

Energy Efficiency & Conservation Strategy



1. Who is responsible?
2. When should we take action?
3. Why should we care?
4. Where do we start?
5. What do we do?



Sustainability

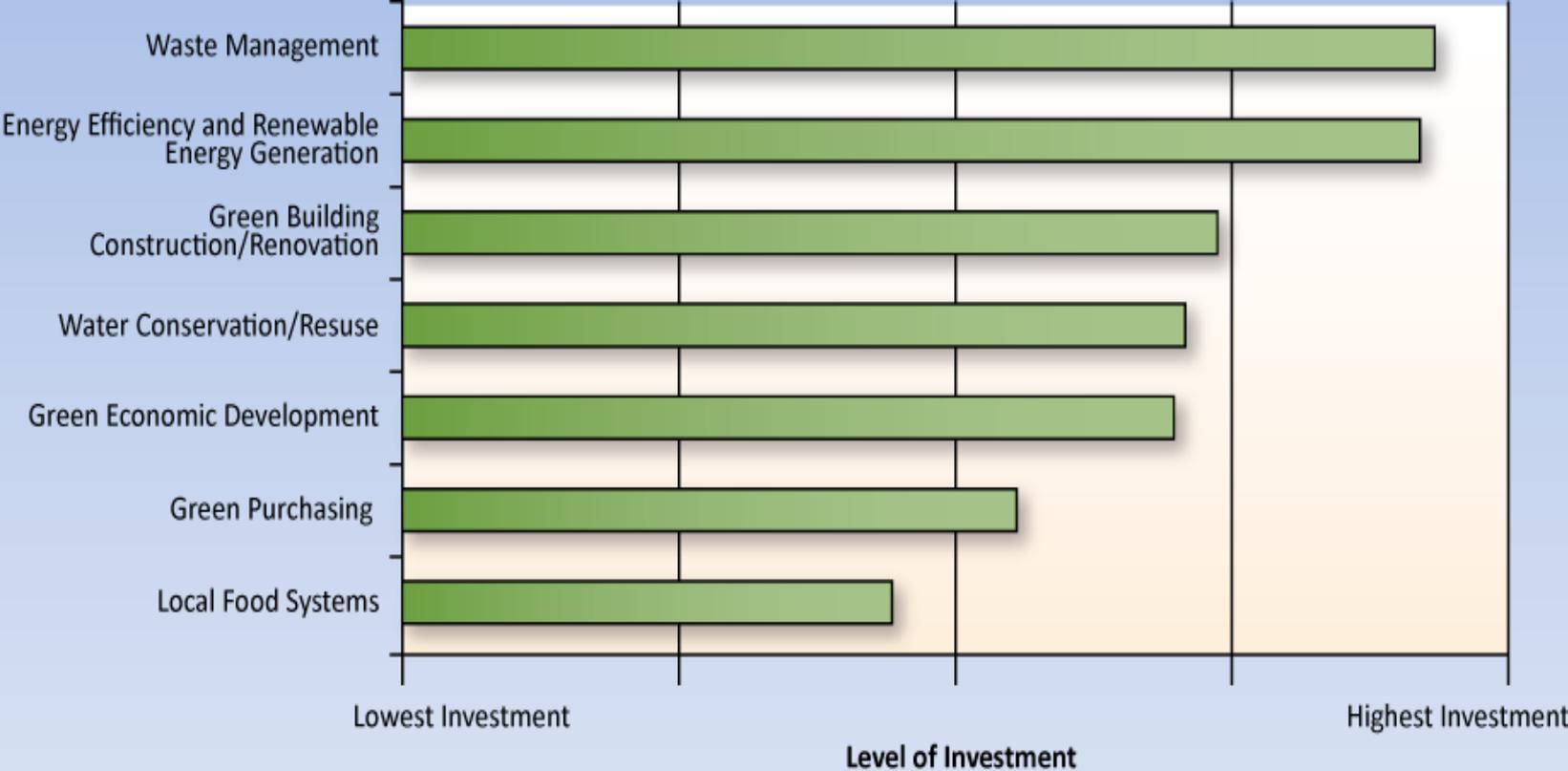
Ability of the current generation to meet their needs without compromising the opportunity of future generations to meet their needs.



2010 Sustainability Survey Overview

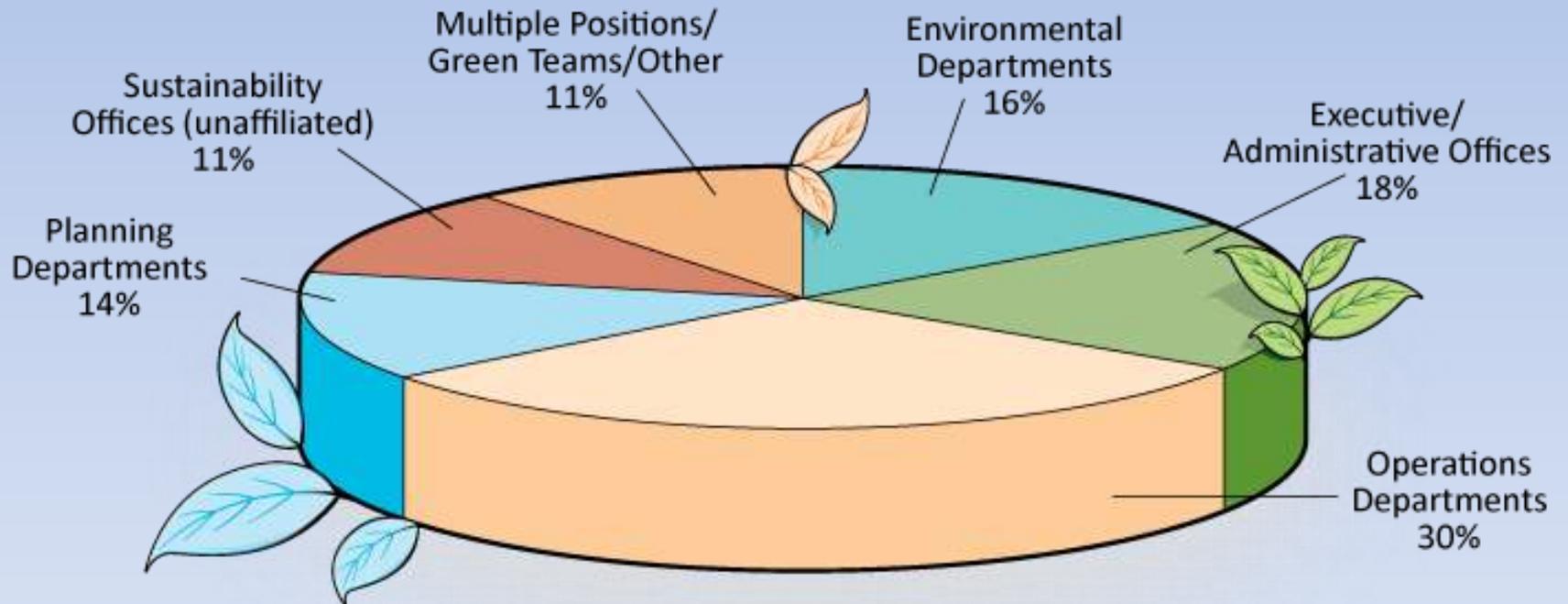
- *Surveyed 3,068 counties*
- *750 responses*
- *578 separate counties*
- *Almost 20% of America's Counties*
- *Performed analyses by population, geographic location, and climate*

County Investment in Sustainability

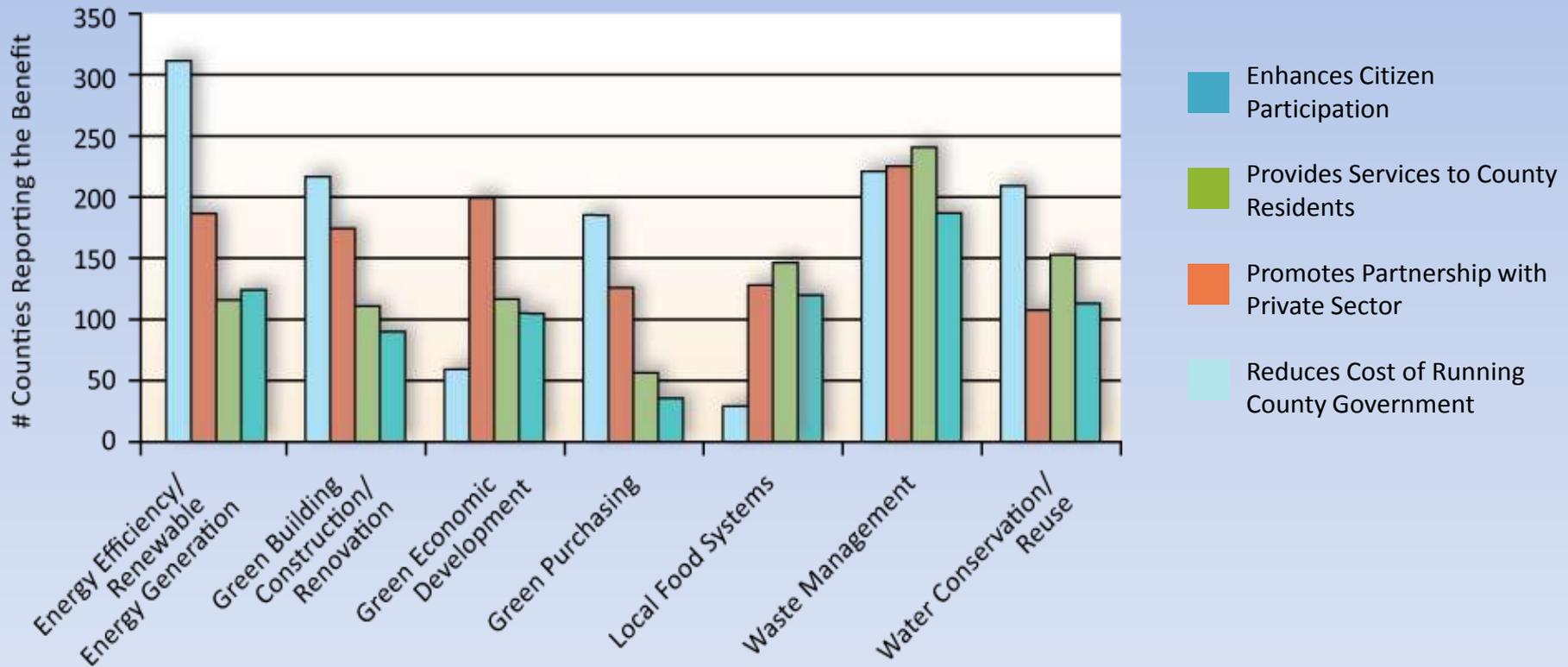


County Sustainability Staffing

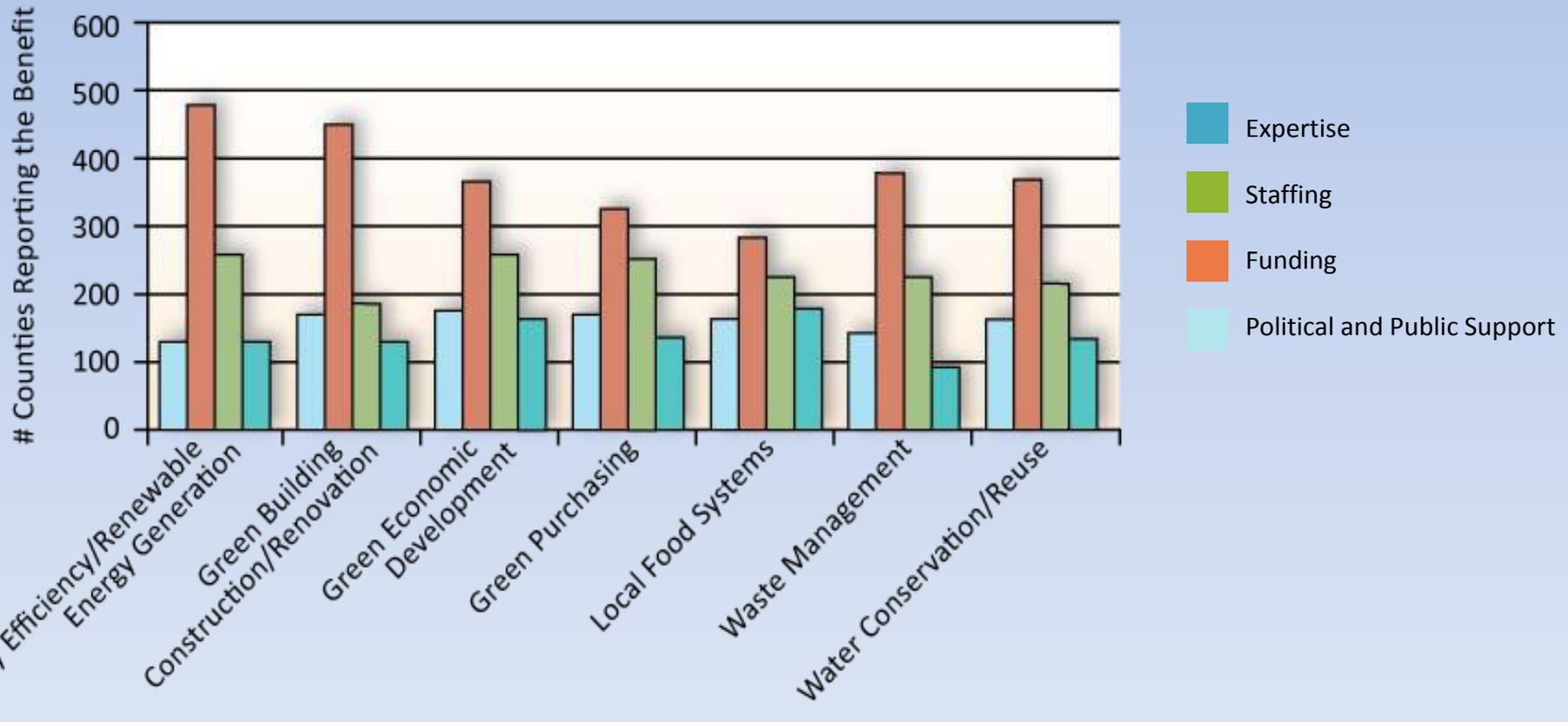
Where are Green Efforts Coordinated within County Government?



Benefits to County Sustainability Strategies



Barriers to Accomplishing County Sustainability Strategies



Why is Clean Strategic Energy Planning Important?

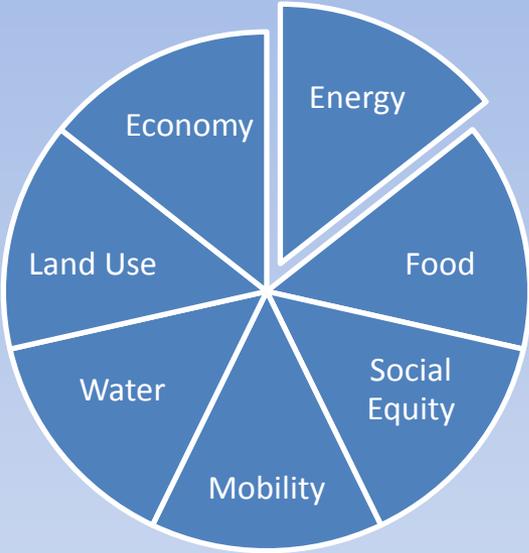
- Clean energy projects create permanent domestic jobs
- Local construction and engineering jobs
- Creating a market for clean energy that generates business opportunities
- Training for the local workforce on the latest technology and best practices

- Cost savings from avoided energy expenditures
- More funds available for other community needs – schools, safety, etc.
- Reduced risk from price increases

- Reduced air pollution and greenhouse gas emissions
- Cleaner air
- Reduced negative impacts on public health
- Piece of the solution in non-attainment areas

Where Does Strategic Energy Planning Fit?

Within a Sustainability Plan...

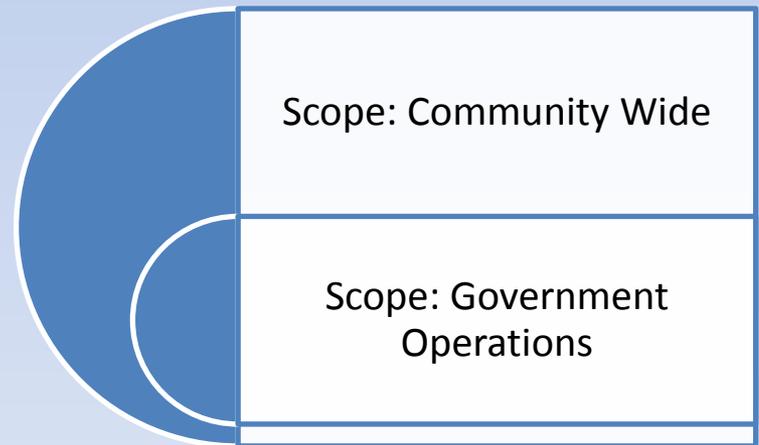


As part of a GHG Reduction Strategy...



...Or a stand alone Strategic Energy Plan

Embedded in a Comprehensive Plan...

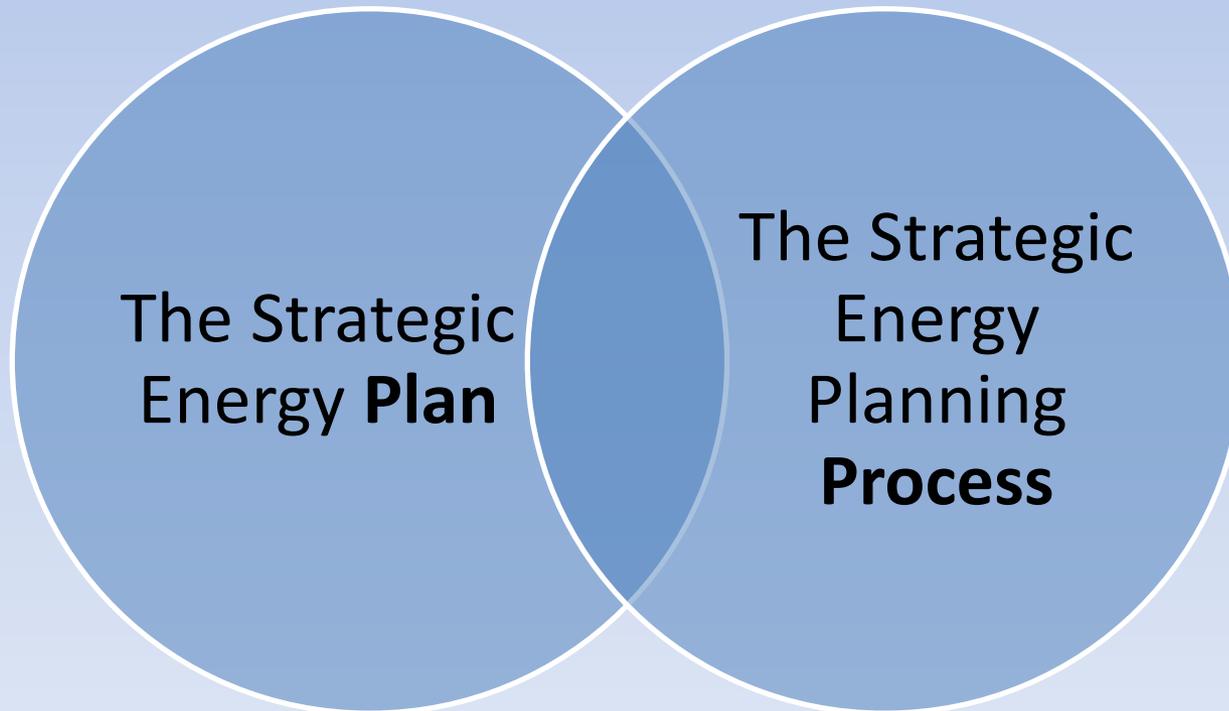


What is essential to Strategic Energy Planning (SEP)?

Strategic Energy Planning efforts may vary **where** they are documented in the local planning landscape....

But more importantly, is understanding **what is** Strategic Energy Planning?

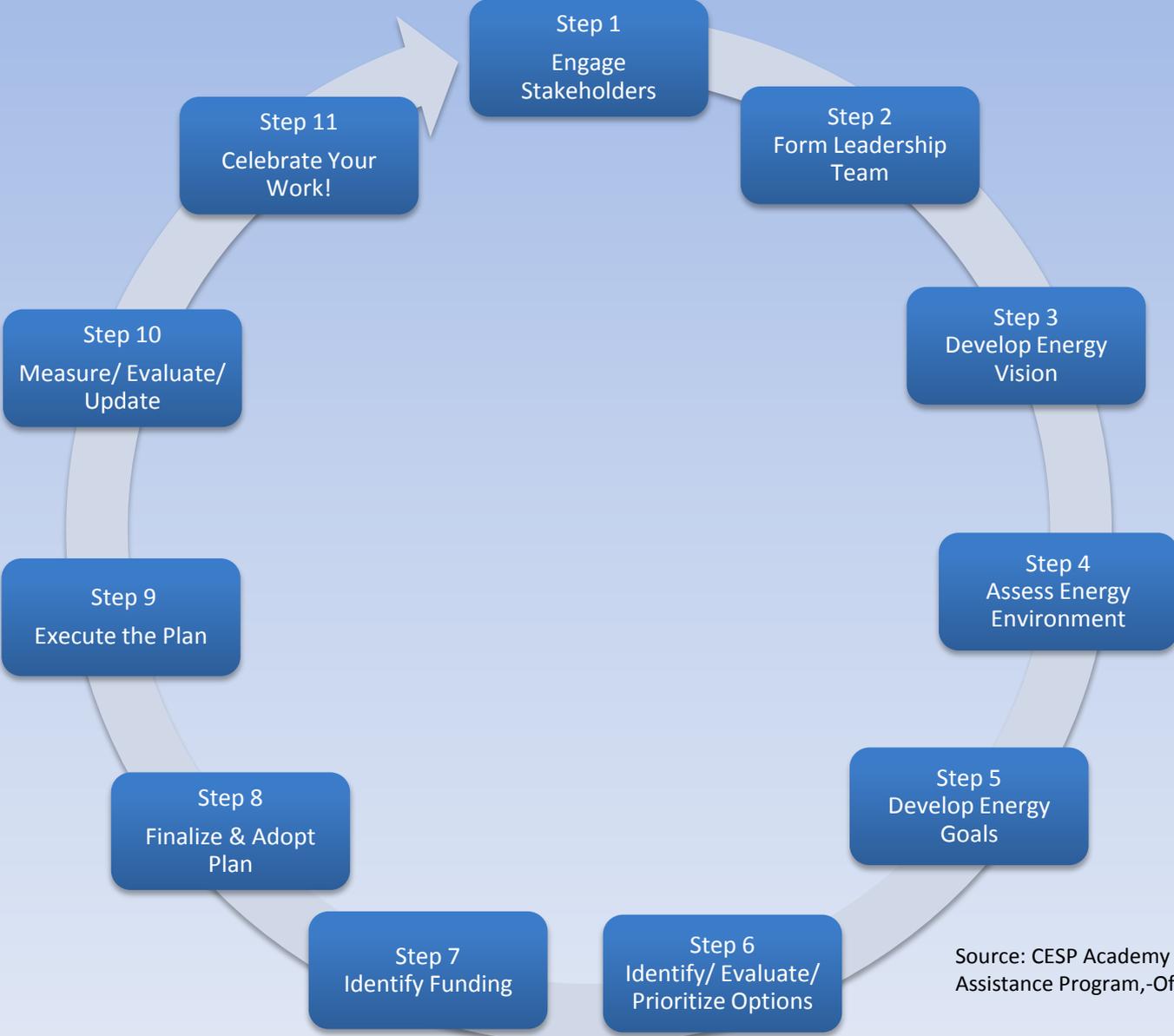
Two Components of Strategic Energy Planning



Common Elements of a SEP Plan

- **Executive Summary**
- **Energy Vision**
- **Current Energy Environment**
 - Policy drivers for improving energy performance
 - Energy performance of buildings and fleets
 - Existing energy programs
- **Strategic Plan**
 - **Goal 1**
 - Measure 1A
 - Measure 1B
 - Measure 1C
- **Communication/Stakeholder Involvement Plan**
- **Performance Measurement Plan**
- **Energy Contacts and Resources**

The Strategic Energy Planning Process



Source: CESP Academy Materials, Technical Assistance Program, -Office of EE/RE Dept. of Energy

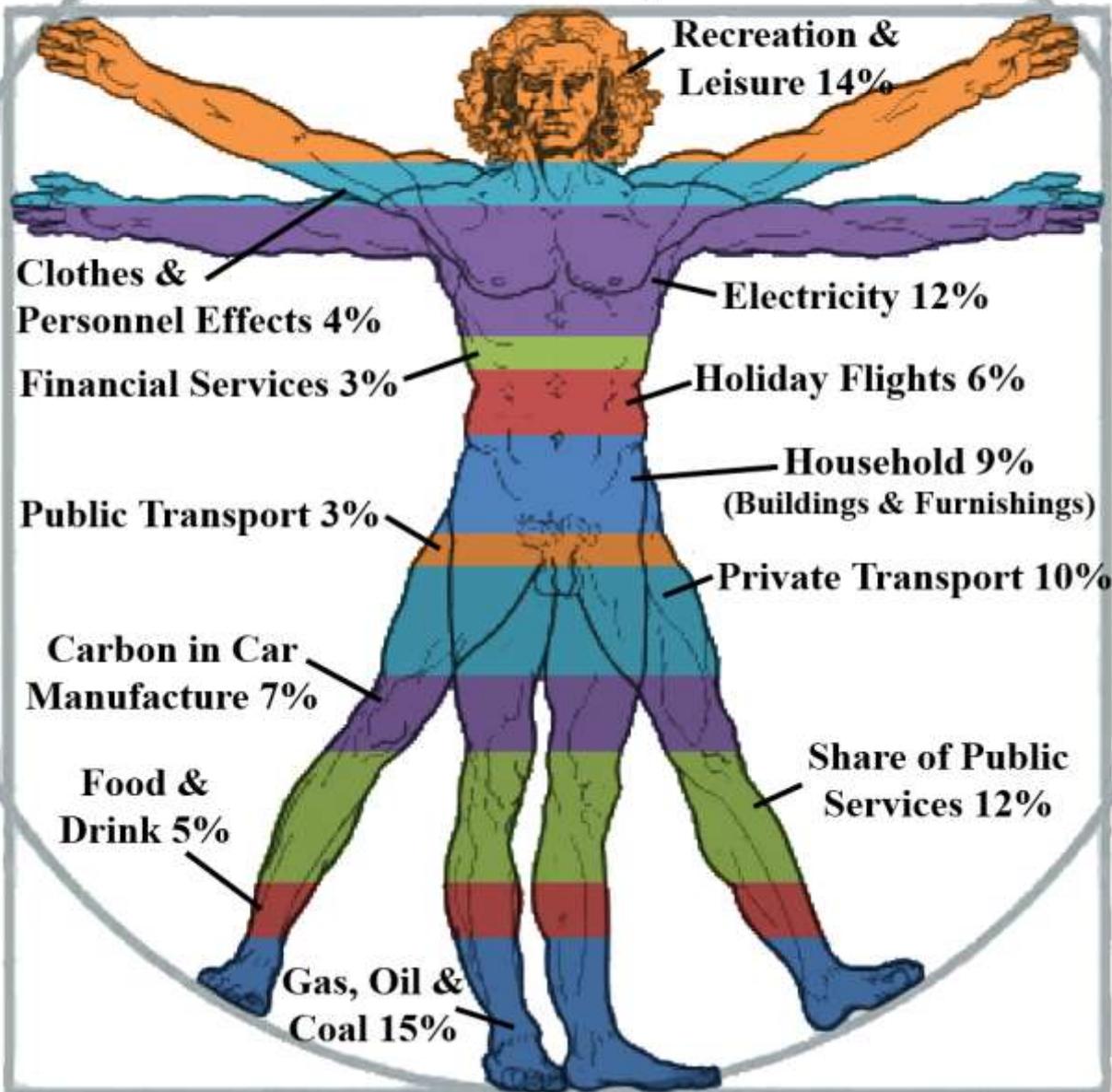
What is Carbon Foot Print?

A **carbon footprint** has historically been defined as "the total set of greenhouse gas (GHG) emissions caused by an organization, event, product or person.

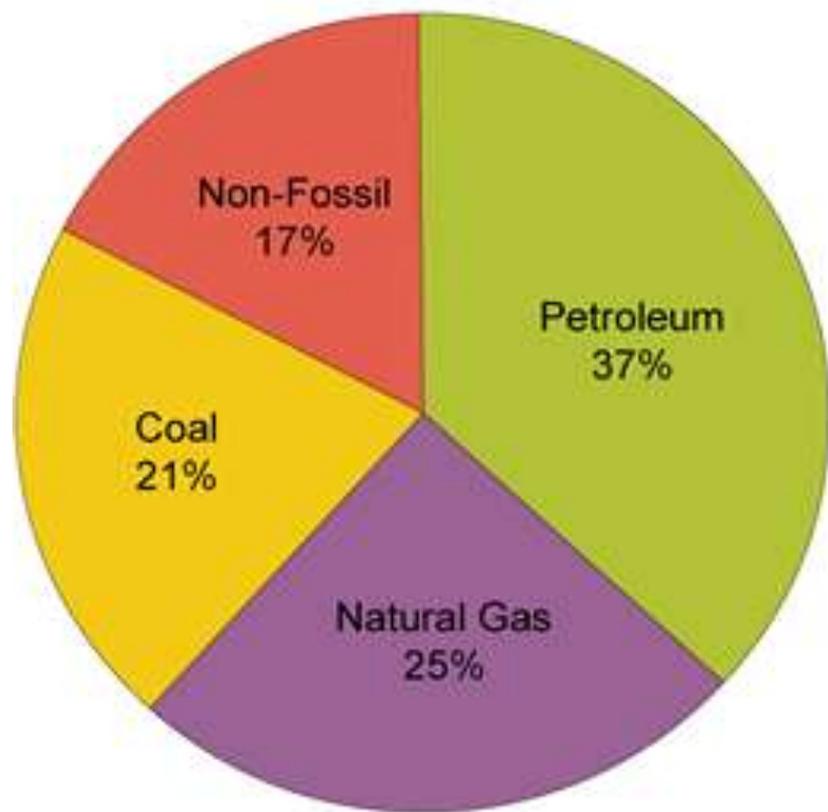
Greenhouse gases can be emitted through transport, land clearance, and the production and consumption of food, fuels, manufactured goods, materials, wood, roads, buildings, and services. **For simplicity of reporting, it is often expressed in terms of the amount of carbon dioxide, or its equivalent of other GHGs, emitted.**



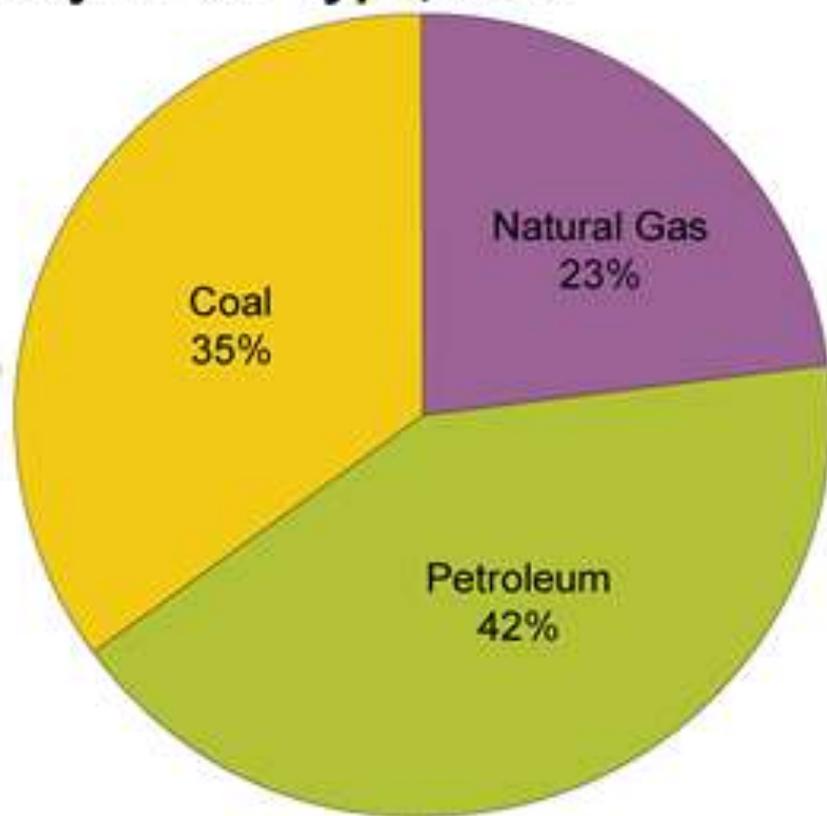
Breakdown of An Average Persons Carbon Footprint



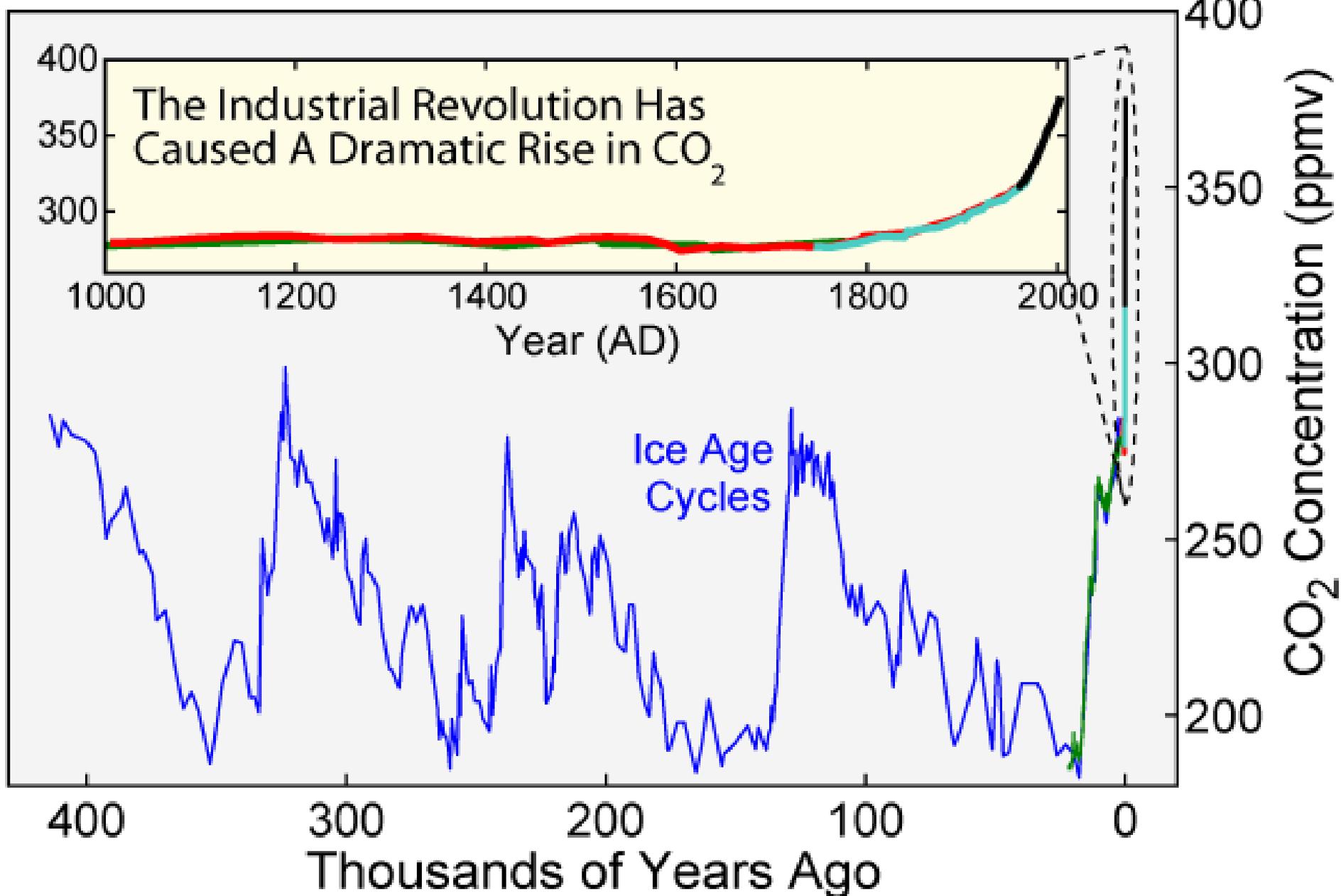
U.S. Energy Consumption by Major Fuel Type, 2010

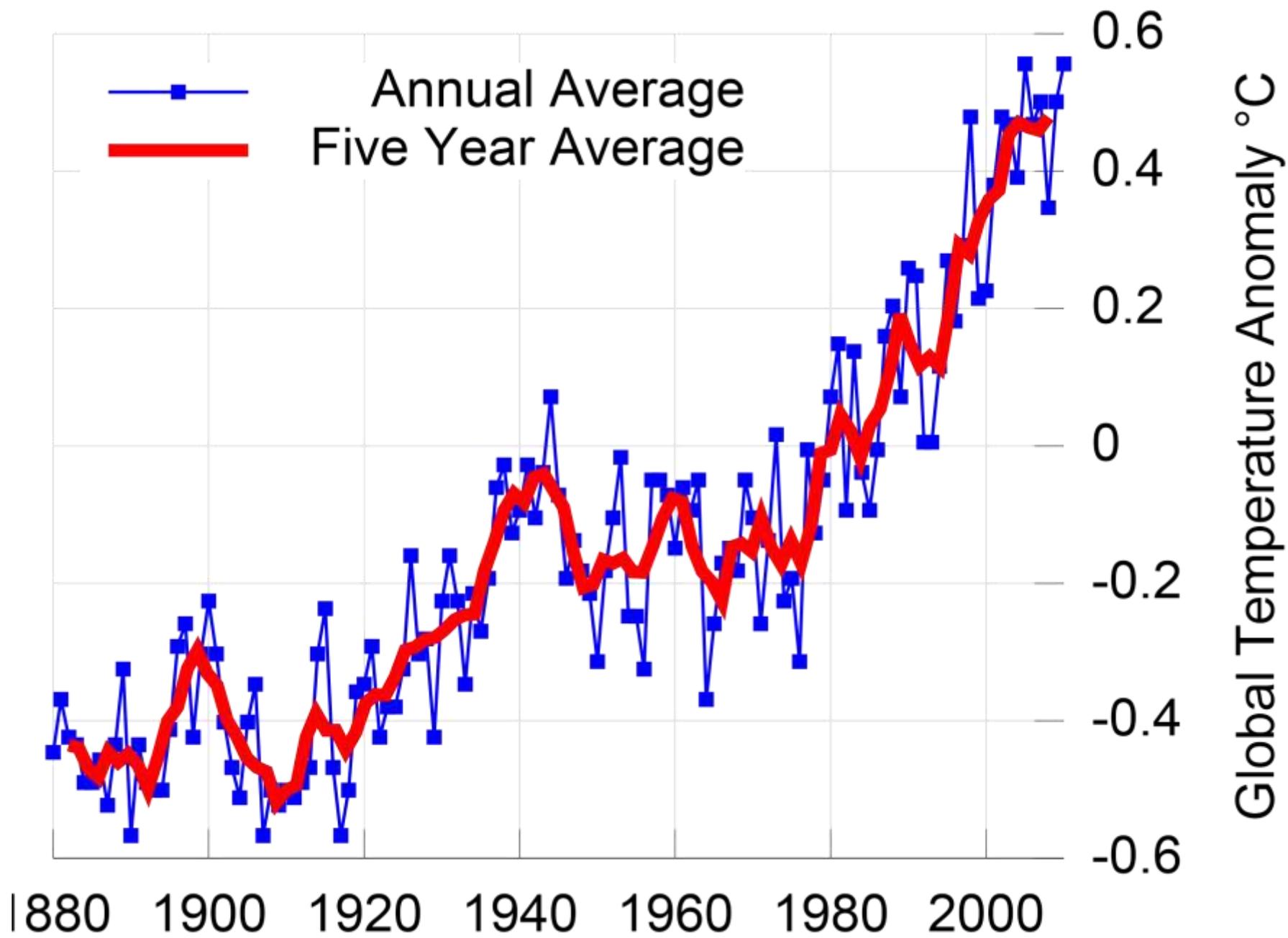


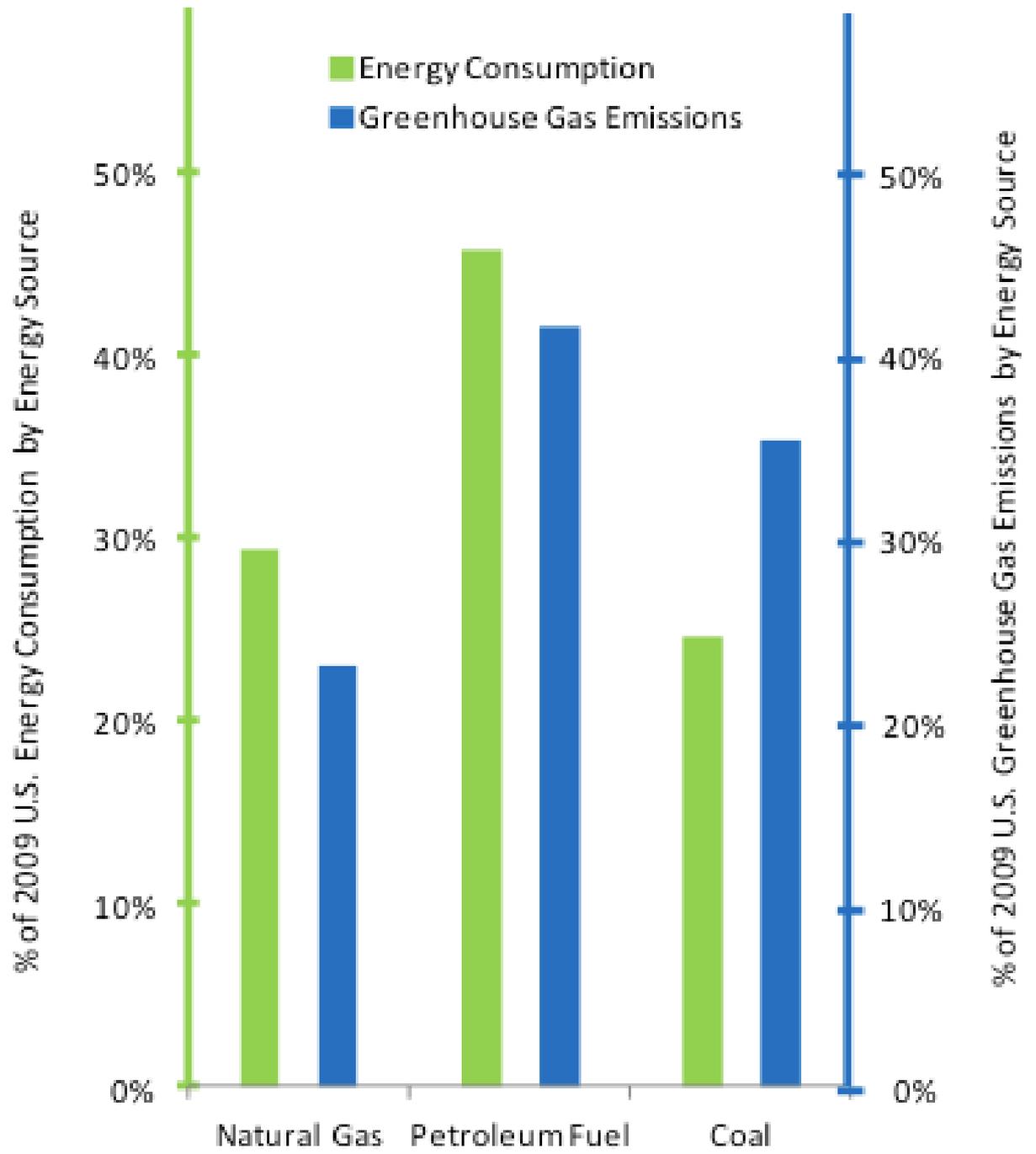
Resulting U.S. Energy-Related Carbon Dioxide Emissions by Major Fuel Type, 2010



Carbon Dioxide Variations



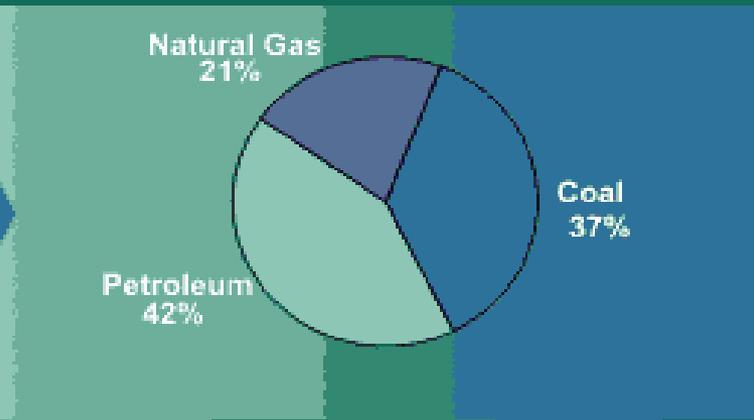
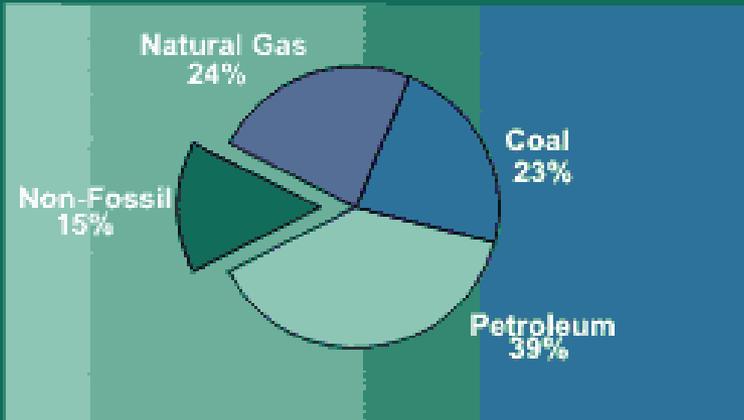




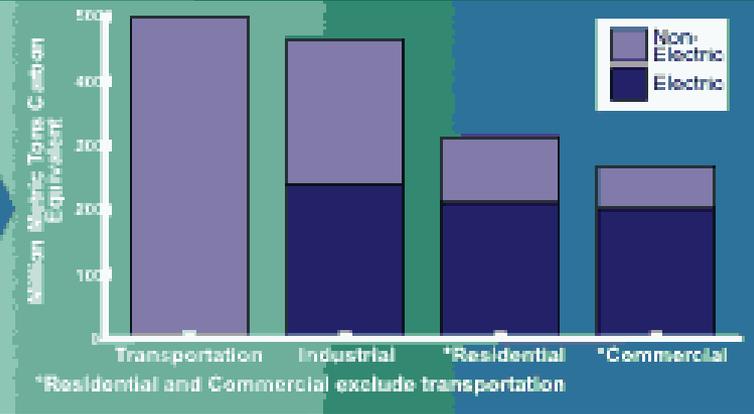
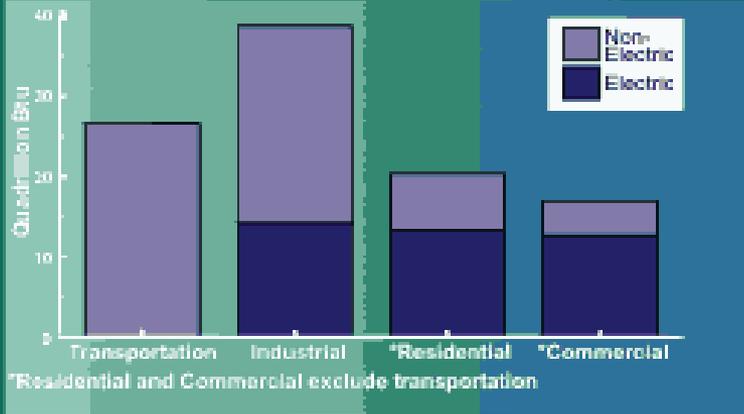
U. S. Primary Energy Consumption

Resulting Carbon Dioxide Emissions

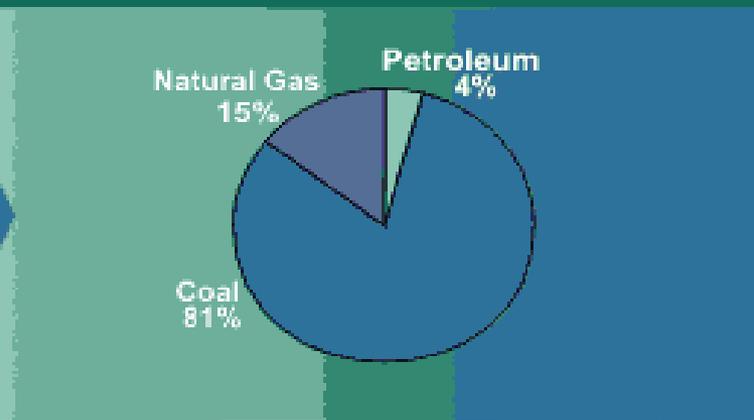
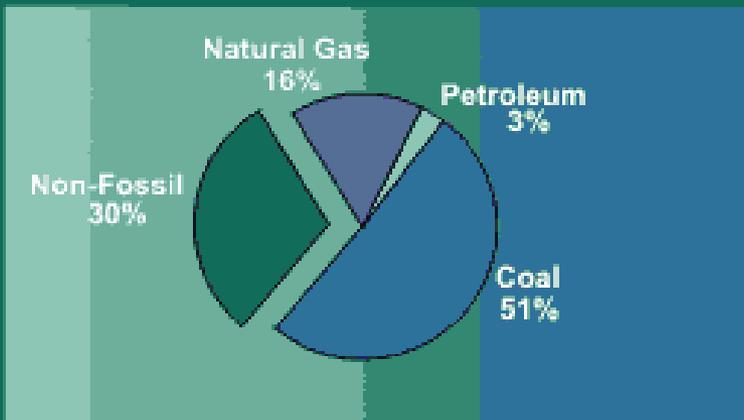
By Fuel Type



By End-Use Sector



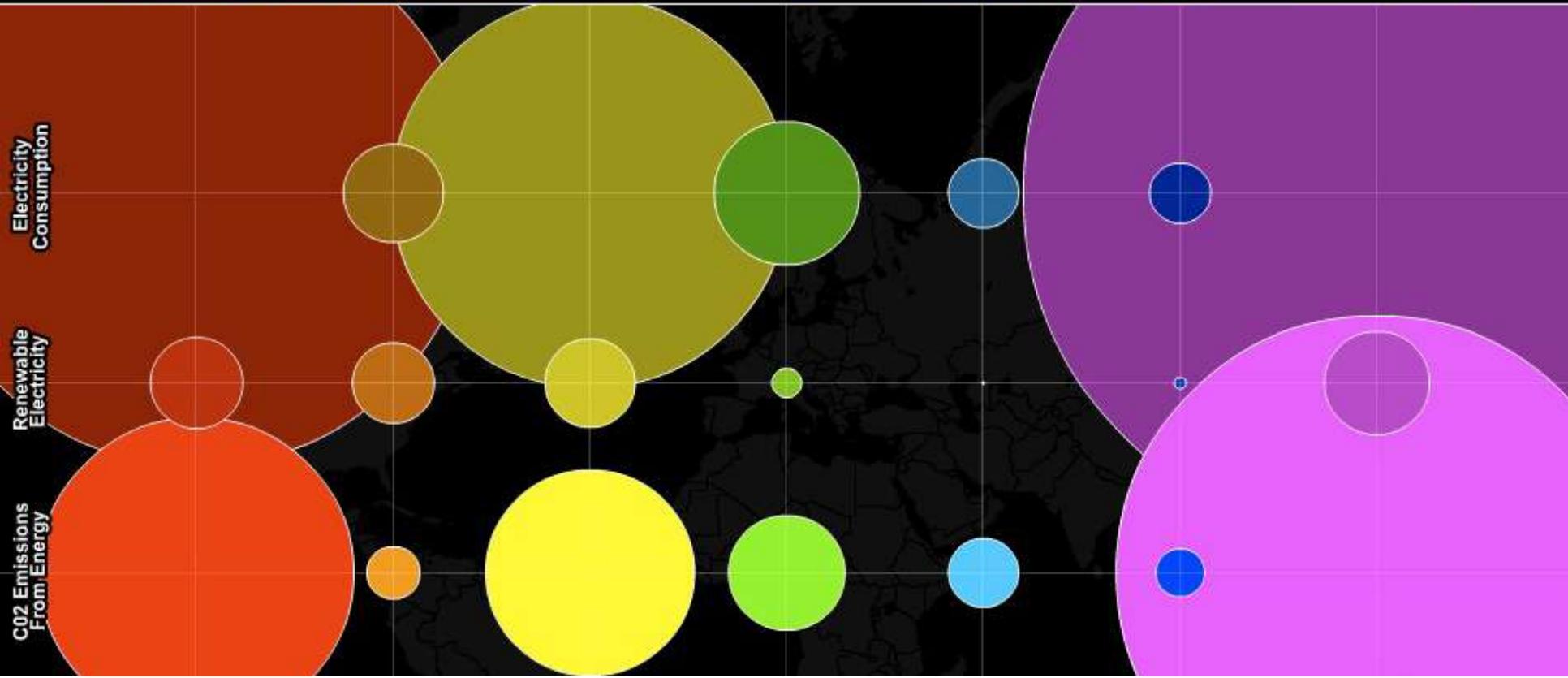
By Electricity Sector



Infographic: Global Energy Consumption

1980 1990 2000 2007

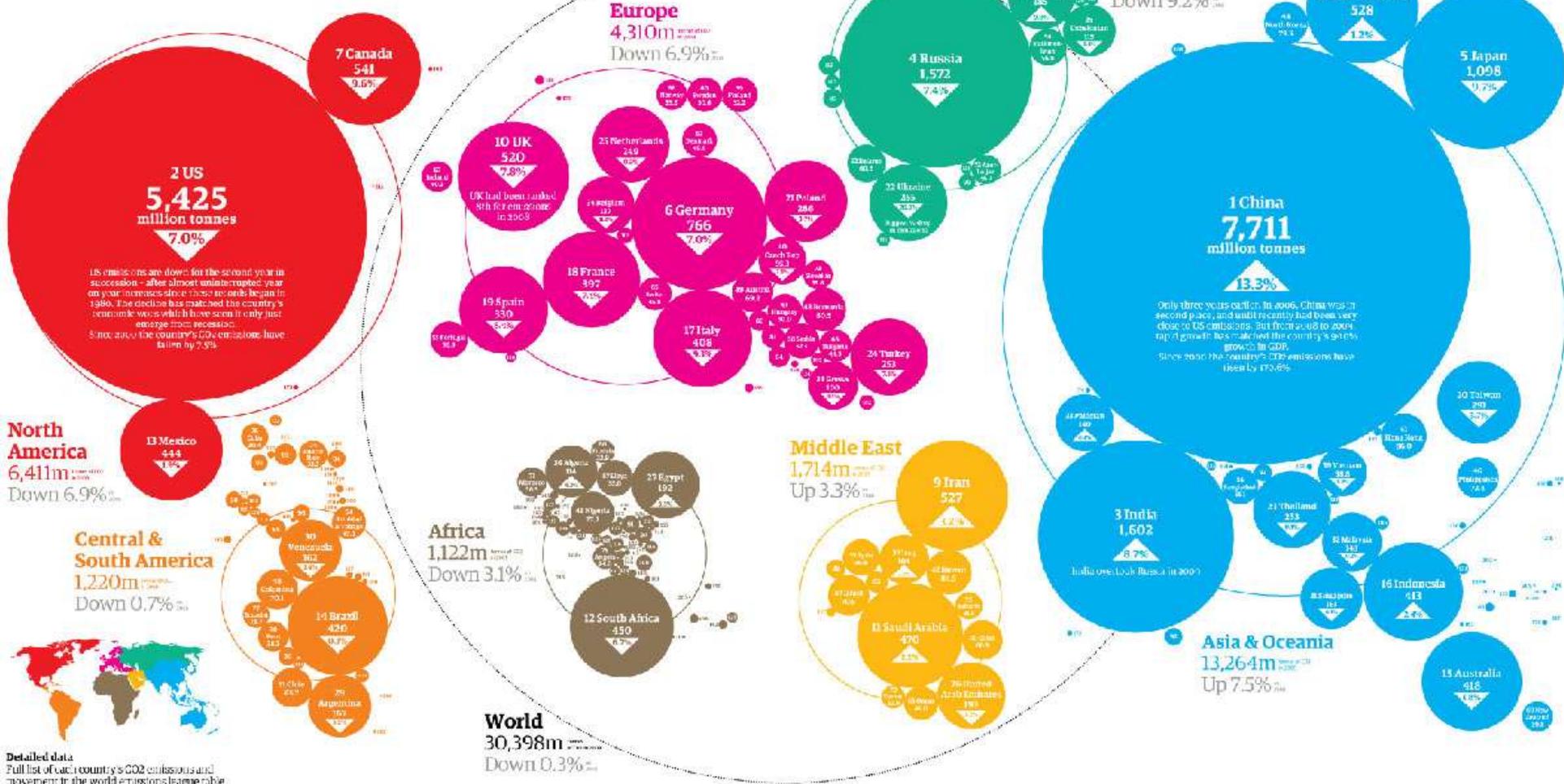
North America Central & South America Europe Eurasia Middle East Africa Asia and Oceania



An atlas of pollution: the world in carbon dioxide emissions

Latest data published by the US Energy Information Administration provides a unique picture of economic growth - and decline. China has sped ahead of the U.S. as shown by this map, which sizes each country according to CO₂ emissions. And, for the first time, world emissions have gone down.

100% CO₂ Emissions
 2008-2009
 2008-2009
 2008-2009
 2008-2009

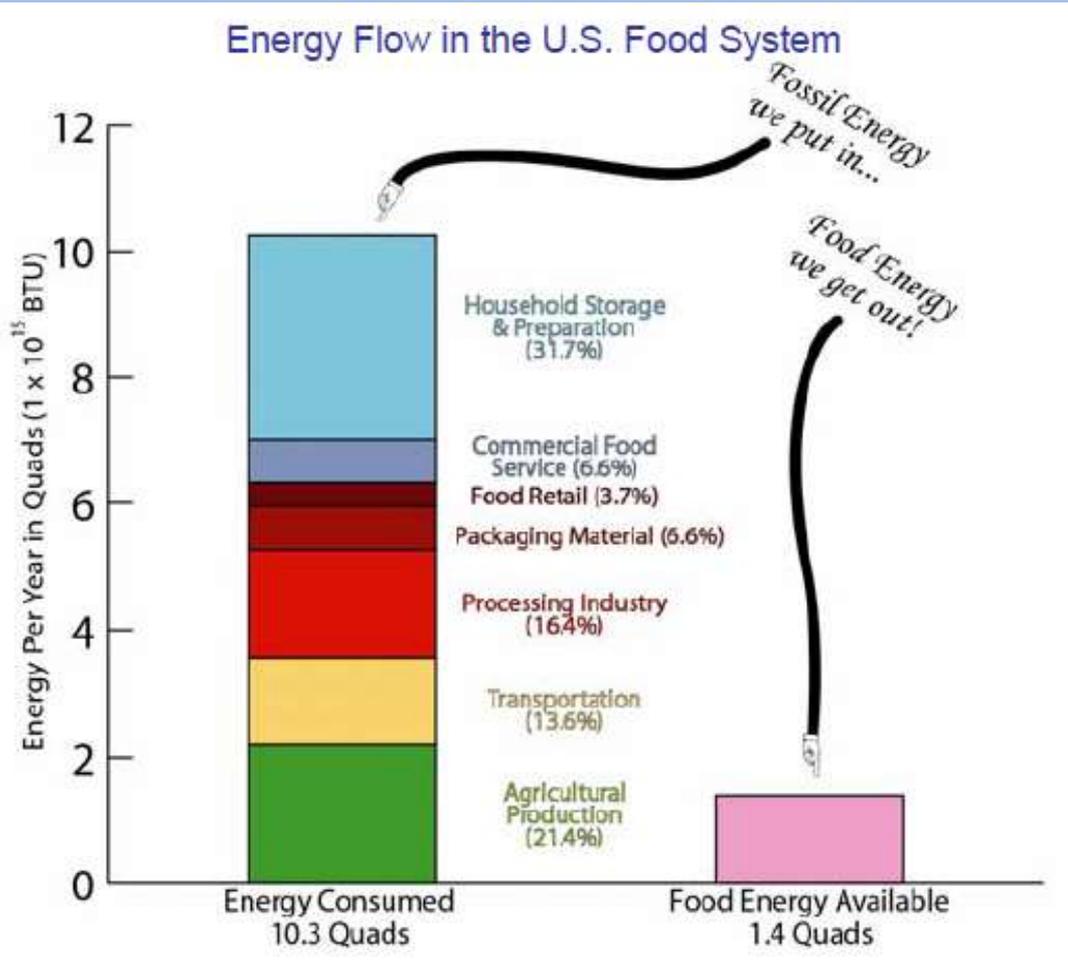


Detailed data
 Full list of each country's CO₂ emissions and movement in the world emissions league table

2009	Country	2009	2008	Change	2009	Country	2009	2008	Change
1	US	5,425	5,068	7.0%	1	China	7,711	6,764	13.3%
2	China	7,711	6,764	13.3%	2	India	1,602	1,477	8.7%
3	India	1,602	1,477	8.7%	3	Russia	1,572	1,464	7.4%
4	Russia	1,572	1,464	7.4%	4	Germany	766	716	7.0%
5	Japan	1,098	1,000	9.7%	5	France	397	370	7.1%
6	Germany	766	716	7.0%	6	UK	520	485	7.8%
7	Canada	541	518	3.6%	7	Spain	330	310	5.9%
8	South Korea	528	518	1.2%	8	Italy	408	390	4.3%
9	Iran	527	515	1.6%	9	Netherlands	249	248	1.0%
10	UK	520	485	7.8%	10	Poland	286	281	3.2%
11	Saudi Arabia	510	494	1.6%	11	Ukraine	205	200	2.3%
12	South Africa	450	441	1.7%	12	Belgium	193	192	0.5%
13	Mexico	444	436	1.9%	13	Denmark	188	187	0.5%
14	Brazil	426	420	0.8%	14	Sweden	187	186	0.5%
15	Australia	416	408	1.8%	15	Portugal	182	181	0.5%
16	Indonesia	413	402	2.4%	16	Finland	179	178	0.5%
17	Italy	408	390	4.3%	17	Denmark	188	187	0.5%
18	France	397	370	7.1%	18	Denmark	188	187	0.5%
19	Spain	330	310	5.9%	19	Denmark	188	187	0.5%
20	Kazakhstan	195	194	1.8%	20	Denmark	188	187	0.5%
21	Netherlands	249	248	1.0%	21	Denmark	188	187	0.5%
22	Ukraine	205	200	2.3%	22	Denmark	188	187	0.5%
23	Poland	286	281	3.2%	23	Denmark	188	187	0.5%
24	Turkey	253	248	5.0%	24	Denmark	188	187	0.5%
25	Egypt	192	191	1.9%	25	Denmark	188	187	0.5%
26	Algeria	180	179	1.8%	26	Denmark	188	187	0.5%
27	Thailand	253	251	2.5%	27	Denmark	188	187	0.5%
28	Indonesia	413	402	2.4%	28	Denmark	188	187	0.5%
29	Australia	416	408	1.8%	29	Denmark	188	187	0.5%
30	Taiwan	303	299	2.2%	30	Denmark	188	187	0.5%
31	Thailand	253	251	2.5%	31	Denmark	188	187	0.5%
32	Malaysia	197	196	1.7%	32	Denmark	188	187	0.5%
33	Indonesia	413	402	2.4%	33	Denmark	188	187	0.5%
34	Australia	416	408	1.8%	34	Denmark	188	187	0.5%
35	Taiwan	303	299	2.2%	35	Denmark	188	187	0.5%
36	Thailand	253	251	2.5%	36	Denmark	188	187	0.5%
37	Malaysia	197	196	1.7%	37	Denmark	188	187	0.5%
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39	Australia	416	408	1.8%	39	Denmark	188	187	0.5%
40	Taiwan	303	299	2.2%	40	Denmark	188	187	0.5%
41	Thailand	253	251	2.5%	41	Denmark	188	187	0.5%
42	Malaysia	197	196	1.7%	42	Denmark	188	187	0.5%
43	Indonesia	413	402	2.4%	43	Denmark	188	187	0.5%
44	Australia	416	408	1.8%	44	Denmark	188	187	0.5%
45	Taiwan	303	299	2.2%	45	Denmark	188	187	0.5%
46	Thailand	253	251	2.5%	46	Denmark	188	187	0.5%
47	Malaysia	197	196	1.7%	47	Denmark	188	187	0.5%
48	Indonesia	413	402	2.4%	48	Denmark	188	187	0.5%
49	Australia	416	408	1.8%	49	Denmark	188	187	0.5%
50	Taiwan	303	299	2.2%	50	Denmark	188	187	0.5%

Not An Atlas
 © 2009 EIA
 EIA/DOE

Strategic Energy Planning Beyond EE/RE



Source: Center for Sustainable Systems, University of Michigan

Program Examples

- Eliminate community code barriers such as restrictions on farmers markets, animal husbandry and overly simplistic rural agricultural zoning provisions
- Encourage urban agriculture and increase access to healthy food through code incentives

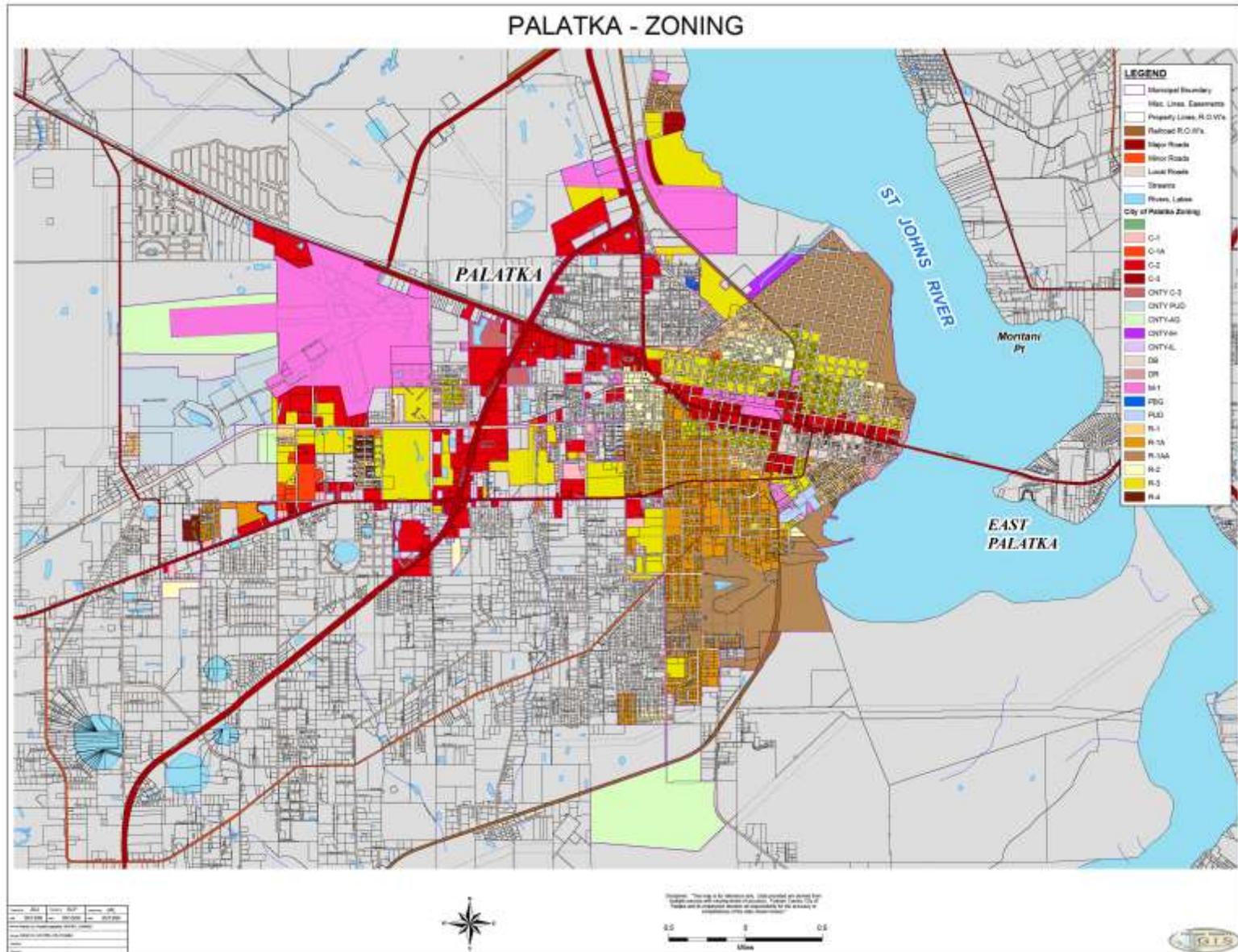
Source: Rocky Mountain Land Use Institute, Sustainable Development Code

Land Use

- City & County to establish goals to limit sprawl of rural development w/out using City services
- Eliminate enclaves within City boundaries
- Create tax abatement structure or reduced tap/impact fees to promote connections to existing water & sewer services
 - Delineate service areas contiguous to City to facilitate planning and alert developers of proposed improvements
 - Implement Complete Street concept



Palatka & surrounding area



Complete Streets

- Complete Street are sidewalks, bike lanes, (or wide paved shoulders) w/ frequent and safe crossing opportunities, accessible pedestrian signals, w/ desirable appearance including landscaping, shade, comfortable and accessible public transportation stops, including median islands, narrower travel lanes, roundabouts and special bus lanes.



Complete Streets



Transportation

- Create a change in our lifestyle which promotes the automobile an icon of success into one which adopts a lifestyle of sustainability in community and habitat design via use of “new urbanism” concepts and mass transportation.

- **Single Occupancy Vehicles (SOV's) inefficient**

- Car pooling/ van pooling may be the key to starting a successful **flexible** commuter transportation system.

- **Increase number of Park and Ride Stations.**

- Utilize / expand Amtrack/ CSX for **Commuter Transport.**

- Create **Fleet Management** Department for City of Palatka





FIGURE 3 – PUBLIC TRANSPORTATION ROUTES

Utilities



- Water
- Waste Water
- Reclaimed Water
- Natural Gas
- Electrical Power
- Renewable Energy



- Create an environment where the public understands importance of water conservation even though potable Water appears plentiful





Stewardship starts at home.



St. Johns River Water Management District

Waterwise

landscape information
at your finger tips



floridaswater.com

Protecting our rivers, lakes and streams

St. Johns River
Water Management District

Lawn and Landscape

watering restrictions

Saving Florida's water resources is a vital responsibility that will take everyone's participation to be successful. Water conservation may seem unnecessary in a state surrounded by water, but not all of that water is available for drinking or irrigation.

One of the most important ways to help meet our water supply needs for today and in the future is through conservation, which is the efficient and effective use of water.

To ensure the efficient use of water for lawn and landscape irrigation, the St. Johns River Water Management District has adopted watering restrictions. The restrictions are in effect year-round and apply throughout the District's entire 18-county area. Watering wisely promotes healthier lawns and landscapes, and conserves our precious water resources.

florida's water it's worth saving

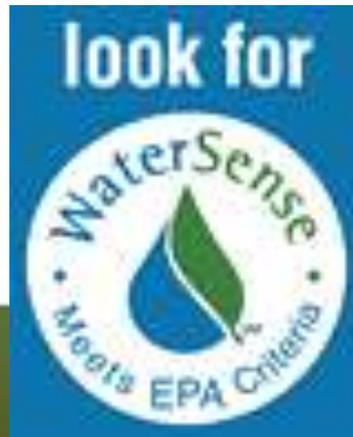
Water lawns only when needed,
but only on your designated days,
before 10 a.m. or after 4 p.m.

WATER CONSERVATION GUIDE

how to do your part



florida's water
it's worth saving



Natural Gas

Palatka Gas Authority

Residential Rebates **

Make the switch to Natural Gas

Tankless Water Heater	\$	675
WH - tank type	\$	550
Furnace	\$	785
Range	\$	200
Dryer	\$	150

Replace Natural Gas Appliances

Tankless Water Heater	\$	550
WH - tank type	\$	400
Furnace	\$	500
Range	\$	100
Dryer	\$	100

New Construction Natural Gas Appliances

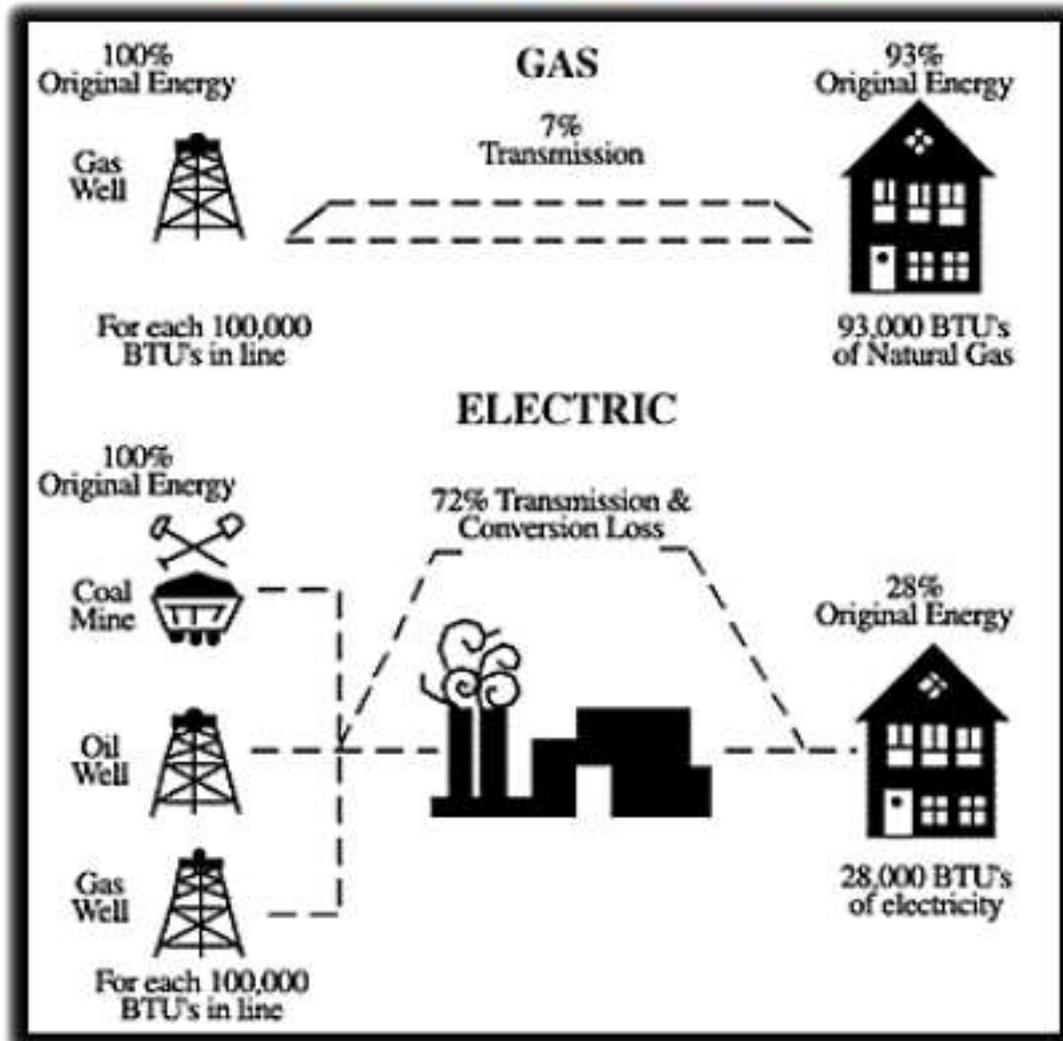
Tankless Water Heater	\$	550
WH - tank type	\$	400
Furnace	\$	500
Range	\$	150
Dryer	\$	100

** Gas water heater must be present or purchased for other incentives to apply

- Compressed Natural Gas reduces CO by 70-90%
- Natural Gas = ½ CO2 Emission of coal
- Natural Gas = 99% less particulates than coal
- 60-100 year supply in the U.S.



Site v. Source



Greenhouse Gas Emissions

Per unit of energy, natural gas contains less carbon than any other fossil fuel, and thus produces lower carbon dioxide (CO₂) emissions per vehicle mile traveled. While NGVs do emit methane, another principle greenhouse gas, any increase in methane emissions is more than offset by a substantial reduction in CO₂ emissions compared to other fuels.

The conclusion of recent studies such as those conducted by California Air Resources Board CARB and others is that, when used as transportation fuel, **natural gas can reduce greenhouse gas emissions by 20-29 percent compared with diesel and gasoline fueled vehicles, respectively.**



Natural Gas Vehicles



CARB LCFS Carbon Intensity Reductions for Natural Gas:

Light Duty Vehicle	Carbon Intensity of FuelgC02e/MJ	EER	Total	Reductions Relative to Gasoline
Gasoline (baseline - CA RFG w/ EtOH mix)	95.85	1	95.9	NA
CNG ICE	68.0	1	68.0	29%
Biomethane CNG ICE	11.01	1	11.0	89%
CNG 20% Biomethane ICE	56.602	1	56.6	41%
Heavy Duty Vehicle				
Diesel Fuel (baseline)	94.71	1	94.7	0%
CNG ICE	68.0	0.9	75.6	20%
CNG - 100% Biomethane - ICE	11.01	0.9	12.2	87%
CNG w/ 20% Biomethan Blend - ICE	56.602	0.9	62.9	34%

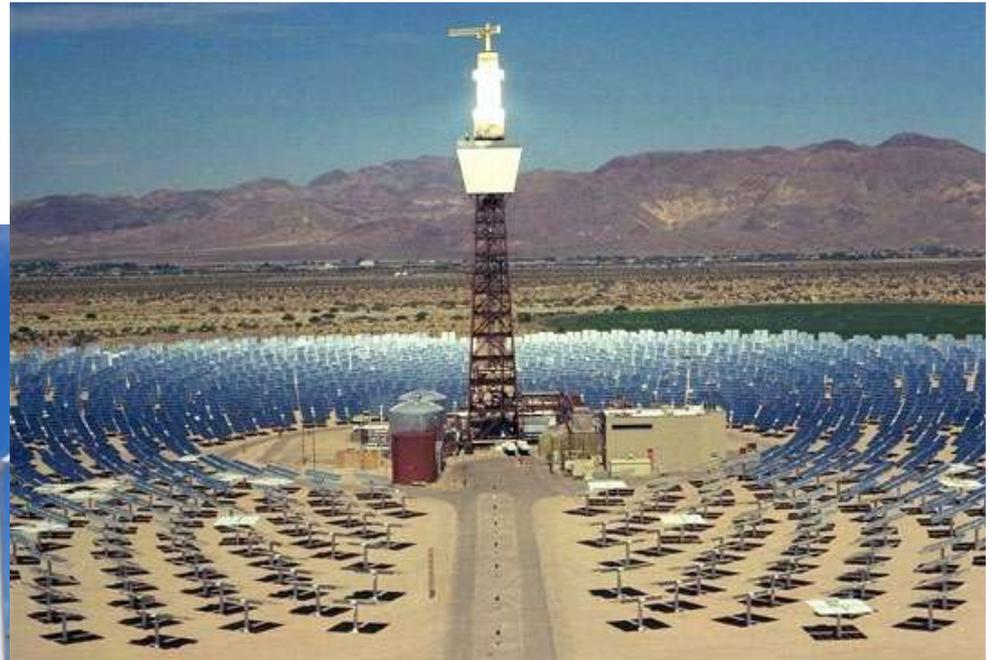
Facts about Natural Gas Vehicles



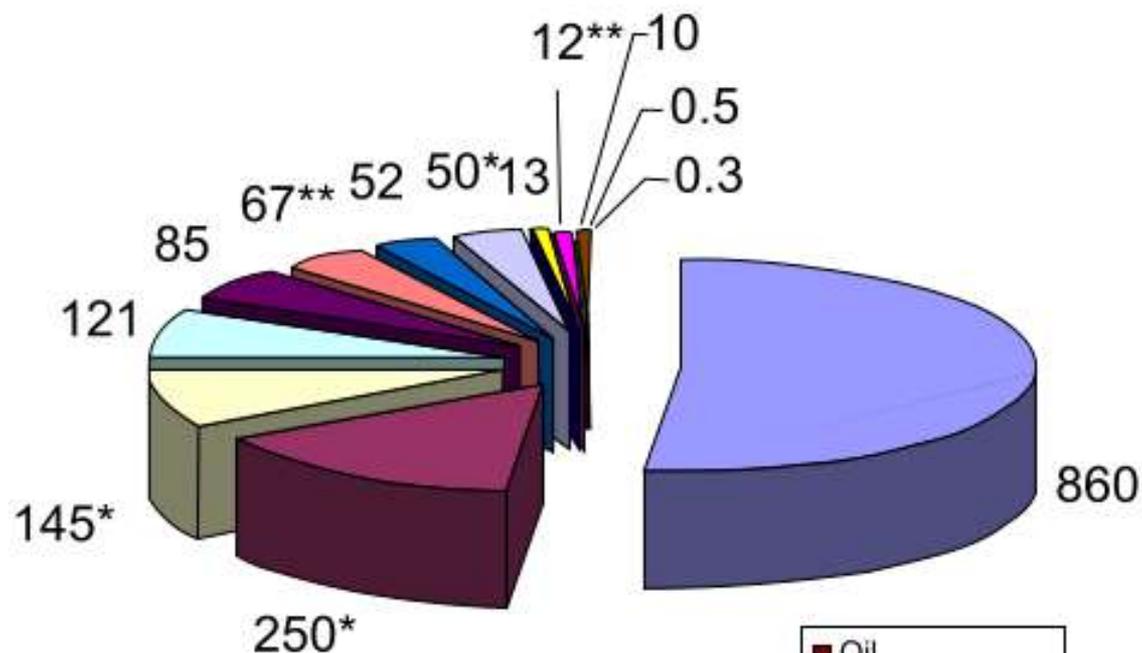
- There are about 112,000 NGVs on U.S. roads today and more than 13 million worldwide
- There are about 1,000 NGV fueling stations in the U.S. – and about half of them are open to the public.
- **There are no NG Fueling stations & no NGV distributors in Putnam County.**
- Natural gas costs one-third less than conventional gasoline at the pump. The U.S. EIA reports that natural gas costs 42 percent less than diesel fuel on an energy equivalent basis and is expected to cost 50 percent less by 2035.



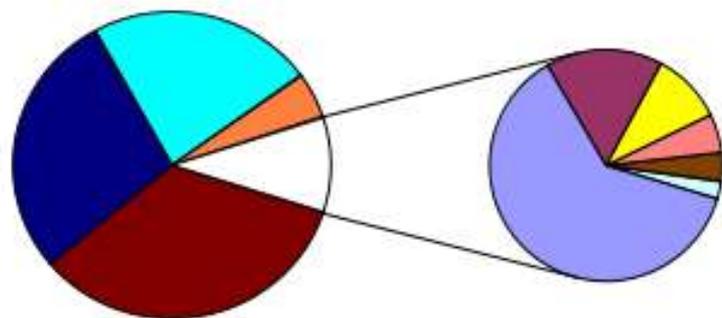
Renewable Energy



Renewable energy, end of 2008



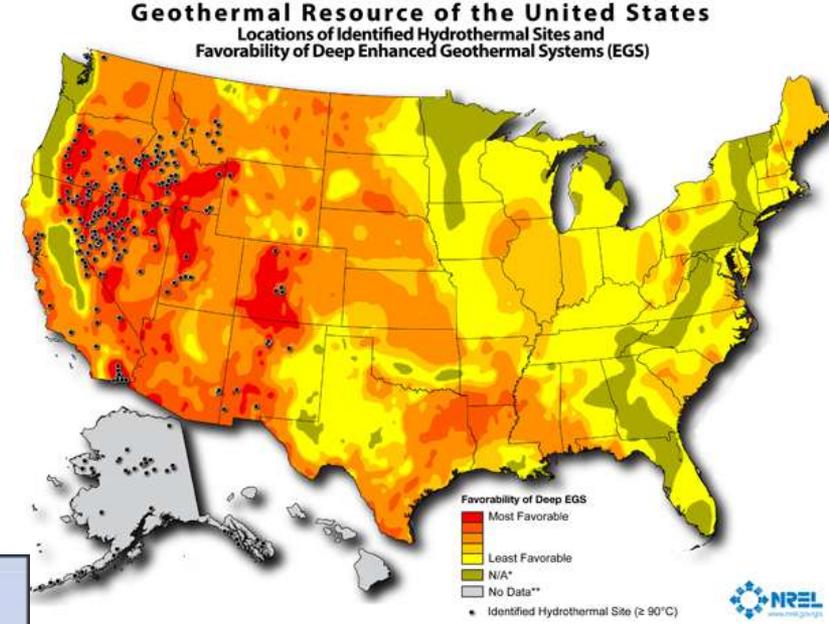
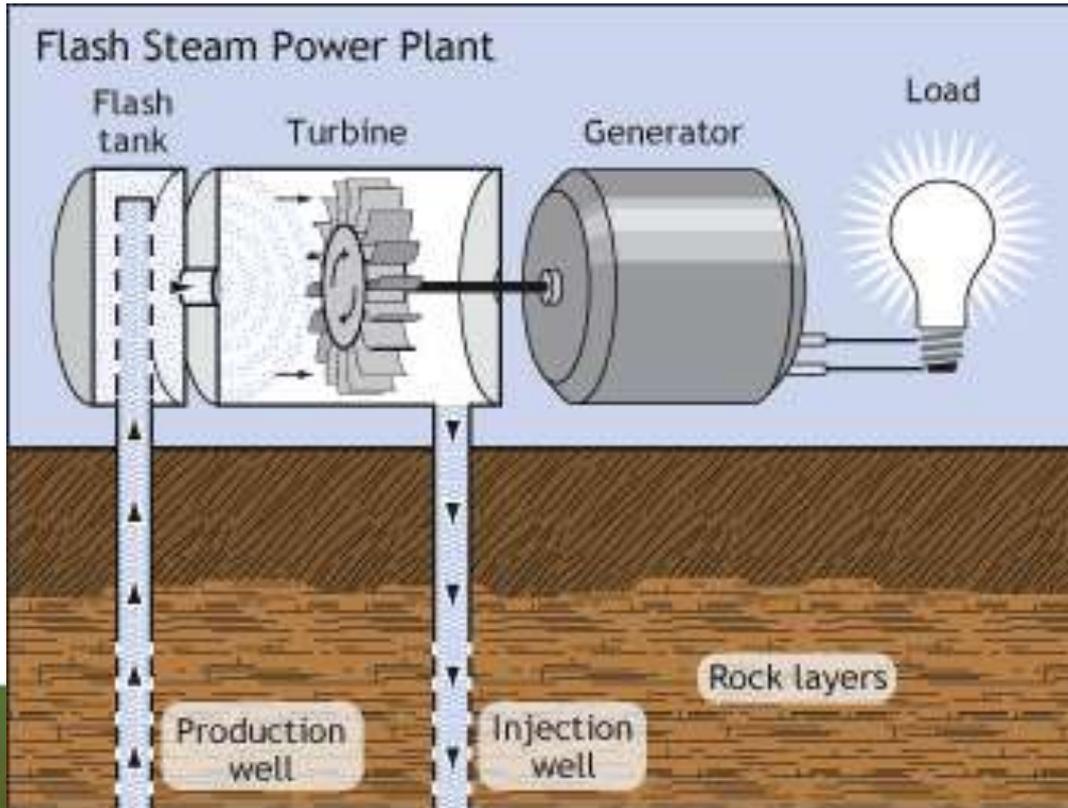
- Large hydropower
- Biomass heating*
- Solar collectors for hot water/space heating*
- Wind power
- Small hydropower
- Ethanol production**
- Biomass power
- Geothermal heating*
- Solar PV, grid-connected
- Biodiesel production**
- Geothermal power
- Concentrating solar thermal power (CPS)
- Ocean (tidal) power



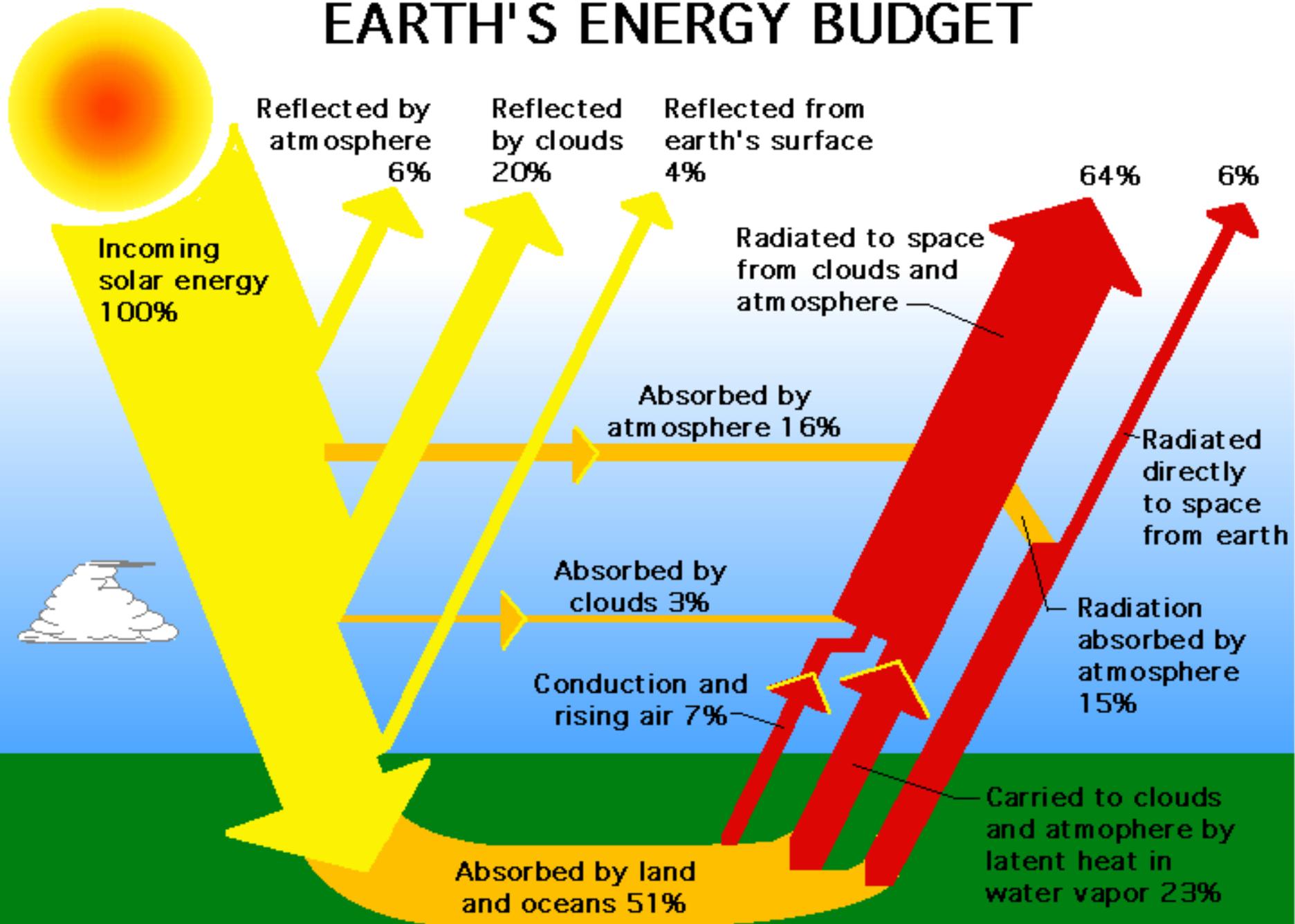
- Oil
- Coal
- Natural Gas
- Nuclear Energy
- Hydroelectricity
- Biomass
- Solar
- Biofuel
- Geothermal
- Wind

Total vs. Renewable

Geothermal



EARTH'S ENERGY BUDGET



Local Inventor - Keuka Wind



Energy Characteristics

**Water has 832 times
more density than air**

**3-knot current has the
kinetic energy of a
100+mph wind**



The Open-Center Turbine

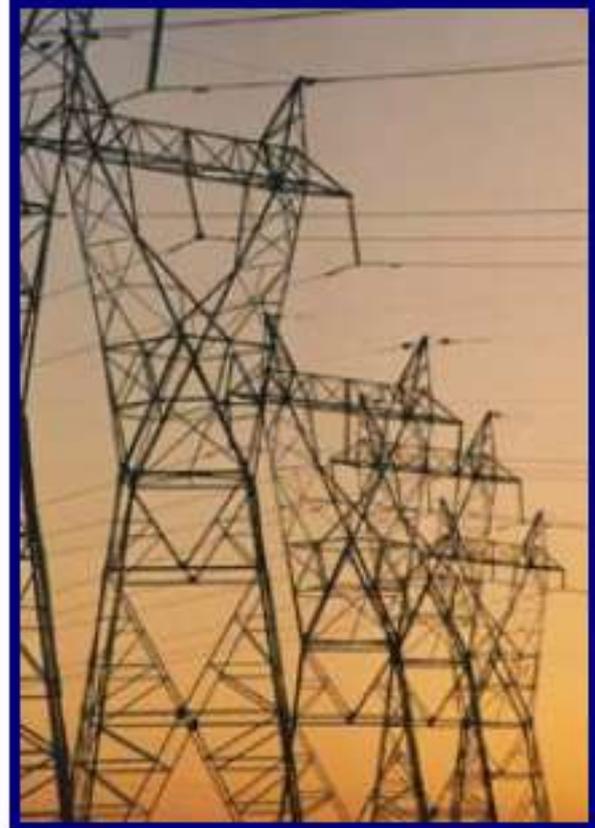
**Capable of
converting energy
of Gulf Stream into
usable electricity**

**Each unit is a
stand-alone
generator**

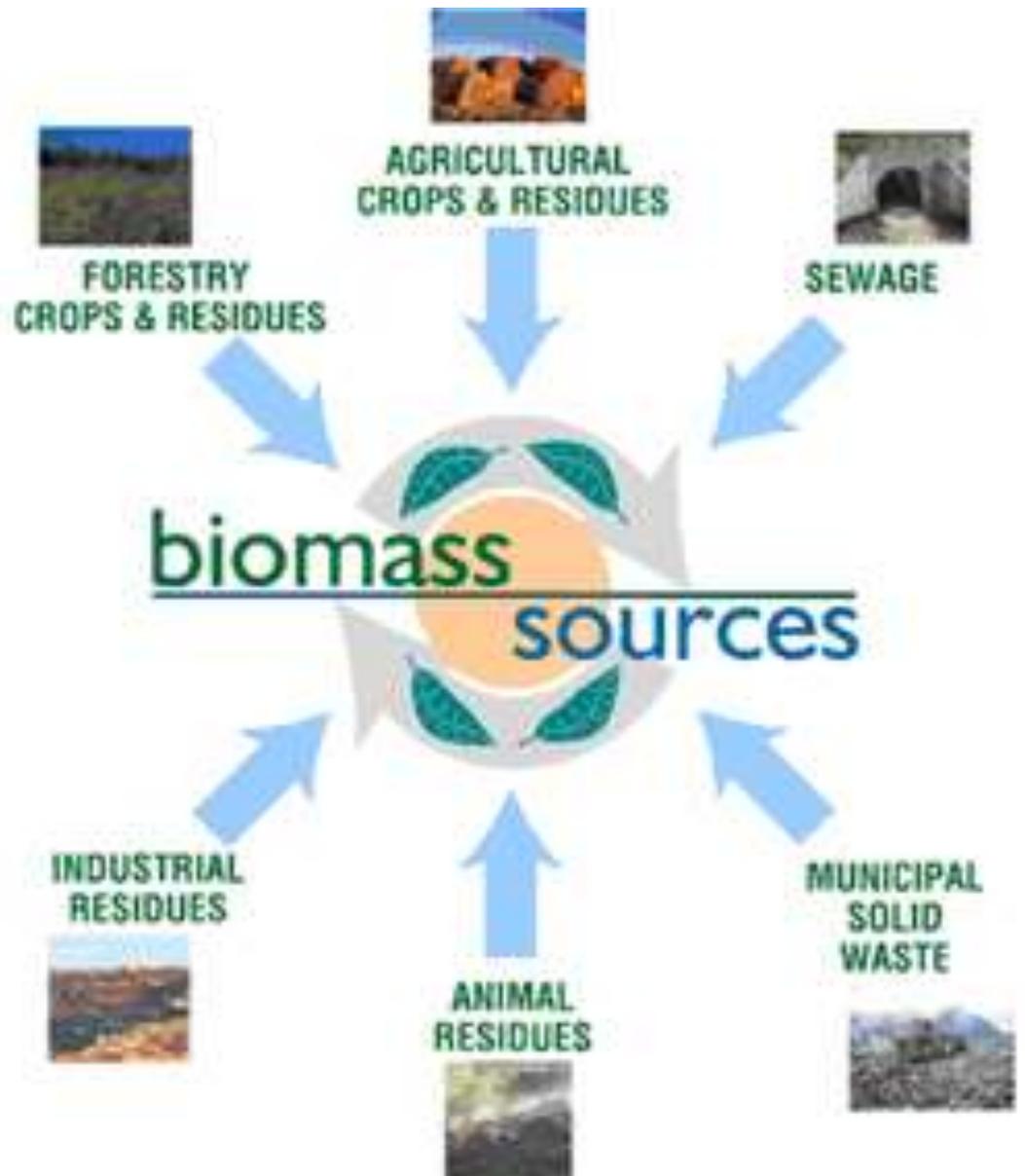


Electrical Capacity

Taking just 1/1000th of the available energy from the Gulf Stream would supply 35% of Florida's electrical needs



Biomass



Biomass



Batteries

- In the U.S. alone, more energy efficient battery chargers have the potential to save Americans more than 1 billion kilowatt hours (kWh) of energy per year, saving Americans more than \$100 million annually while preventing the release of more than one million tons of greenhouse gas emissions - equivalent to the emissions of 150,000 cars.
- Conventional battery chargers — even when not actively charging a product — can draw as much as 5 to 20 times more energy than is actually stored in the battery!



Parks & Recreation

- Conserve our Natural Resources, involve the public in outdoor recreation activities and increase the public's awareness of our environment and its limitations.
- Putnam County is the HUB of numerous trails that crisscross the state of Florida. We have the:

St. Johns River

Ravine Gardens

Ocala National Forest



FIGURE 10 - PROPOSED TRAILS IN PALATKA

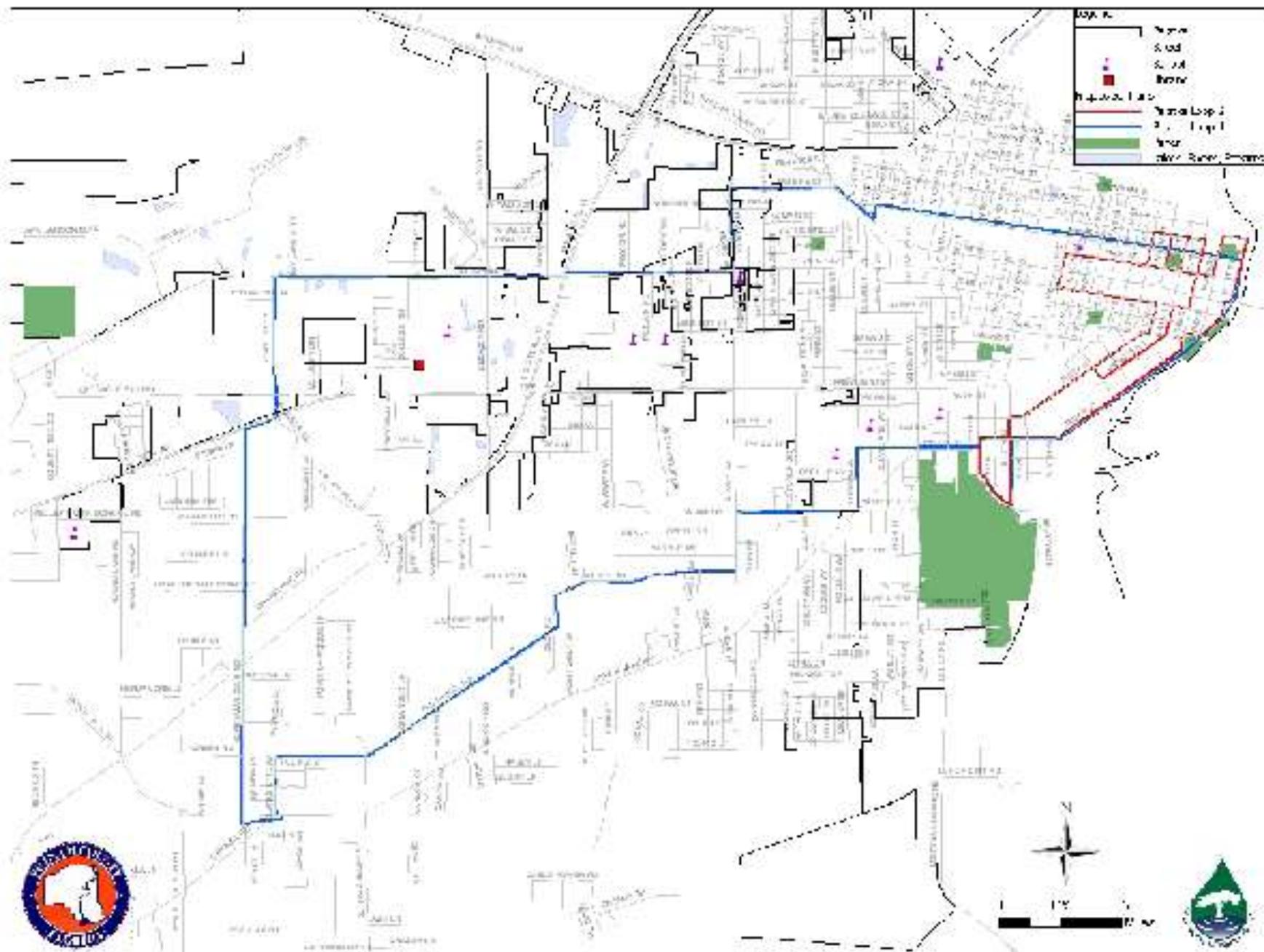
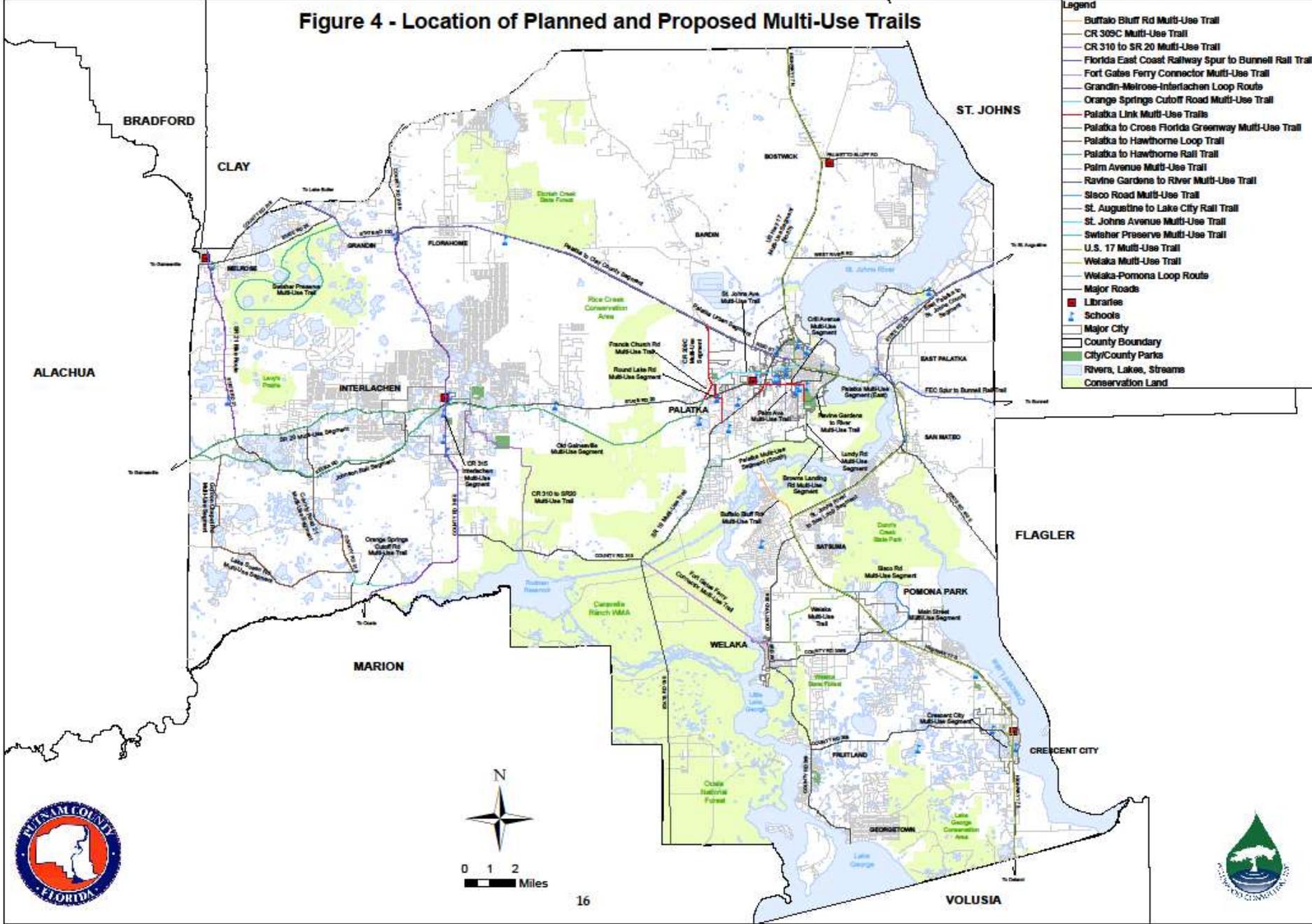


Figure 4 - Location of Planned and Proposed Multi-Use Trails



- Legend**
- Buffalo Bluff Rd Multi-Use Trail
 - CR 305C Multi-Use Trail
 - CR 310 to SR 20 Multi-Use Trail
 - Florida East Coast Railway Spur to Bunnell Rail Trail
 - Fort Gates Ferry Connector Multi-Use Trail
 - Grandin-Meirose-Interlachen Loop Route
 - Orange Springs Cutoff Road Multi-Use Trail
 - Palatka Link Multi-Use Trails
 - Palatka to Cross Florida Greenway Multi-Use Trail
 - Palatka to Hawthorne Loop Trail
 - Palatka to Hawthorne Rail Trail
 - Palm Avenue Multi-Use Trail
 - Ravine Gardens to River Multi-Use Trail
 - Sisco Road Multi-Use Trail
 - St. Augustine to Lake City Rail Trail
 - St. Johns Avenue Multi-Use Trail
 - Swisher Preserve Multi-Use Trail
 - U.S. 17 Multi-Use Trail
 - Welaka Multi-Use Trail
 - Welaka-Pomona Loop Route
 - Major Roads
 - Libraries
 - Schools
 - Major City
 - County Boundary
 - City/County Parks
 - Rivers, Lakes, Streams
 - Conservation Land



Figure 5 - Location of Proposed Bike Routes

- Legend**
- CR 310 Bike Route
 - East River Bike Route
 - East SR 100 Bike Route
 - Grandin-Melrose-Interlachen Loop Route
 - South Putnam Bike Route
 - State Road 19 Bike Route
 - Welaka-Pomona Loop Route
 - West River Loop Route
 - Major Roads
 - Libraries
 - Schools
 - Major City
 - County Boundary
 - City/County Parks
 - Rivers, Lakes, Streams
 - Conservation Land

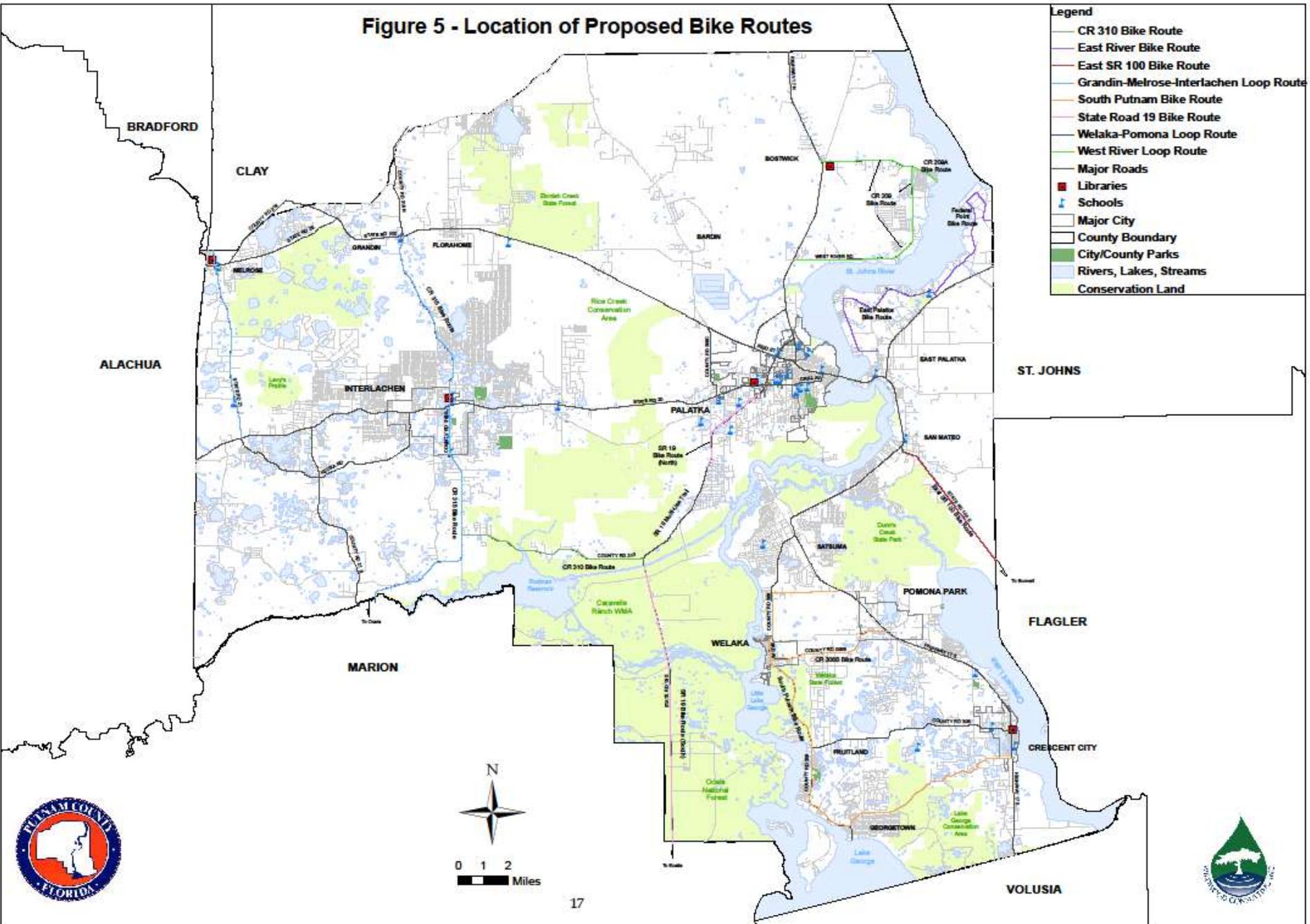


Figure 7 - Location of Proposed Equestrian and Hiking Trails

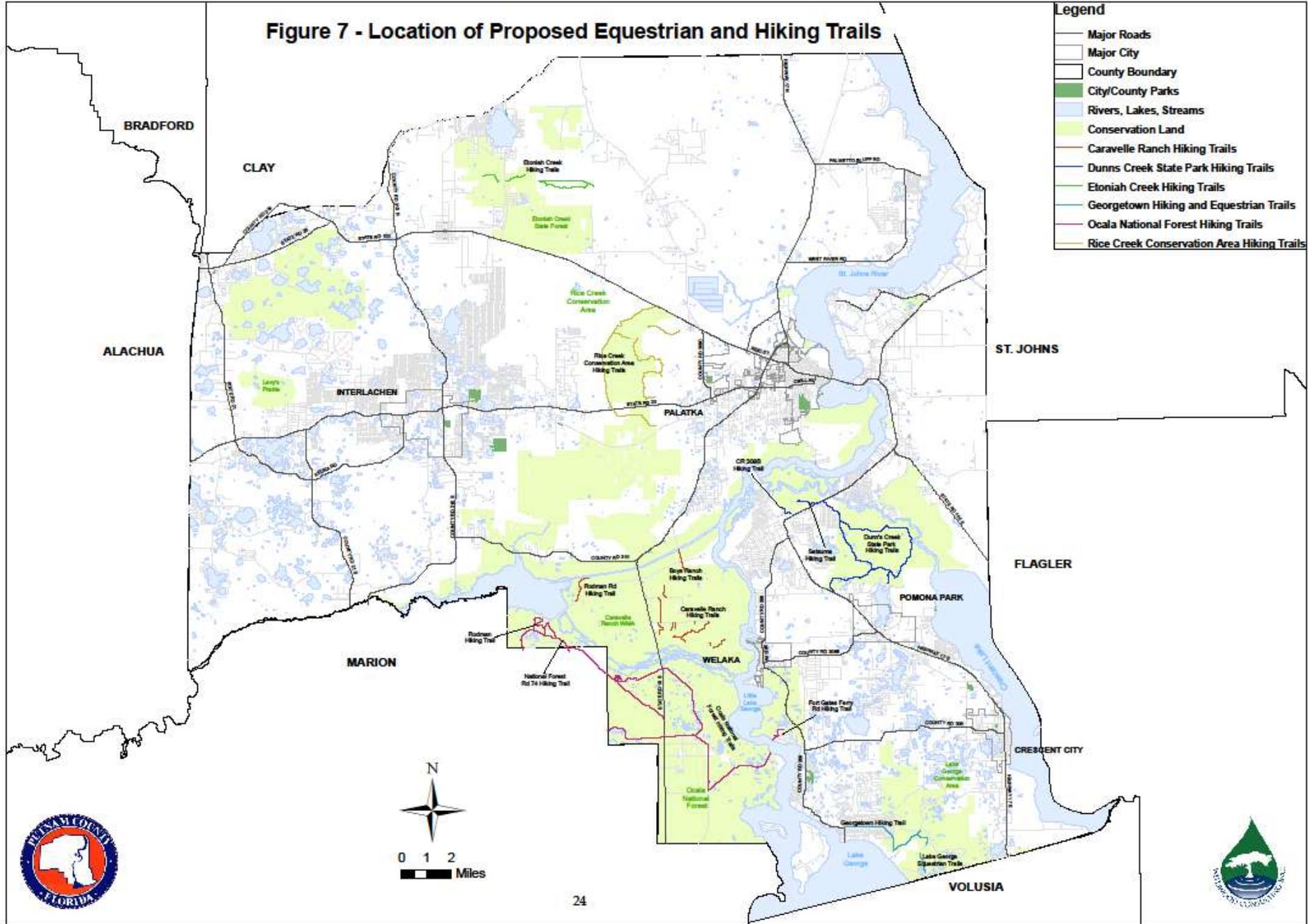
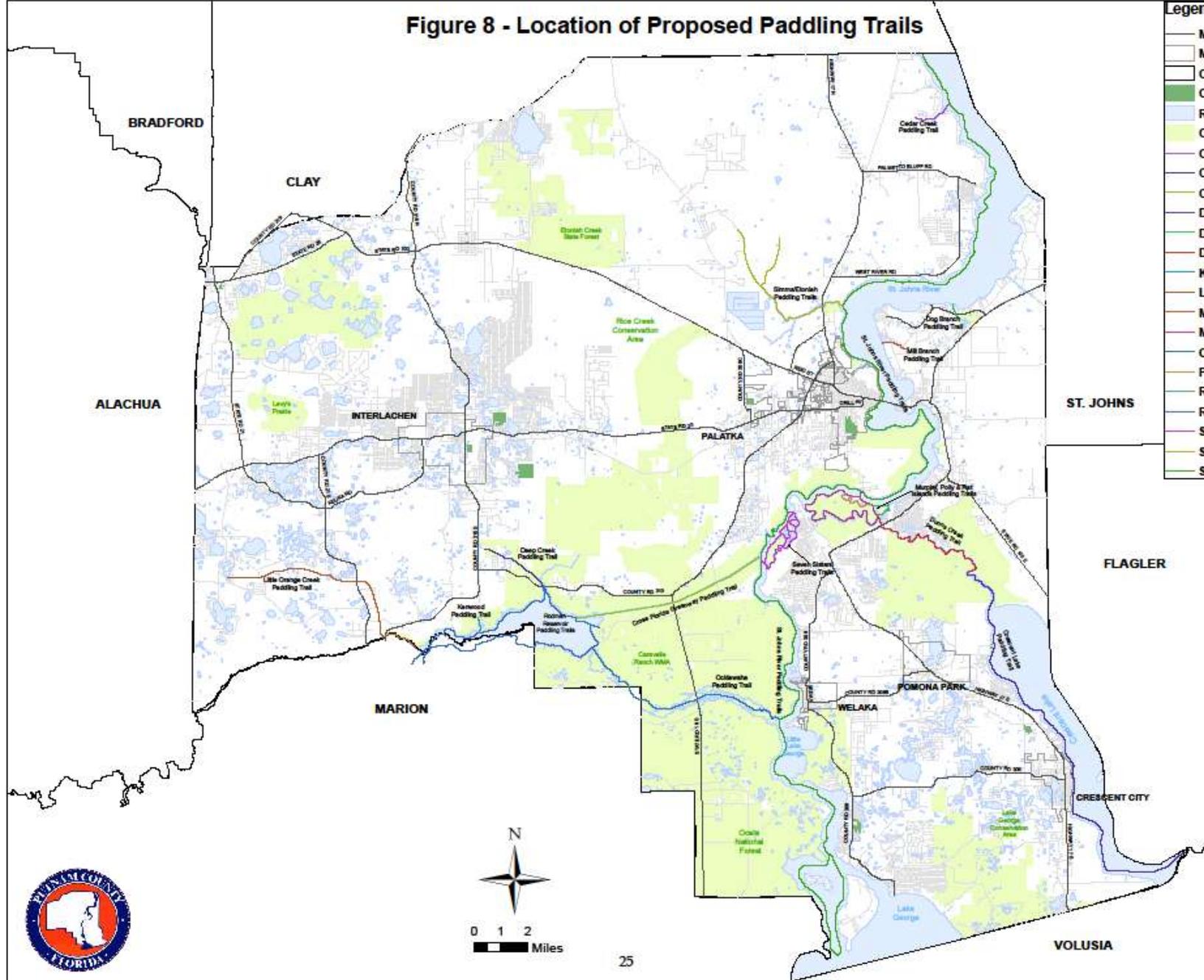


Figure 8 - Location of Proposed Paddling Trails

- Legend**
- Major Roads
 - Major City
 - County Boundary
 - City/County Parks
 - Rivers, Lakes, Streams
 - Conservation Land
 - Cedar Creek Paddling Trail
 - Crescent Lake Paddling Trail
 - Cross Florida Greenway Paddling Trail
 - Deep Creek Paddling Trail
 - Dog Branch Paddling Trail
 - Dunns Creek Paddling Trail
 - Kenwood Paddling Trail
 - Little Orange Creek Paddling Trail
 - Mill Branch Paddling Trail
 - Murphy Island Paddling Trail
 - Ocklawaha Paddling Trail
 - Polly Island Paddling Trail
 - Rat Island Paddling Trail
 - Rodman Reservoir Paddling Trails
 - Seven Sisters Paddling Trails
 - Simms/Etoniah Paddling Trails
 - St. Johns River Paddling Trails



Building Construction

- Encourage the local Construction Industry and Stakeholders to embrace the concept of **Sustainable Construction** in new construction, renovations and additions and maintenance through learning, education, promotion, implementation, evaluation and adjustments





SUSTAINABLE CONSTRUCTION

LEARNING. EDUCATING. PROMOTING. LIVE SMART

Sustainable Construction aims at reducing the environmental impact of a building over its entire lifetime, while optimizing its economic viability, and the comfort and safety of its occupants.

To Encourage the Local Construction Industry and Stakeholders to Embrace the Concept of Sustainable Construction in New Projects, Existing Renovations and Additions, and in the Maintenance of Existing Systems and Buildings through:

- Learning
- Educating
- Promoting
- Implementing
- Evaluating
- Adjusting

VISIONS & GOALS

STAKEHOLDERS

Commissioners
Building Officials
Plans Examiners
Inspectors
Electric Companies
Gas Utilities
Water / Sewer Utilities
Health Department
SJRWMD
DEP

Contractors
Architects
Engineers
Draft Persons
Homeowners
Business Owners
Landlords
Mortgage Brokers
Insurance Companies
Local Suppliers
PCBTA
and everyone else...



Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment.

- Acquire New Knowledge
- Enhance Skills
- Formulate Life-cycle Values & Gains
- Define Good Practices
- Change Behaviors

LEARNING

EDUCATING

Share the Knowledge



Convincing the End User

- Responsible Ownership
- Cost vs. Gains
- Resale Value
- Utility Savings
- Lower Operation Cost
- Mortgage Benefits
- Reduced Insurance Premiums
- Self-sufficiency
- Incentives / Rebates

PROMOTING GREEN CONCEPTS
IMPLEMENTING

Choose to Participate...

- Reduce – Reuse – Recycle
- Property Maintenance
- Indigenous Landscapes
- Conservation
- Buy Local
- Energy Star
- Water Star
- Incentives
- Advertising
- Web Site

We have and will continue to have the water, materials, and resources needed to protect human health and our environment, if we make smart choices.

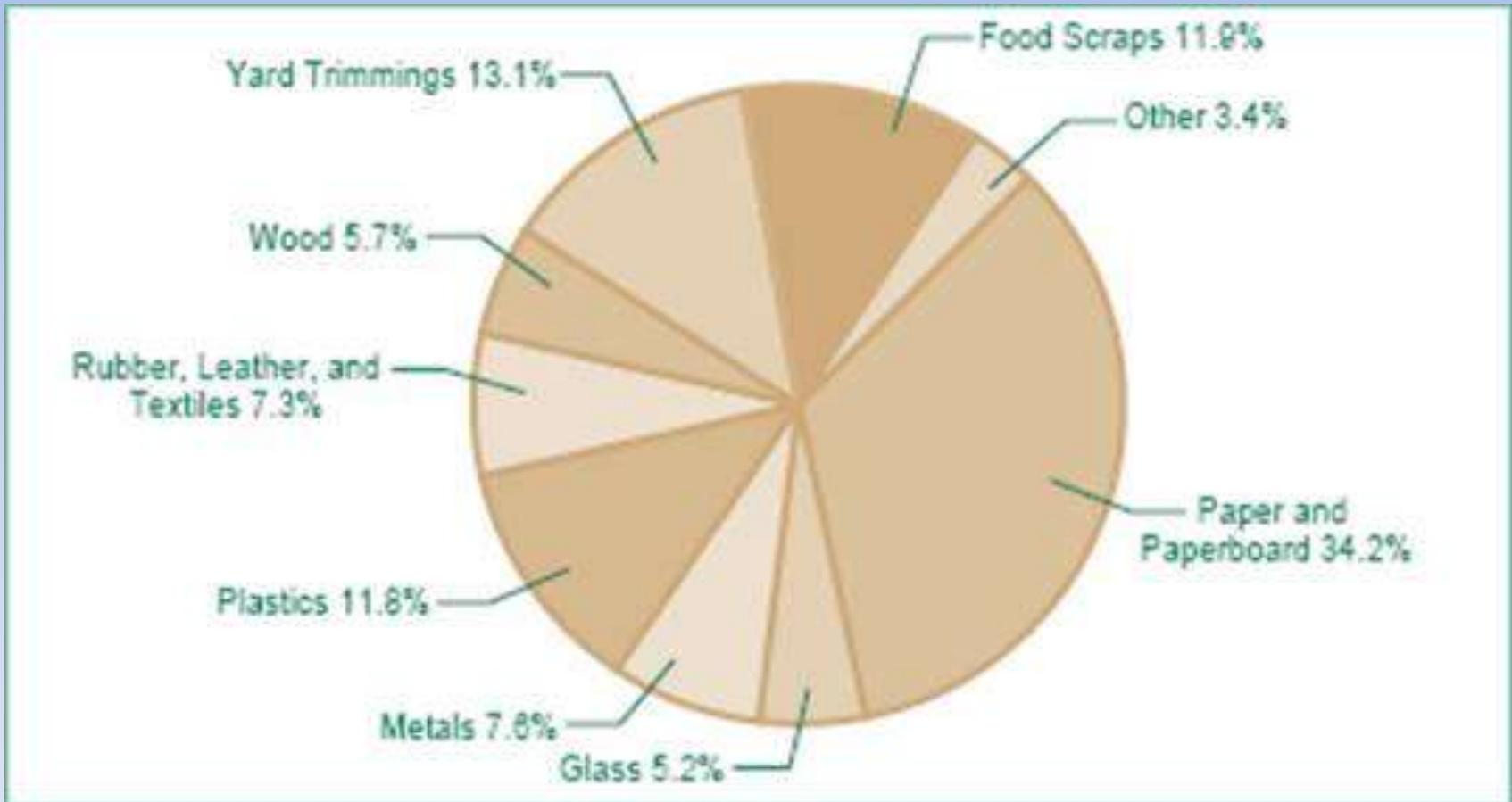


Waste & Recycling

- About 80% of what Americans throw away is recyclable, yet our recycling rate is only 28%.
- Plastic bags and other plastic garbage thrown into the ocean kill as many as 1,000,000 sea creatures a year!
- Average person throws away 4 pounds of garbage PER DAY.
- Paper is the most common item found in our trash.
 - Product packaging accounts for 1/3 of our trash.
 - Solid waste disposal is the third largest municipal government expense after police protection and education.
 - Recycling all of your home's waste newsprint, cardboard, glass and metal can reduce carbon dioxide emissions by 850 lbs. a year.



Composition of Municipal Solid Waste



MSW Recycling Rates 1960 - 2005



Aluminum Can Facts

- **Tossing away an aluminum can wastes as much energy as pouring out half of that can's volume of gasoline.**
- Making new aluminum cans from used cans takes 95 percent less energy and 20 recycled cans can be made with the energy needed to produce one can using virgin ore.
- Recycling one aluminum can saves enough energy to keep a 100-watt bulb burning for almost four hours or run your television for three hours.
- Last year 54 billion cans were recycled saving energy equivalent to 15 million barrels of crude oil – America's entire gas consumption for one day.



Glass Facts

- In the U.S. today, 34% of all glass containers are recycled.
- **Recycling one glass bottle saves enough electricity to light a 100-watt bulb for four hours.**
- Recycling glass reduces air pollution by 14-20% and saves 25-32% more energy than making glass from virgin raw materials.
- Glass containers save 9 gallons of fuel (oil) for every ton of glass recycled.



Plastic Facts

- Plastics make up more than 12 percent of our trash.
- Only around 27% of plastic bottles are recycled.
- **Americans use 2,500,000 plastic bottles every hour and most are not recycled.**
- Recycling plastic saves twice as much energy than incinerating it
- Recycling 1 ton of plastic can save over 7 cubic yards of landfill space.



Steel Facts

- Recycling tin and steel cans saves between 60-74% of the energy used to produce them from raw materials.
- **1 ton of recycled steel saves the energy equivalent of 3.6 barrels of oil, and 1.49 tons of iron ore over the production of new steel.**
- Each year steel recycling saves the energy equivalent to electrically power about 1/5th of the households in the U.S. (or about 18 million homes) for 1 year.



Paper Facts

- **Recycling one ton of paper saves 17 trees, two barrels of oil (enough to run the average car for 1,260 miles), 4,100 kilowatts of energy (enough power for the average home for six months), 3.2 cubic yards of landfill space, and 60 pounds of pollution.**
- The 17 trees saved by recycling one ton of paper can absorb a total of 250 pounds of carbon dioxide out of the air each year.
- Around 1 billion trees worth of paper are thrown away every year in the U.S.

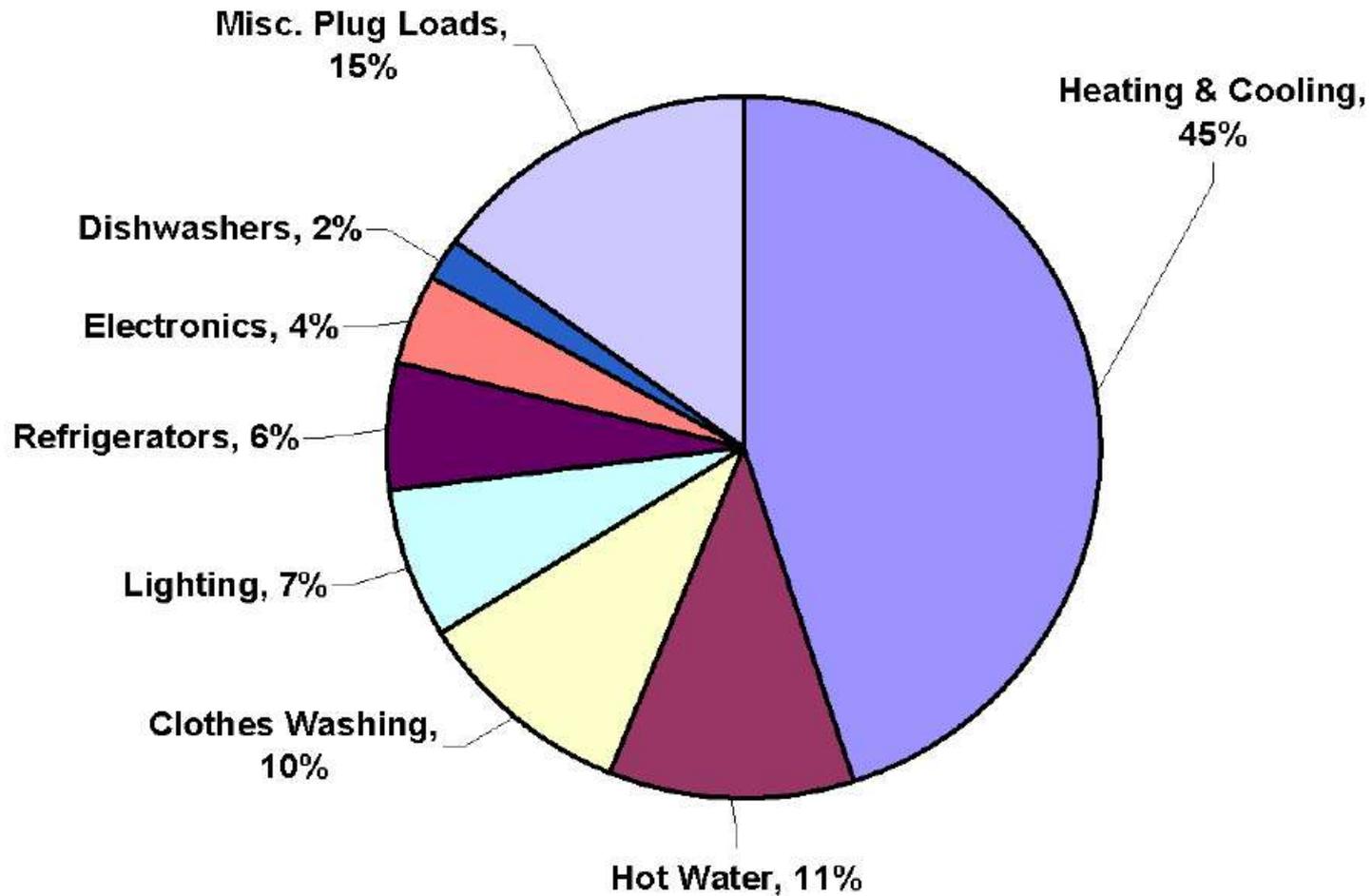


Energy Management

- Diversification of energy products and sources as well as supply and distribution routes will ensure adequacy and dependability of fuel supply to most consumers over the next several generations.
 - Utilize Energy Audits
 - Utilize Creative technology and Consumer incentives



The Average US Home

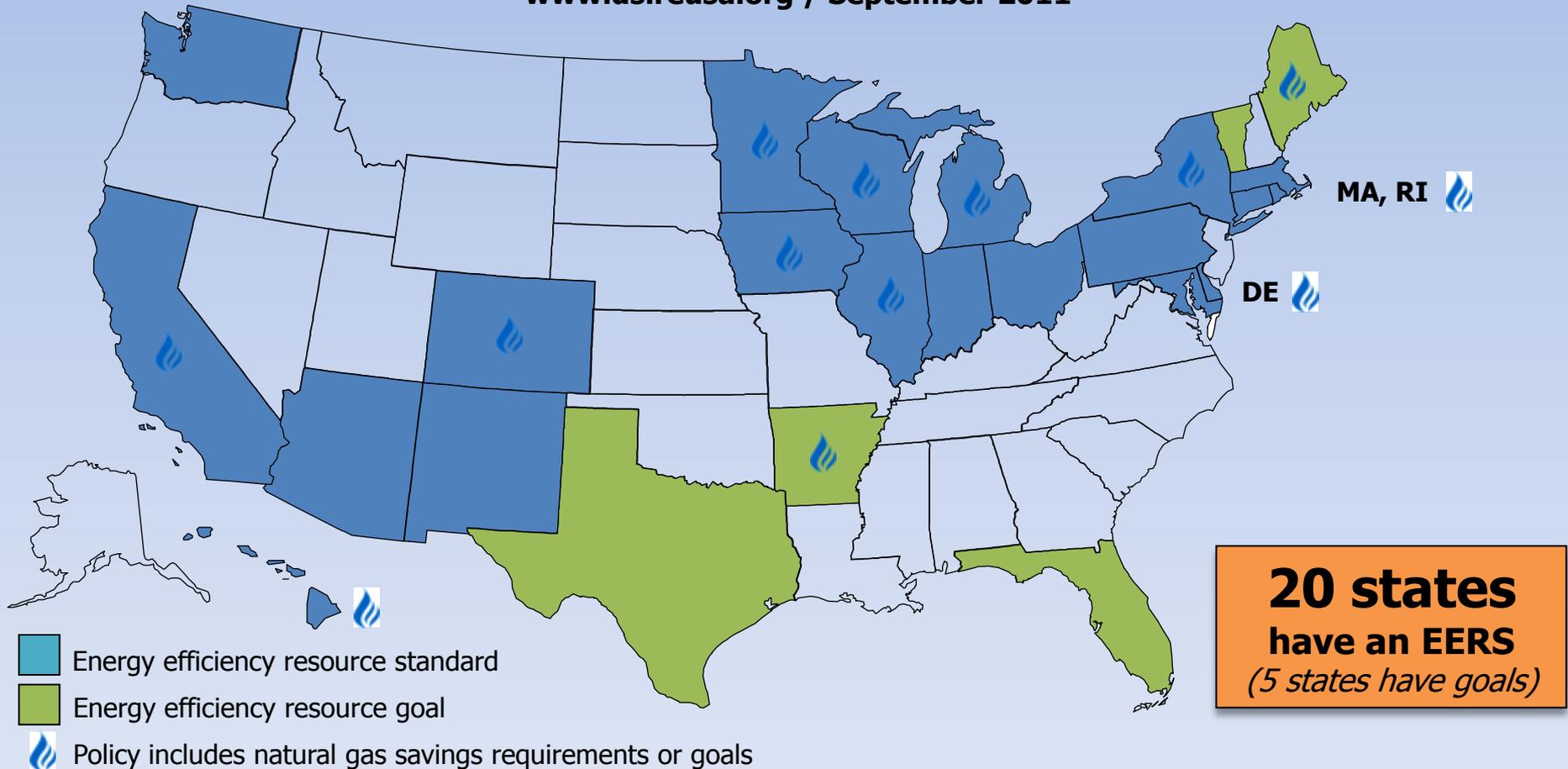


- About 2/3 of all buildings that will be in use in 2050 are already built
- And 2/3 of those were built before energy codes



Energy Efficiency Resource Standards

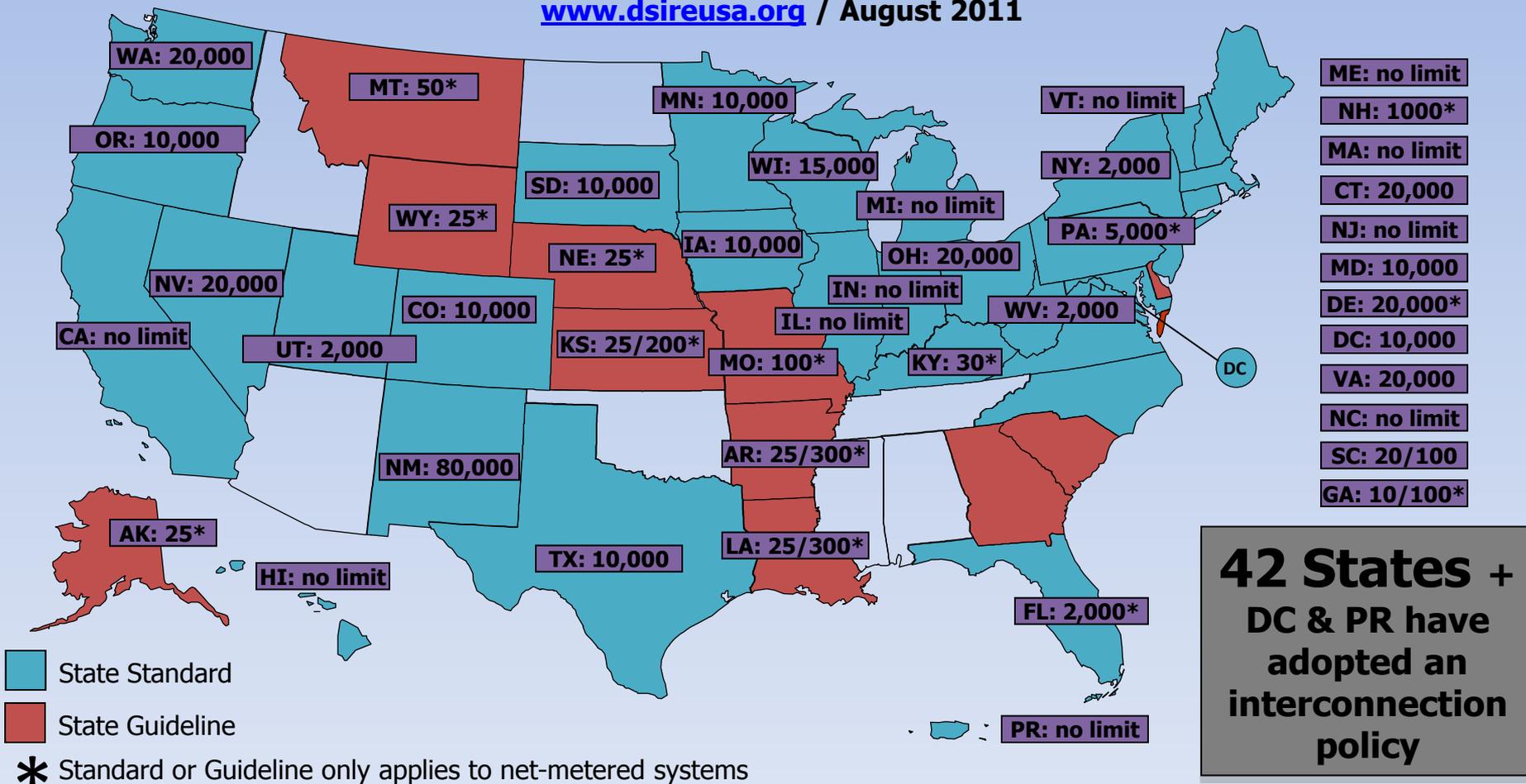
www.dsireusa.org / September 2011



Note: See following slide for a brief summary of policy details. For more details on EERS policies, see www.dsireusa.org and www.aceee.org/topics/eers.

Interconnection Policies

www.dsireusa.org / August 2011



42 States + DC & PR have adopted an interconnection policy

Notes: Numbers indicate system capacity limit in kW. Some state limits vary by customer type (e.g., residential/non-residential). "No limit" means that there is no stated maximum size for individual systems. Other limits may apply. Generally, state interconnection standards apply only to investor-owned utilities.

Strategic Energy Planning Beyond EE/RE

Consider: Transit-Oriented Development as Energy Efficiency Policy



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