angled in such a way that most snow will simply slide right off.
- The surface is designed to heat up, so snow melts off fairly effectively.
- The panels are designed to withstand the weight and pressure of heavy snowfall.
- UV rays pass through clouds. Even on an overcast day, solar panels are still harvesting energy.

https://www.reenergizeco.com/wp-content/uploads/2019/05/how-do-solar-panels-work-in-winter.jpg

Project Funding

- Inflation Reduction Act
  - Provides 30% tax credit through 2032
- Location Dependent Grants
  - Focus On Energy
  - **R**ural **E**nergy for **A**merica **P**rogram
    - Rural Small Businesses
    - Agricultural Businesses
    - Up to 50% of the system covered

Summary – Solar Advantages

- Reduce energy bills
- Improved affordability through tax credit & grants
- Attract tenants/customers
- Reduce carbon footprint
- Supports sustainability of business

SOLAR CONNECTION

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www.solarconnectioninc.com

"Solar Connections is a company truly committed to helping their customers invest in renewable energy."

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The Paradigm for Design and Economic Incentives for Sustainable Landscapes

By Judson Steinback

Coulee Region Ecoscapes LLC

Problem-Solution Model

1. Increased severity of weather events
2. Less stable and less predictable weather events
3. Stormwater pollution and run-off
4. Rapidly decreasing native insect populations
5. Spread of invasive species
6. Habitat loss
7. Overall decrease in biodiversity
8. Loss of topsoil
9. Increased stressors (diseases, late and early frosts, etc)
10. Lack of Time Outside, Highly Processed Diets, Obesity, Stress, Anxiety, Too Much Screen Time

Shifting the Design Paradigm: Plant Communities (Guilds)

Prairie/Meadow Ecosystem

Woodland Ecosystem

Boulevard Gardens

Perrot State Park and “The Hub”

The Hub Prairie in Winter

Echinacea Flowers at MDU

Rain Gardens- Mandates and Incentives

Roush Rentals No-Mow Property

Rain Garden at MDU

Rain Garden at Habitat for Humanity ReStore

ERU’s- Equivalent Residential Units

BMP’s- Best Management Practices

https://www.cityoflacrosse.org/home/showpublisheddocument/866/637118650057300000

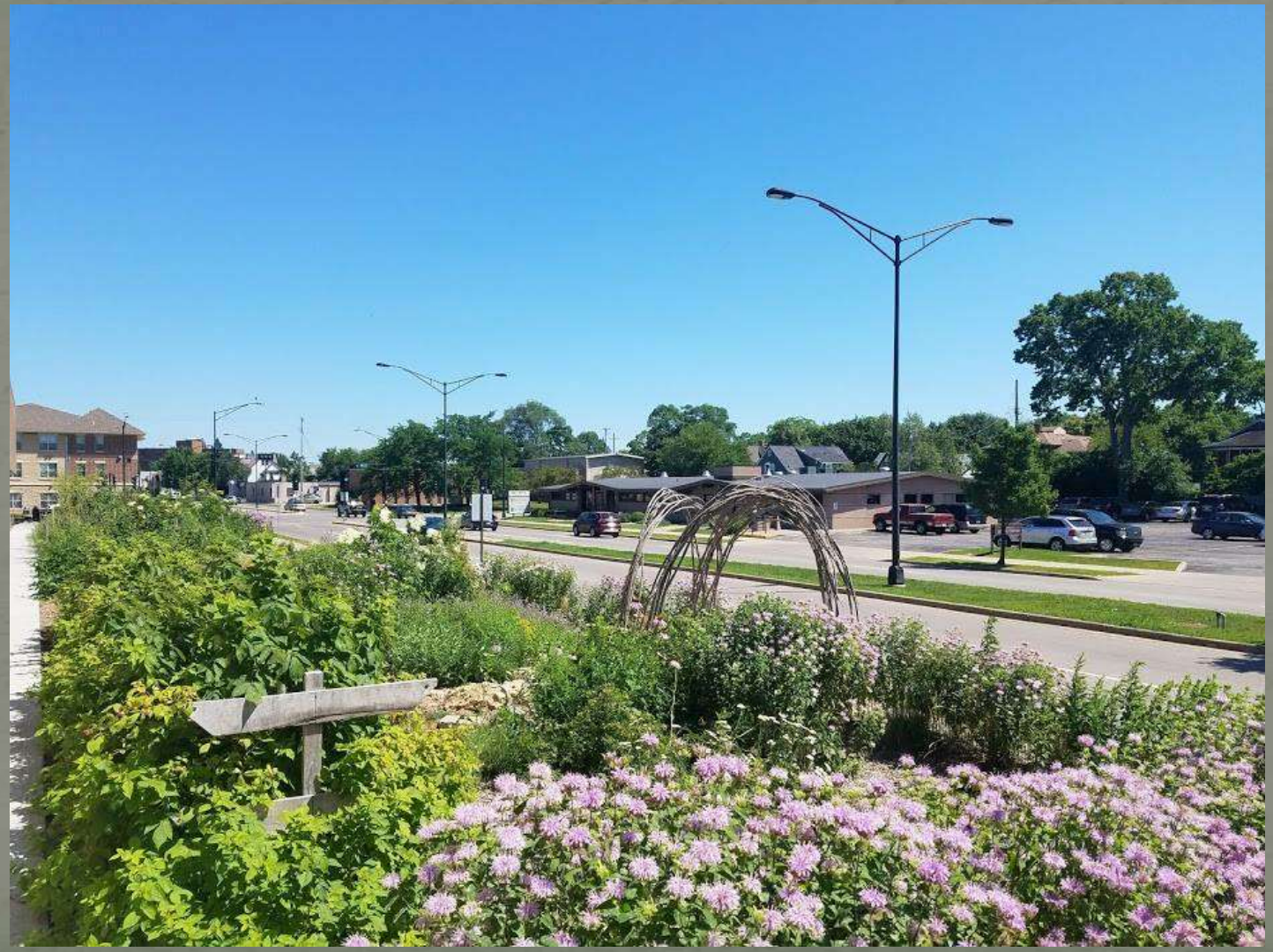
Benefits of Rain Gardens

Benefits of Rain Gardens

-Reduce Pollution
-Reduce Strain on Stormwater System
-Filter Toxins from Environment
-Owners may apply for tax credits
-Provide food and habitat for numerous species
- Snow Storage (reduce trucking)
-Beautiful

Rain Garden at Castle Realty

Community Gardens



The YMCA Community Food Forest

"We thought we were going to build a garden, and we ended up building a community"

East Ward Commerce Center Hmong Cultural Garden

Questions???


Coulee Region Ecoscapes LLC
Sustainable Landscaping and Design Dry Stone Masonry
(608) 799-2797 couleeregionecoscapes.com

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Driving Toward a Sustainable Future:
Exploring Alternative Fuels for Wisconsin

Lorrie Lisek, Executive Director

Adam Schwartz, Board Member

January 18, 2024

CLEAN CITIES COALITION NETWORK

About Wisconsin Clean Cities

- Wisconsin Clean Cities is a member-based, 501c3 statewide nonprofit organization – one of the U.S. Department of Energy's more than 75 Clean Cities Coalitions.
- Clean Cities Coalitions support the nation's energy and economic security by building partnerships to advance affordable domestic transportation fuels, energy efficient mobility systems, and other fuel saving technologies and practices.
- Designated in 1994, Wisconsin Clean Cities is supported by a diverse group of members and stakeholders.

Current WCC Grants & Projects

- DRIVE Electric Wisconsin - DRIVE Electric USA
- Drive Clean Rural USA
- EMPOWER – Workplace Charging
- WIEV – Wisconsin EV Infrastructure Program (NEVI)
- Clean Energy to Communities Program : Peer-Learning Cohorts
- NFPA – Ready for EV's Program
- WI Smart Fleet 2.0
- Zero-Emission Freight Future
- Native Sun Electrification Project

Recently Completed Projects

- M2M I-94 Clean Fuel Corridor Project
- DOE Vehicle Charging Innovations for Multi-Unit Dwellings Grant
- EPA DERA Grant
- Safer 2 Grant – WI Office of Energy Innovation
- NGV UP TIME Grant
- Heavy Duty EV Demonstrations for Freight & Mobility Solutions

Since 2011, WCC has assisted to secure over $45M in funding for the implementation of projects in the transportation sector.

WISCONSIN CLEAN CITIES

Light-, Medium-, and Heavy-Duty Vehicles

Alternative and Renewable Fuels and Infrastructure

Idle Reduction Measures and Fuel Economy Improvements

New Mobility Choices and Emerging Transportation Technologies

Wisconsin Clean Cities Portfolio

Biodiesel Vehicles

Light-Duty

- Trucks and passenger cars in private and government fleets
- Personal vehicles

Medium-Duty

- Vans and shuttles
- Airports and taxi fleets

Heavy-Duty

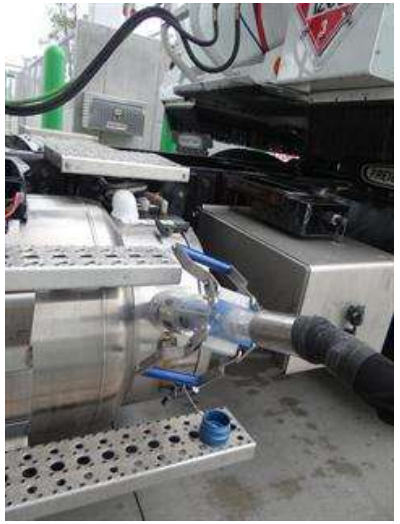
- School and transit buses
- Emergency vehicles
- Delivery and bucket trucks
- Street sweepers

Propane Vehicles

- Propane Vehicle Availability
  - Light-, medium, and heavy-duty vehicles
  - Engines and fueling systems for heavy-duty vehicles
  - Converting gasoline vehicles
  - Smaller applications, such as forklifts and commercial lawn equipment

CNG and LNG in Vehicles

Types	Storage	Applications	Energy Content
Compressed Natural Gas (CNG)	Stored as a gas in onboard tanks under high pressure	Light-, medium-, and heavy-duty vehicles	1 gasoline gallon equivalent (GGE) = 5.66 pounds (lb) or 126.67 cubic feet
Liquefied Natural Gas (LNG)	Stored as a liquid at cold temperatures (-260°F); Stored in double-wall, vacuum-insulated pressure vessels	Heavy-duty vehicles; Trucks with long ranges supporting the marine and rail sectors	1 GGE = 1.5 gal LNG



Charging EVs and PHEVs

Type of Charger	Current Type	Input Voltage (V)	Typical Charging Time	Primary Use
Level 1	Alternating Current (AC)	120 V	Approximately 5 miles of range per hour of charging	Residential
Level 2	AC	208 V or 240 V	Approximately 25 miles of range per hour of charging	Residential Commercial
DC Fast	Direct Current (DC)	208 V or 480 V	100–200+ miles of range per 30 minutes of charging	Commercial
Wireless	AC	Varies	10–20 miles of range per hour of charging	Commercial

WIEV
Wisconsin Electrification Initiative

Strategies to Conserve Fuel

- Idle Reduction
- Driving Behavior
- Parks and Equipment
- Fleet Rightsizing
- Vehicle Maintenance
- Transportation System Efficiency

Source: DOE, AFDC, Idling Reduction Technology Saves Police Department Money, Reduces Emissions (2019). https://afdc.energy.gov/case/3076

Fleet Rightsizing

- Evaluate vehicle needs and use to make smart purchases
  - Determine whether you can reassign, replace, or eliminat
  - Define evaluation criteria and rank vehicles
  - Transition to smaller, more efficient engines
  - Choose lighter vehicles
- Use alternative fuels and vehicles
  - Optimize vehicle use
  - Find creative, strategic ways to reduce vehicle use
- Miami Beach case study:
  - Removed 18 vehicles
  - Saved $1 million in avoided replacement costs and $18,000 in annual maintenance costs

Alternative Fuels and Advanced Vehicle Technologies References and Resources

- AFDC
  - Station Locator
  - Laws and Incentives
  - Maps and Data
  - Case Studies
  - Publications
  - Tools

TECHNICAL RESPONSE SERVICE

www.afdc.energy.gov

EMPOWER

Equitable, Mobility, Powering Opportunities for Workplace Electrification Readiness

- **Why**
  - Provide reliable access where home charging is not possible
  - Providing a pathway for EV ownership for those who would otherwise not have charging access
  - Help to flatten the power demand curve by charging mid-day
- **What**
  - Educational outreach
  - Support infrastructure deployment in disadvantaged communities / businesses
  - Charging infrastructure planning and installation
- **Who**
  - Businesses across Wisconsin
  - 40% minimum goal for impacted communities and businesses

WISCONSIN CLEAN CITIES

Fleet Electrification Advisory Program

No Cost Analytics and Advisory Services for Vehicles and Infrastructure

We help customers:

- Free advisory services and data-driven assessments of EV fleet opportunities
- Assessment of EV opportunities and charging infrastructure needs.
- Access to actual vehicle and real-time fleet data.
- Online planning tool that includes latest EV models, customizable financial analytics and GPS data for infrastructures needs.
- Develop infrastructure options and make recommendations on charging locations
- Infrastructure advisory and cost estimates based on site needs
- Analyze economics and make recommendations based on fleet needs (including rate options)
- Data-driven analysis of charging and EV usage. Development of strategies to keep costs low and drive the best return on investment

Fleet | EV Solutions | Business Services | Xcel Energy

Questions or "Crickets"??

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CLIMATE ALLIANCE
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WASTE & RECYCLING MANAGEMENT

EDUCATION & KNOWLEDGE FOR AREA SMALL BUSINESSES

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HILLTOPPER
REFUSE & RECYCLING
SERVICE INC.

BRANDON KNUDTSON – GENERAL MANAGER

18 JANUARY 2024

DISPOSE YOUR GARBAGE IN ITS PLACE

SAVE THE PLANET AND YOURSELF

Proper waste management is important for the sustainability of our planet. By disposing of garbage in its designated place, we can prevent environmental degradation, reduce pollution, and ensure the health and safety of ourselves and future generations

Clean and Healthy Environment

Proper disposal of garbage prevents the spread of diseases and harmful toxins.

Aesthetic Appeal

A clean and well-maintained environment is more appealing to the eye.

Reduced Pollution

By disposing of garbage in the right way, we reduce the amount of waste that ends up in our waterways and air.

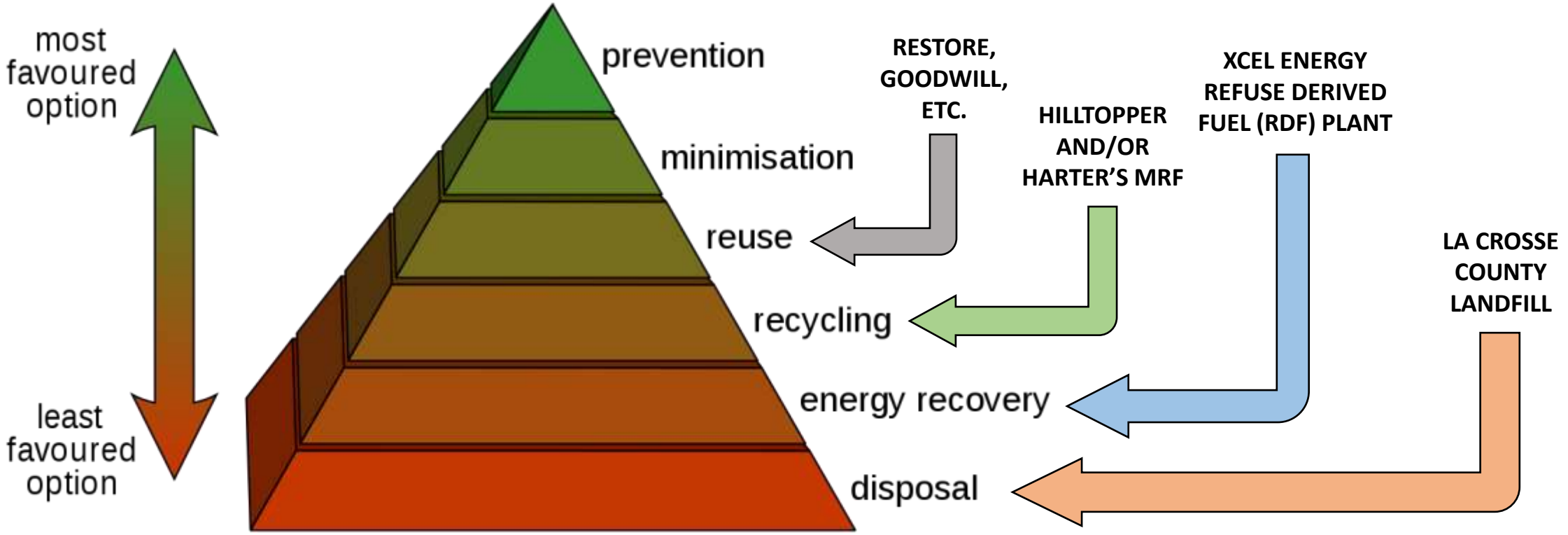
Saves Money

Proper waste management saves money spent on cleaning and repairing damage caused by improper disposal.

Learn more at www.companyname.com

UNDERSTANDING THE BASICS

- **Where Does Our Trash Go?**
- **Where Does Our Recycling Go?**



Waste Hierarchy

UNDERSTANDING THE BASICS

- **What Can & Cannot Be Recycled?**
  - **Know Who Your Hauler is!**
- **What is the Data Behind Collection?**

FIBER
OFFICE PAPER, NEWSPAPER, MAGAZINES, CARDBOARD, ETC.

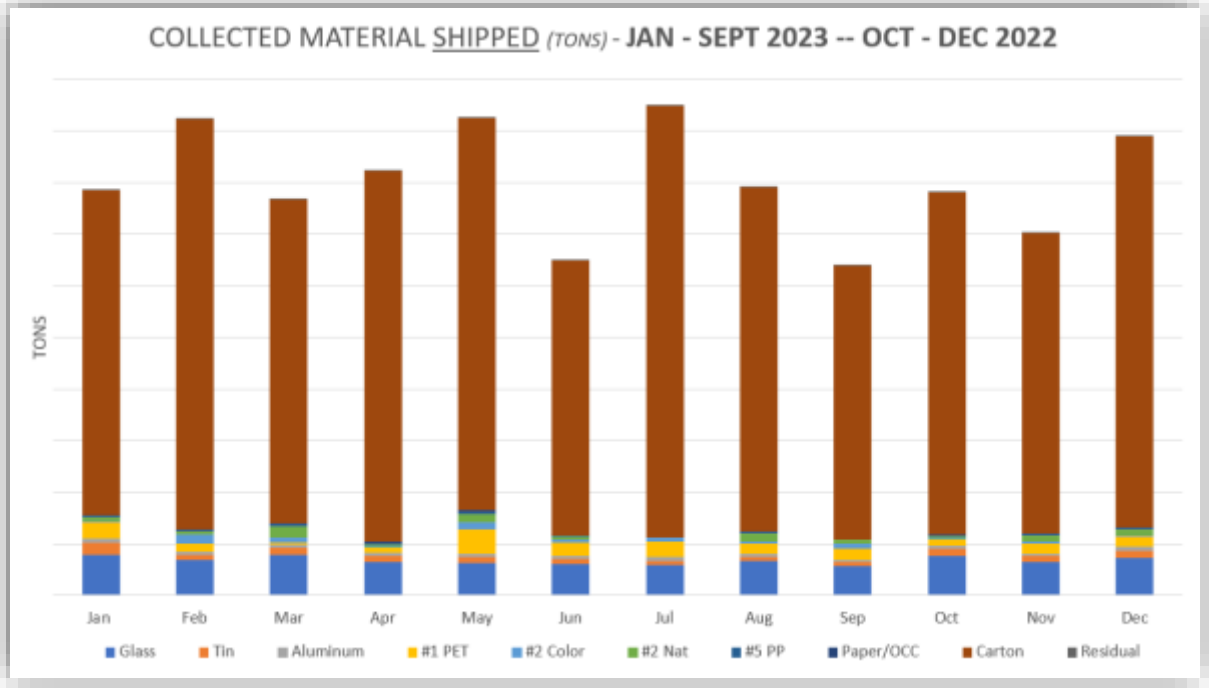
METALS
ALUMINUM: SODA/BEER CANS & FOILS
TIN & STEEL: FOOD CANS, POTS/PANS, PAINT & **AEROSOL CANS** - **MUST BE EMPTY**

CARTONS & PAPER CUPS
CARTONS: JUICE, WINE, BROTH, MILK, ICE CREAM
PAPER CUPS: COFFEE, SOFT DRINKS —
RINSED & WITHOUT LID/STRAW

PLASTICS (#1, #2, #5 ONLY)
#1 PET - **BOTTLE FORM ONLY**
#2 HDPE - MILK JUGS, DETERGENT JUGS, ETC.
#5 PP - COTTAGE CHEESE, YOGURT

GLASS BOTTLES & JARS
CLEAR & COLORED - CLEAN, LABELS CAN STAY ON

2023 Collected Refuse *(Residential)*	2023 Collected Recycling *(Residential)*
10,541 tons	3,316 tons



BUSINESS WASTE / RECYCLING OPPORTUNITIES

- **Increase / Improve Recycling Collection**
  - **DO NOT "Wish-Cycle" – Reduce Stream Contamination**
    - ✓ *Just Because the Seeing a "Recycling Logo" on a Product Does Not Mean it Will Get Recycled*
  - **Beware of Phony "Sustainability Marketing"**
  - **Understand & Preach a "Circular Economy" – *Plastics Perspective***
    - ✓ *Recycling (1) Ton of Plastic Saves ~3.8 Barrels of Crude Oil*
  - **Glass Segregation**
    - ✓ *Recycling (1) Glass Bottle Saves Enough Electricity to Light a 100W Bulb for 4 Hours*'
    - ✓ **Glass Only Route – 80% of Material Never Touched After Collection**
- **Organics Diversion / Composting**
  - *Methane Gas is ~25% More Harmful to the Environment than Carbon Based Gases*
  - **269 Tons of Organics Diverted in 2023**
    - ✓ **Reduction of 237 metric tons of CO2E**
    - ✓ **1,614 Cubic Yards of Landfill Space Saved**
  - **Direct Impact to Local Businesses**

BUSINESS WASTE / RECYCLING OPPORTUNITIES

- **Styrofoam Recycling**
  - *2.5 lbs of Unprocessed Block Foam Takes Up ~1 Cubic Foot of Space*
  - **~3,400 lbs of Processed Foam in 3-Months**
    - ✓ **Food Packaging is Strongly Encouraged & Accepted**
  - **Diversify the Local Recycling Stream**

- **Waste Audits**
  - **Benefits of Such Service…**
    - ✓ **Review of Service/Hauling Contract(s)**
    - ✓ **Compliant with Local, State & Federal Regulations**
      - **Hazardous Waste & Universal Waste**
        - **Managing of Spent Bulbs, Batteries, etc.**
    - ✓ **Opinions & Different Perspectives are Good** 🙂

THANK YOU!


HILLTOPPER
REFUSE & RECYCLING
SERVICE INC.
"AT YOUR DISPOSAL"
SINCE 1984 SERVING
THE TRI-STATE AREA
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P: 608.783.6727 x111
W6833 Industrial Blvd. Onalaska, WI 54650
www.HilltopperRefuse.com

CLIMATE ALLIANCE
for the Common Good

focus on energy®
Partnering with Wisconsin utilities

CLIMATE ALLIANCE
for the Common Good

- Focus on Energy partners with Wisconsin's electric and natural gas utilities to provide resources, incentives, and rebates to benefit all Wisconsinites.
  - Installing cost-effective energy efficiency and renewable energy projects:
    - Creates jobs.
    - Upgrades local infrastructure.
    - Improves the environment.
  - By eliminating energy waste, we reduce the need to purchase coal and natural gas from other states.
    - Keeps dollars in Wisconsin.
    - Lessens the need to build additional power plants.

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for the Common Good

Prescriptive Incentives

- Specific dollar amounts for installing qualifying energy-efficiency equipment.
- One-for-one replacement for commonly installed equipment.
- Visit focusonenergy.com/catalogs to view current Incentive Catalogs.
- Customer has 60 days after project installation to submit application and invoice(s).

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Custom Incentives

- Offered when a prescriptive incentive is not available.
- Requires pre-approval.
- Consult Energy Advisor to qualify for incentives:
  - $0.05/ kWh saved.
  - $100/Peak kWh reduced.
  - $0.95/Therm saved.

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for the Common Good

Renewable Energy Incentives

- Custom Incentives Available for:
  - Solar Thermal.
  - Wind.
  - Biogas.
  - Biomass.

Renewable Energy
$0.10 per kWh saved or generated
$100 per peak kW reduced or generated*
$1.25 per Therm saved or generated

- Solar PV incentives available through the Renewable Rewards program.
  - Customer incentive is based on system kW (DC) and limited to $50,000 for businesses.

Project Support

1-2-3 Energy Audit

Walkthrough audit identifying potential projects in rural zip codes.

Project Assessment Incentive

50% of the assessment to evaluate a complex energy efficiency solution (up to $15,000).

Project Planning Bonus

10% bonus on projects to pre-plan energy-efficient equipment with Focus on Energy.

Rural Electric Reduction Accelerator

Request incentives on electric savings projects in rural zip codes.

Building Optimization

Ensure equipment is operating efficiently by utilizing tune-ups and retrocommissioning.

Trade Ally Bonus

The Trade Ally Bonus is available to reward Trade Allies serving businesses for utilizing Focus on Energy. Registered Trade Allies promoting financial incentives can receive payments directly from Focus on Energy.

Trade Ally Payment: 15% of the customer incentive or $25 minimum Trade Ally Payment.

- Must be a registered Trade Ally
- Register at focusonenergy.com/forms/TAbonus

LED Lighting Options

- Lighting upgrades provide one of the quickest and most cost-effective energy improvements.
- Rapid changes in lighting technology mean new products that are becoming more affordable and available for various applications.
- Upgrading to a well-designed lighting system can provide sufficient light levels while lowering energy costs.

ROOM TYPE	RECOMMENDED FOOT-CANDLES*
Cafeteria	30-50
Classroom	30-50
Hallways	5-10
Gymnasium	30-50
Kitchen	30-75
Library	30-50
Lounge/Break Room	10-30
Office	30-50
Restroom	10-30
Storage Area	30-50

IESNA and IECC (2015), Midwest Plan Service (2006, 2009)

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LED Lighting Best Practices

- Upgrade your fixtures to light-emitting diodes (LEDs).
- Scale back overlit areas.
- Utilize control strategies.
- Perform preventative maintenance.

LED Lighting Best Practices

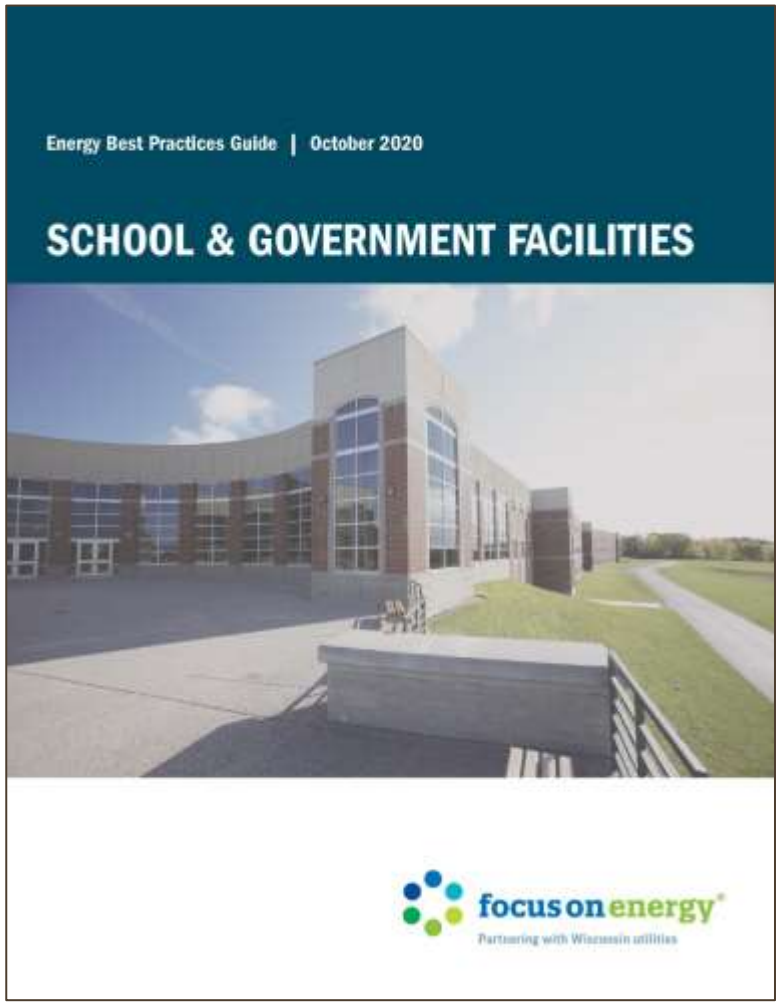
- Comprehensive Lighting Solutions:
  - Transform your facility by optimizing your interior lighting system.
    1. Fixture or retrofit kit upgrade - $0.25/Watt Reduced.
    2. Fixture or retrofit kit/lamp upgrades with connected controls - $0.45/Watt Reduced.
- Fixture incentives - $4-15 per fixture replaced.
- Lighting Controls incentives:
  - Daylighting controls.
  - Occupancy/Vacancy controls - $0.05/Watt controlled.
  - Networked Lighting Controls.

HVAC Upgrades

- Heating and Cooling Systems:
  - Install high-efficiency equipment to optimize energy savings and increase incentives.
  - Verify equipment qualifies – write qualifications into specifications!
  - Explore geothermal systems or heat pump systems.
- Ventilation Systems:
  - Add variable speed drives or electronically commutated motors to match system load.
  - Match ventilation to the needs of the building.
- Controls:
  - Upgrade to digital controls to add control flexibility and accuracy above pneumatic control systems.

Energy Best Practices Guide

- Outlines the basic steps in building an energy management program for school and government facilities.
- Provides general best practices and recommendations.
- Download a free copy at focusonenergy.com/guidebooks



New Construction

Energy Design Assistance

- Free, customized whole-building analysis.
- Available for buildings >5,000 ft.^{2}.
- Must be in the planning phase.
- Incentives provided to both design team and customer.

Energy Design Review

- Simplified whole-building energy analysis.
- For projects beyond planning and design phase.
- Incentives available to customer for implementing energy-efficient options.

Product & Equipment Incentives

- Projects already completely designed or completed.
- Available incentives are indicated in the prescriptive catalogs.
- Available up to 60 days after occupancy.

Energy Advisor Map

SERVING SCHOOL AND GOVERNMENT CUSTOMERS

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Tom Dragotta - 8
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Training and Education

- Save money and energy by training your team!
- Focus on Energy has been a go-to for Wisconsinites for training and information to help make smart energy decisions.
- Check out a full list of sessions at focusonenergy.com/training

CLIMATE ALLIANCE
for the Common Good

Putting It All Together- Tom Schlesinger

Sustainability Plan

Reduce Energy Demand

Suggestions: HVAC tune-up; Power off computers; Replace equipment as necessary using energy smart equipment; conversion; Lighting motion sensors; Smart energy strips.

Initiative: Buildings-Reduce Energy Use

Action	Target	Manager/Team	Timeframe (such as monthly)	Notes
Example-power off computers	*70% compliance*	*Building manager*	*Check compliance monthly*	

Putting It All Together

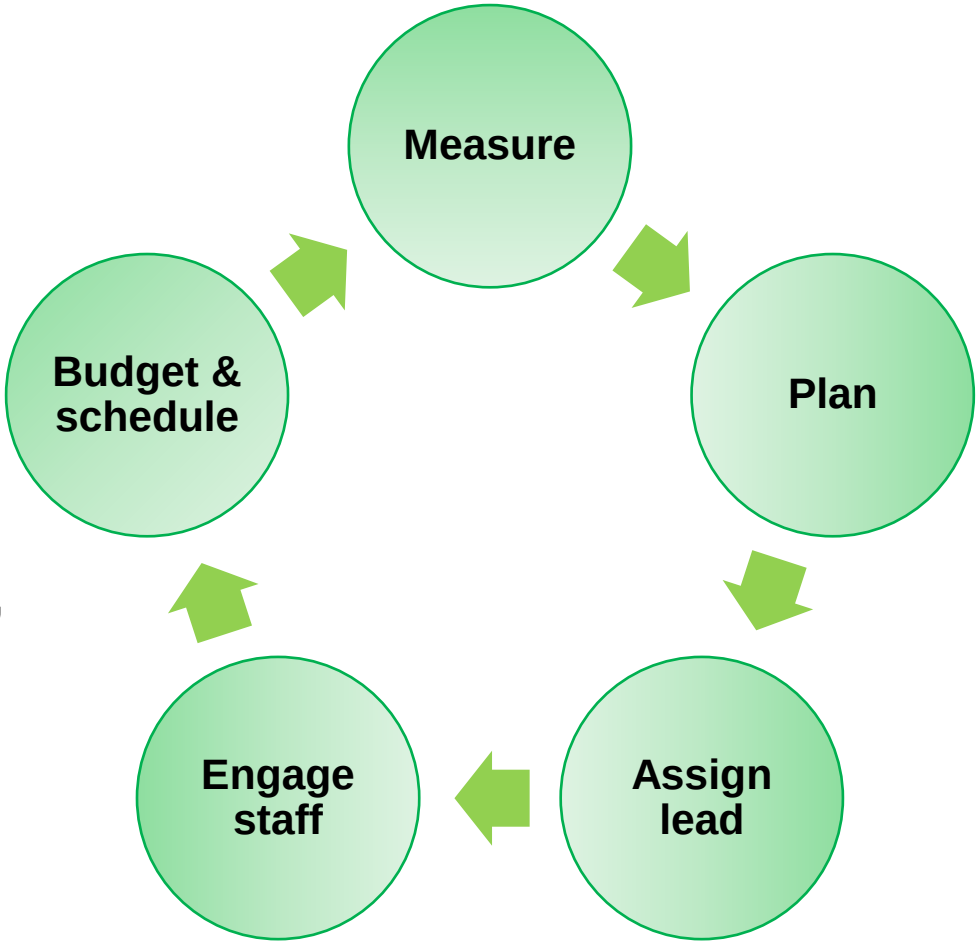
Energy and waste audits

Easiest tasks: checklist

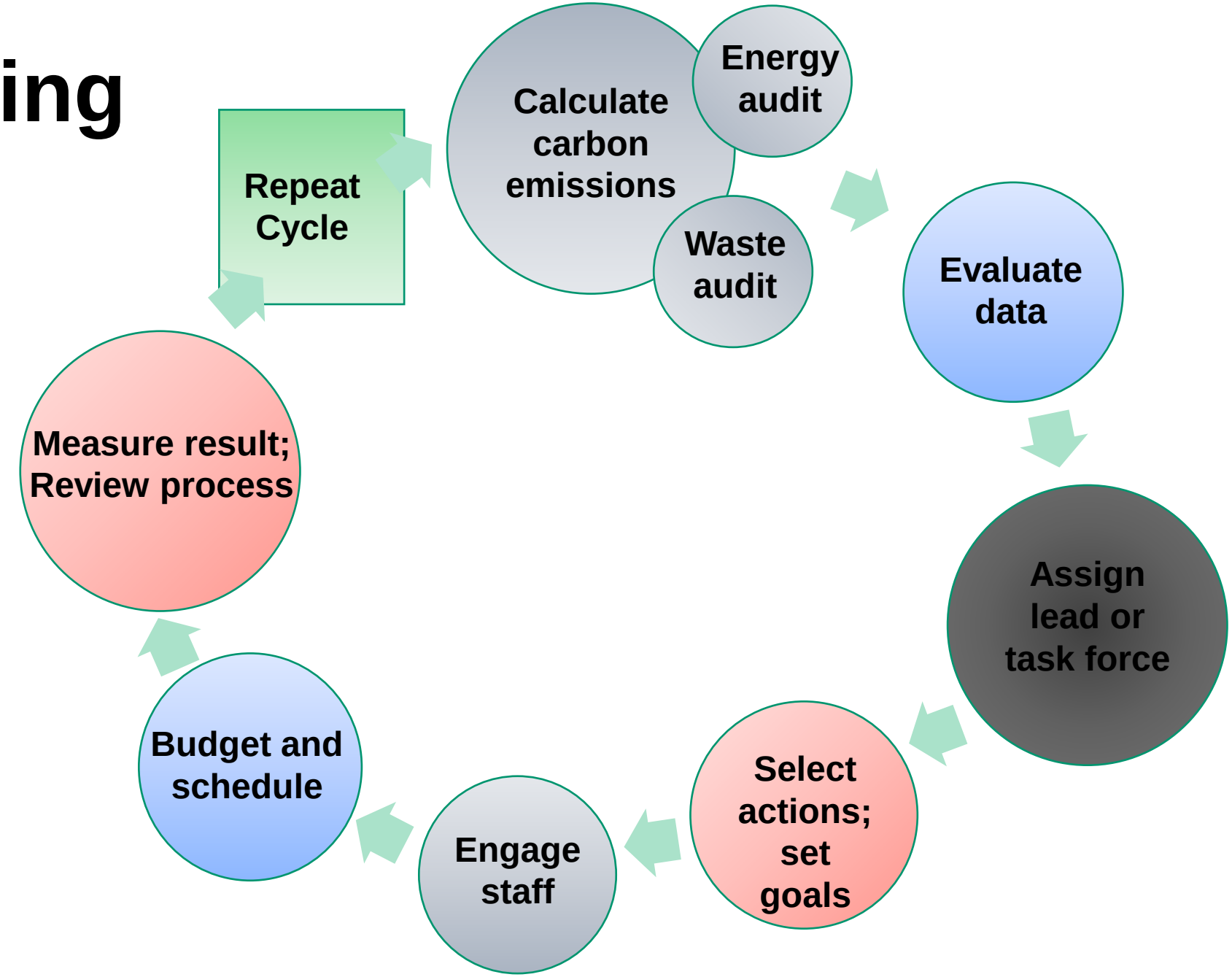
Best energy investment: Reducing energy use is the fastest way to lower bills and emissions.

Select a limited number of strategies, including low hanging fruit and…

Create a marketing strategy capitalizing on your efforts



Planning


Calculate carbon emissions
Energy audit
Waste audit
Evaluate data
Assign lead or task force
Select actions; set goals
Engage staff
Budget and schedule
Measure result; Review process
Repeat Cycle

Evaluating Climate Impact

Carbon Emissions

- Categories to measure:
  - **Fuels** on-site; steam
  - **Vehicles**; power equipment
  - **Cooling;** refrigeration
  - **Electrical** consumption in total
- Collect data/year
- Calculate

Easiest to compare year to year.

Energy Audit

Check for air leaks

Evaluate insulation

Maintain HVAC; check age of HVAC

List electronics

Analyze lighting type

Shows reduction in energy use; calculate savings.

Waste Audit

Contact La Crosse County for a free waste audit

Optionally, complete a DIY waste audit

Reduces trash removal costs

Shows reduction in hauling, increase in recycling; calculate savings.

Checklist

Buildings

- ☐ Pursue an energy audit: request an audit or perform an audit using online tools.
- ☐ Start small: turns off lights and equipment when not in use.
- ☐ Use renewables: opt for renewable energy through Xcel Renewable Connect.

Water

- ☐ Use non-toxic deicers and salt.
- ☐ Install water-efficient fixtures for up to 20% savings.
- ☐ Check for plumbing leaks in the building.
- ☐ Use native landscaping.

Transportation

- ☐ Encourage employees to bike to work by adding a bike rack.
- ☐ Consider offering employees bus passes.
- ☐ Allow telecommuting to save money, energy, and time.
- ☐ Consider offering EV charging for employees.

Waste Reduction

- ☐ Plan ahead to reduce waste when serving food: get a headcount and request recyclable containers.
- ☐ Request a free waste audit from La Crosse county.
- ☐ Ask your employees for suggestions on how to reduce waste.

Track Accomplishments

Celebrate success by tracking milestones

Achievements to Announce

- Tons of carbon NOT sent into atmosphere
- Energy saved
- Transportation mileage/gallons saved
- Water saved
- Charging station

Actions to Advertise

- Trees or native plants
- Bike racks
- Solar or other renewable energy

Tactics—Some examples

- Reduce single-use plastics
- Change to recyclable packaging
- Switch to use local components/companies/food sources
- Get rid of paper towels; replace with blowers
- Use real (aka, non-disposable) utensils, plates, cloth napkins
- Reduce thermostat a degree or two in winter, reverse in summer
- Invest in window coverings to let staff manually optimize building temperature
- Switch to video business meetings to reduce travel

In-depth Information

Tools

Why go Sustainable

Building a Sustainability Minded Culture

Understanding Emission Sources

Creating a Sustainability Plan

Example Plan

Overcoming Obstacles to Sustainability

Deep Dive

Environmental Footprint

Heat Pumps

Lower Emissions through Product Design

Green Marketing

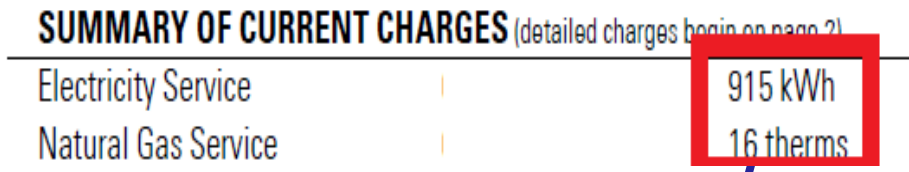
Travel Policy

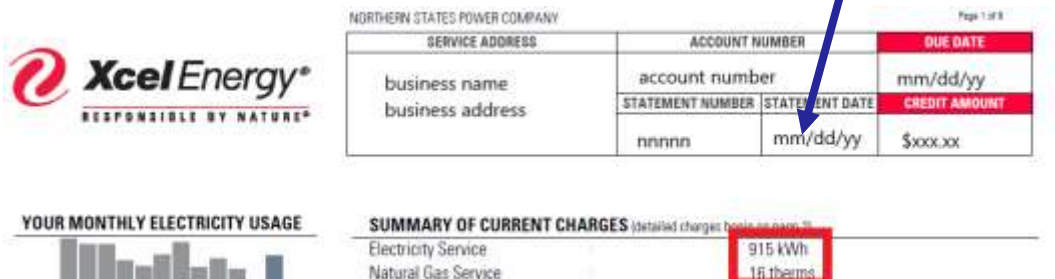
If you want an overall measure of progress toward renewables.

Gather Some Data

With just a little bit of information about your business, you can devise an efficient, sustainable, and cost-effective plan to help the environment AND help your business.

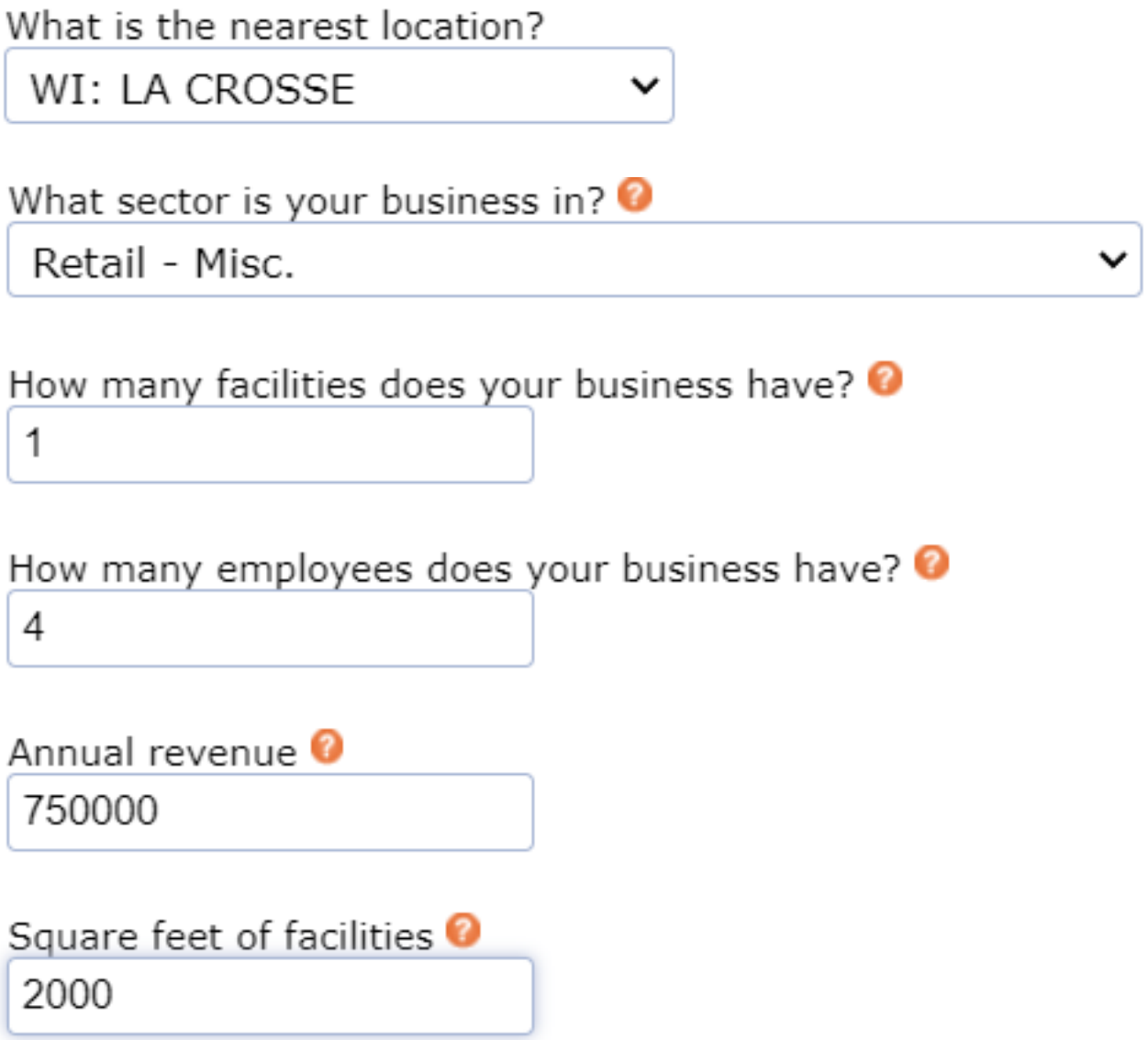
- Data for a year's worth of energy consumption – use your Xcel bills
- Estimate business sq. ft.
- # staff; vehicles and miles traveled
- Amount/types of waste



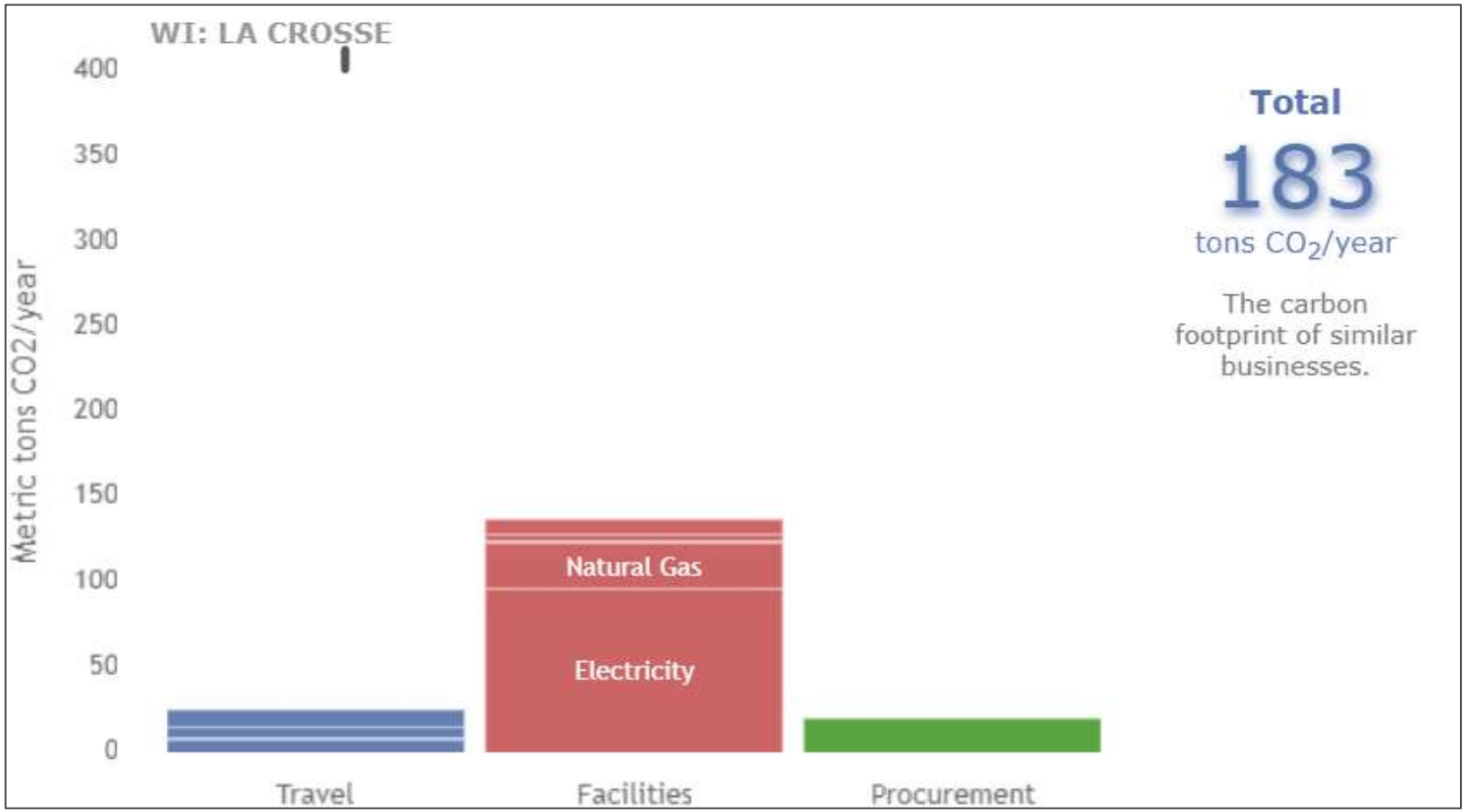


Example: Bicycle Shop Footprint

Calculators that determine a business carbon footprint range in accuracy and complexity. This example uses an easy-to-use calculator, estimating values for a **retail bicycle shop in La Crosse, WI.**



An Estimate Using Basic Data



This calculator requires very little information to estimate a starting point. Most calculators require additional data—but this lets you **get started quickly.**

Finetuning

This calculator lets you finetune your estimate by providing more data in any or all of these categories:

For this example, a bicycle shop may want to add information about travel/commute, given the shop's business model.

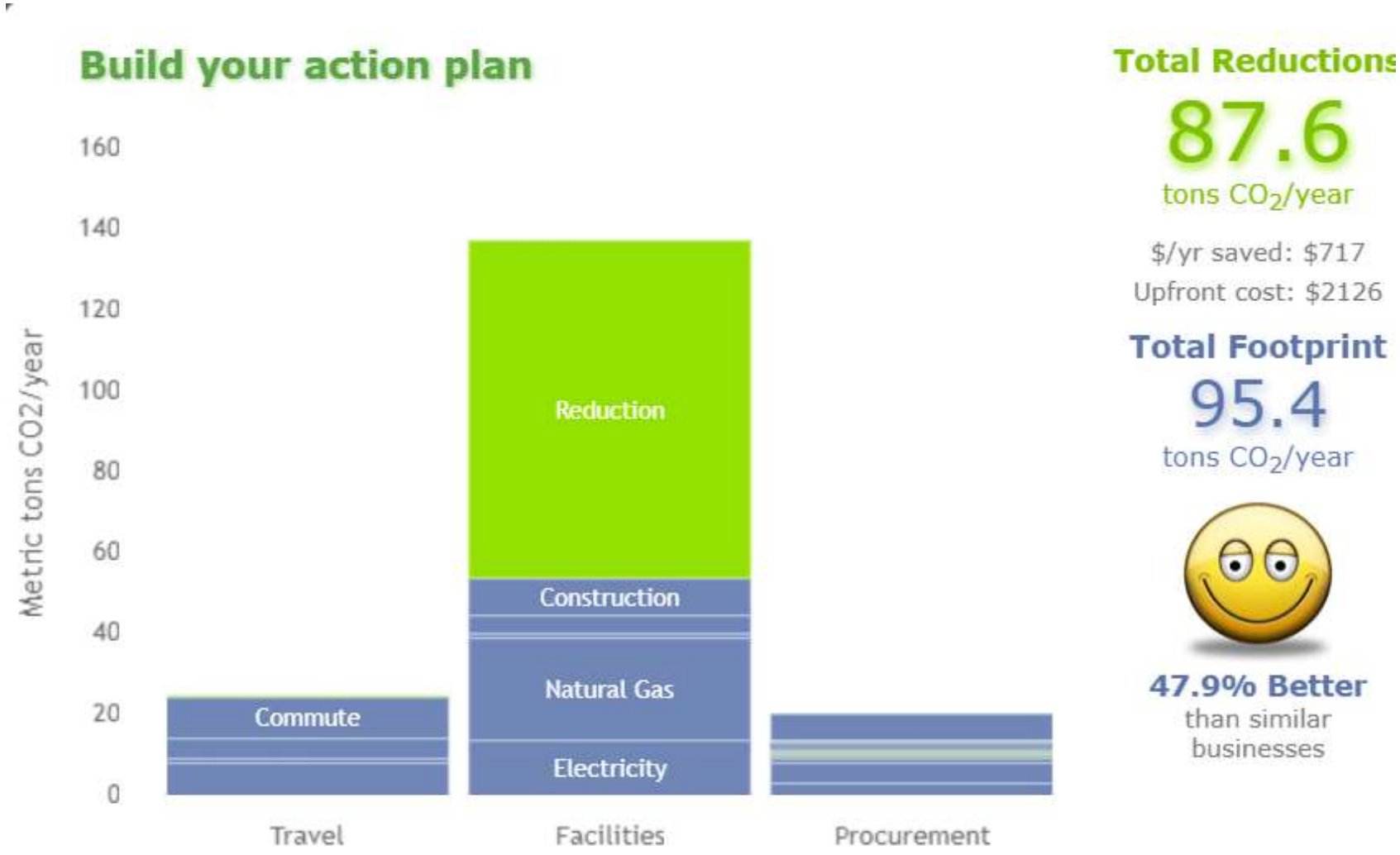
Planned Actions

Selecting just a few of the proposed actions shows costs and savings, netting a reduction in overall emissions

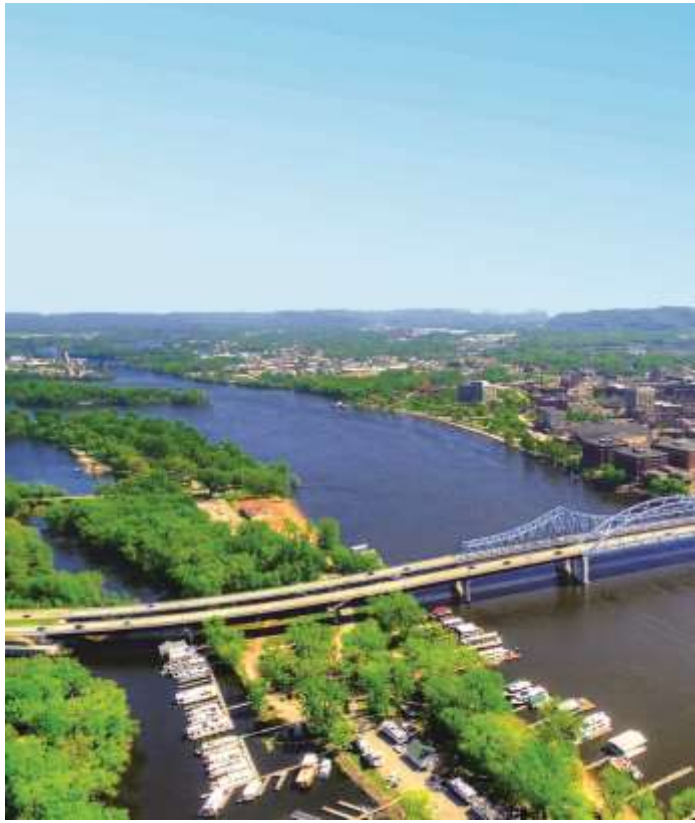
		Tons Saved $mtCO_2e/yr$ ↑	Dollars Saved $/yr	Upfront Cost $/yr
Pledge	Purchase Green Electricity	81.38	$0	$1626
Pledge	Reduce Your Waste	3.39	$138	$0
Pledge	Turn Down Thermostat in Winter	1.21	$279	$0
Pledge	Turn Up Thermostat in Summer	1.03	$166	$0
Pledge	Reduce Air Travel	0.58	$129	$0
Pledge	Replace Desktop Computers With Energy Star Models	0.04	$6	$500

This shows an option for a business that rents space, so cannot install solar.

Reduction on Footprint



What else do you need to move forward?



Questions and Discussion