TARC e-Learning: Leveraging COG Programs and Funding to Support Energy Management for Your Members

North Central Texas Council of Governments

January 22, 2020

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We all have something in common…

Common Programs for Texas COGs

Community and Economic Development

Engaging in local partnerships to keep Texas communities vibrant.

Read more

Criminal Justice

Helping local communities and first responders coordinate resources and training.

Read more

More Topics

Emergency Communications

Strengthening regional 9-1-1 systems to keep Texans safe.

Read more

Emergency Preparedness

Assisting regions and their communities with all-hazards planning, mitigation, response and recovery efforts.

Read more

More Topics

Financial Transparency and Reports

Read more

Health and Human Services

Ensuring local access to community support and services for older adults, people with disabilities and caregivers.

Read more

More Topics

Municipal Solid Waste

Utilizing regional goals and waste diversion resources to coordinate projects that benefit health and safety.

Read more

And many more for some COG's…

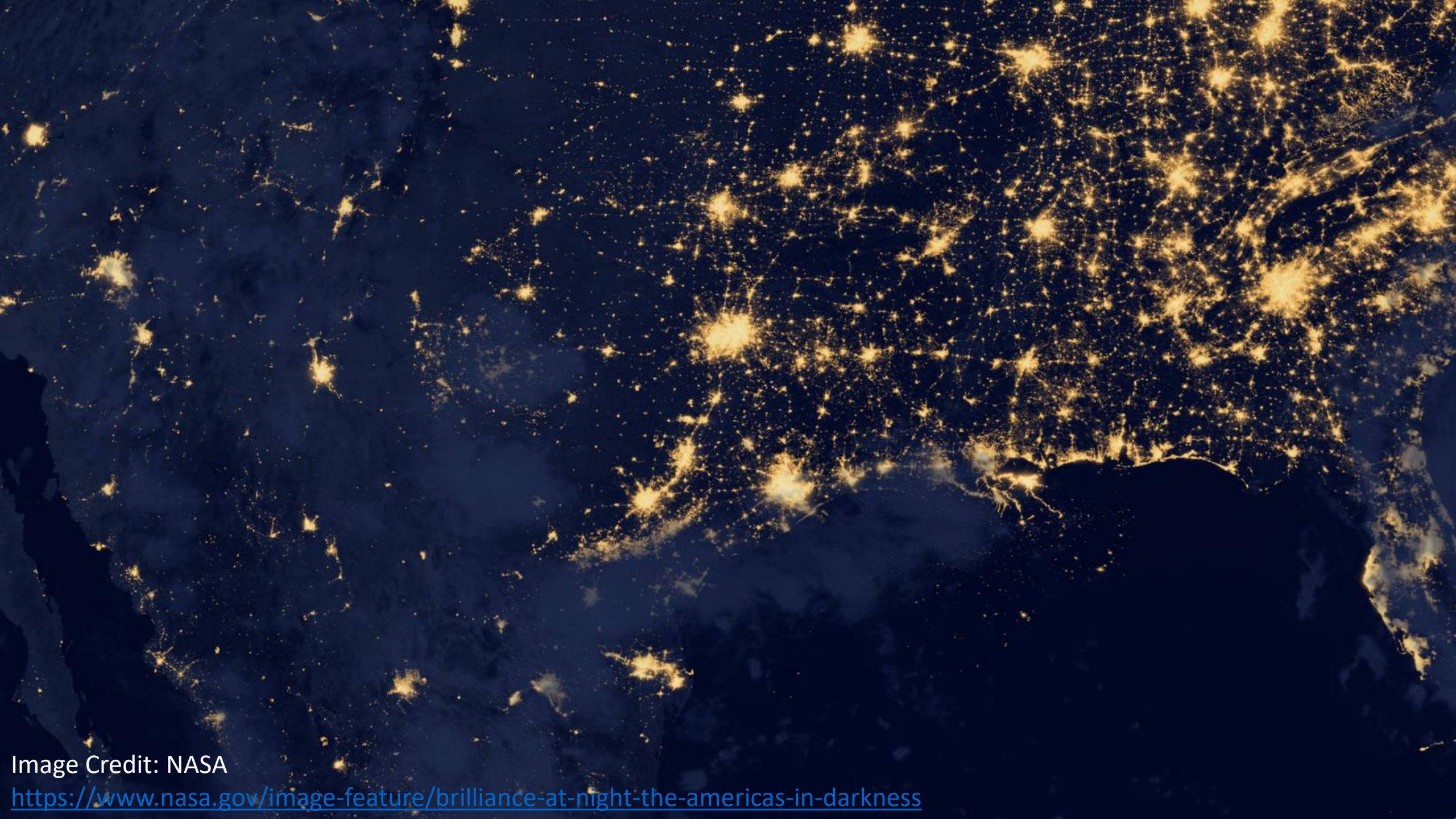
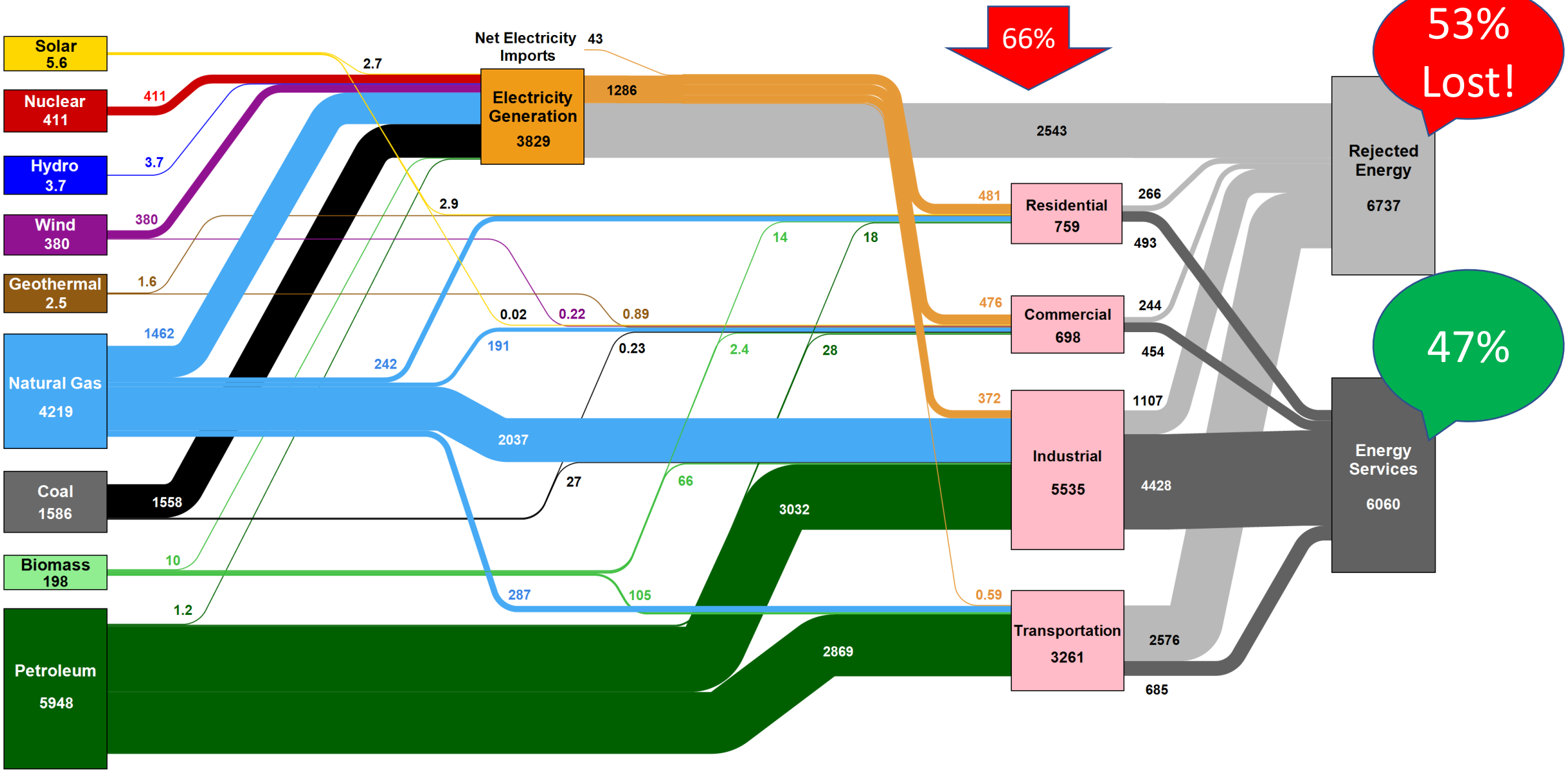


Image Credit: NASA
https://www.nasa.gov/image-feature/brilliance-at-night-the-americas-in-darkness

Texas Energy Consumption in 2014: ~ 12797 Trillion BTU

Lawrence Livermore National Laboratory



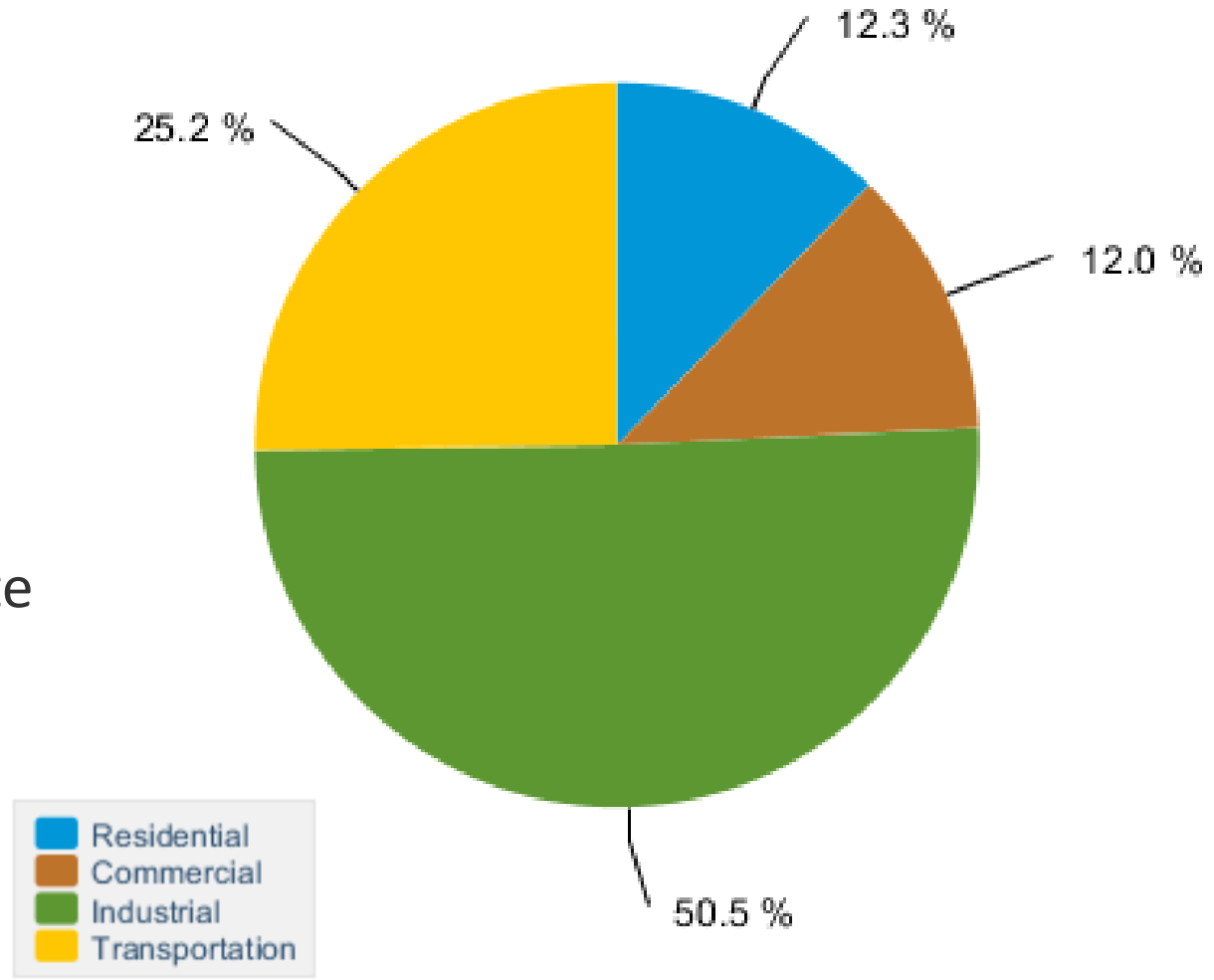
Source: LLNL August, 2016. Data is based on DOE/EIA SEDS (2014). If this information or a reproduction of it is used, credit must be given to the Lawrence Livermore National Laboratory and the Department of Energy, under whose auspices the work was performed. Distributed electricity represents only retail electricity sales and does not include self-generation. EIA reports consumption of renewable resources (i.e., hydro, wind, geothermal and solar) for electricity in BTU-equivalent values by assuming a typical fossil fuel plant heat rate. The efficiency of electricity production is calculated as the total retail electricity delivered divided by the primary energy input into electricity generation. End use efficiency is estimated as 65% for the residential sector, 65% for the commercial sector, 80% for the industrial sector, and 21% for the transportation sector. Totals may not equal sum of components due to independent Rounding. LLNL-MI-410527

Texas Energy Consumption by End-User Sector, 2017

- Texas produces more electricity than any other state

- Texas leads the nation in wind-powered generation and produced one-fourth of all the U.S. wind powered electricity in 2017

- Texas is the largest energy-producing state and the largest energy-consuming state in the nation



Source: Energy Information Administration, State Energy Data System

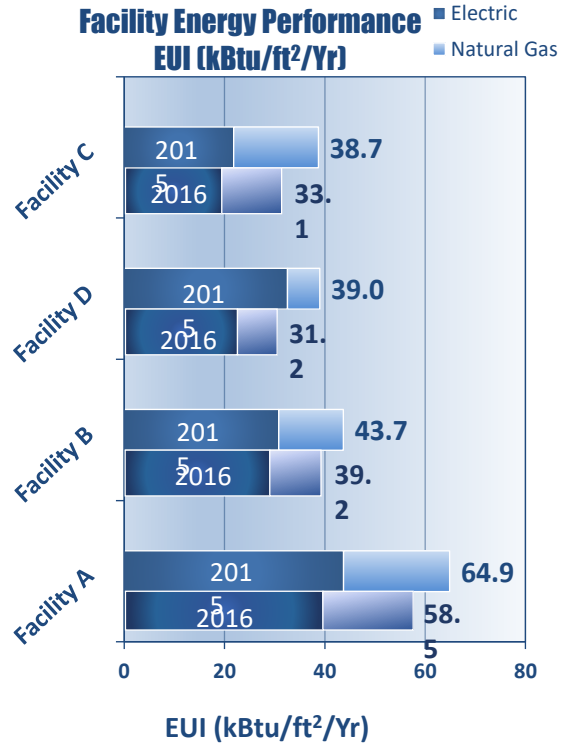
Source: Energy Information Agency
Last Updated: February 21, 2019

Importance of Energy Management

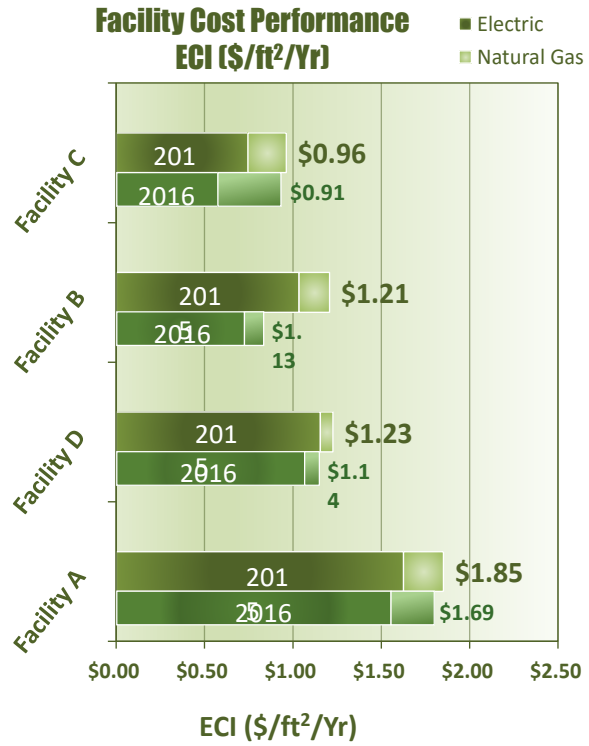
Why is NCTCOG focused on Energy Management?

- Improve Air Quality
- Increase Local Energy Reliability
- Facilitate Local Government Efforts
- Provide Consistency Among Region
- Reduce Costs (for everyone)
- You Can't Manage What you Don't Measure
- Energy Management is Important to Our Members

Energy Utilization Index



Energy Cost Index



Source: Texas Energy Engineering Services, Inc., www.teesi.com

Threats – Heat
Tuesday, August 13, 2019

- Electricity demand hit an all-time high of 74,531 megawatts as people blasted their air conditioners on Monday afternoon and totaled 74,310 megawatts at 4:34 p.m. local time Tuesday, according to ERCOT.
- Temperatures peaked at 103 degrees.
- “Extreme heat across the ERCOT region will continue to result in high loads,” ERCOT said in a statement. “We may set another new record today.”

Bloomberg

Power blows past $9,000 cap in Texas as heat triggers emergency

Christopher Martin and Naureen S. Malik 8/13/2019

Electricity prices briefly surged past a $9,000 a megawatt-hour price cap in Texas as extreme heat sent power demand skyrocketing and forced the state’s grid operator to declare an emergency.

As temperatures in Dallas climbed to 103 degrees Fahrenheit (39 Celsius), the Electric Reliability Council of Texas issued an emergency alert, calling on all power plants to ramp up and asking customers to conserve. At one point on

BRIEF

ERCOT calls 2 energy emergencies in one week, 3rd in 5 years

Sources: https://www.utilitydive.com/news/ercot-calls-2nd-energy-emergency-this-week-3rd-in-5-years/561065/; https://www.msn.com/en-us/money/markets/power-blows-past-dollar9000-cap-in-texas-as-heat-triggers-emergency/ar-AAFL62t

Threats – Cyber Attacks

SECURITY

Experts assess damage after first cyberattack on U.S. grid

Blake Sobczak, E&E News reporter

Energywire: Monday, May 6, 2019

Reports of an unprecedented grid "cyber event" caused a stir last week in power sector and cybersecurity circles. Ian Muttoo/Flickr

Last week, the U.S. power sector marked a sober milestone: an anonymous Western utility became the first to report a malicious "cyber event" that disrupted grid operations.

The hack itself occurred two months ago, on March 5, when a "denial-of-service" attack disabled Cisco Adaptive Security Appliance devices ringing power grid control systems in Utah, Wyoming

Russians hacked into America's electric grid. Here's why securing it is hard.

April 11, 2018 6.44am EDT Updated July 24, 2018 12.47pm EDT

Hackers can interfere with everyday efforts to keep the lights on. pan denim/Shutterstock.com

Email
Twitter 21
Facebook 59
LinkedIn
Print

Hackers taking down the U.S. electricity grid may sound like a plot ripped from a Bruce Willis action movie, but the Department of Homeland Security has recently disclosed new details about the extent to which Russia has infiltrated "critical infrastructure" like American power plants, water facilities and gas pipelines.

This hacking is similar to the 2015 and 2016 attacks on Ukraine's grid. While DHS has raised the number of the Russian utility-hacking

Author

Theodore J. Kury
Director of Energy Studies, University of Florida

Disclosure statement

Theodore Kury directs of Energy Studies at the University of Florida's Public Utility Research

Sources: https://theconversation.com/russians-hacked-into-americas-electric-grid-heres-why-securing-it-is-hard-94279; https://www.eenews.net/stories/1060281821

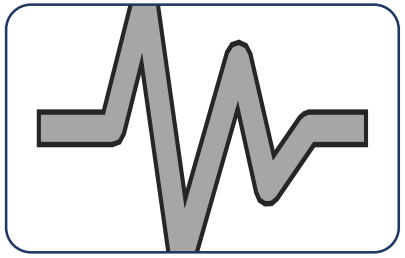
Benefits of Reducing Energy Consumption

Financial

- Energy Star certified office buildings cost $0.50 less per square foot to operate than their peers**
- For every $1 invested in energy efficiency, avoids $2 spent on the energy supply
- Resulting energy savings can increase available capital

Environmental

- Reduce emissions and improve indoor and outdoor air quality
- Smooth out energy demand by reducing peak load demand and facilitating renewable sources onto the grid
- 1 CFL bulb in every American house = emissions reductions equivalent to taking 800,000 cars off the road*



Health

- Reducing energy consumption decreases the need to burn fossil fuels to generate electricity, resulting in huge health benefits. This is because pollutants from fossil fuel combustion contribute to four of the leading causes of death in the U.S. (cancer, chronic lower respiratory diseases, heart disease and stroke)

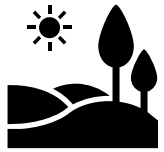
Sources: http://c40-production-images.s3.amazonaws.com/good_practice_briefings/images/8_C40_GPG_MBE.original.pdf?1456789018; https://www.altenergymag.com/article/2015/04/retrofitting-buildings-to-improve-energy-efficiency/19349

Supporting Reduction of Energy Consumption in Your Region

What services can COG/RPC offer?

Encourage Adoption of Latest Building Codes

Encourage Members to Consider Energy in Emergency Preparedness and Recovery Activities



Consider Underutilized Land in City/County/Region

SECO
State Energy Conservation Office

Encourage Cities to Complete SECO Local Government Energy Report

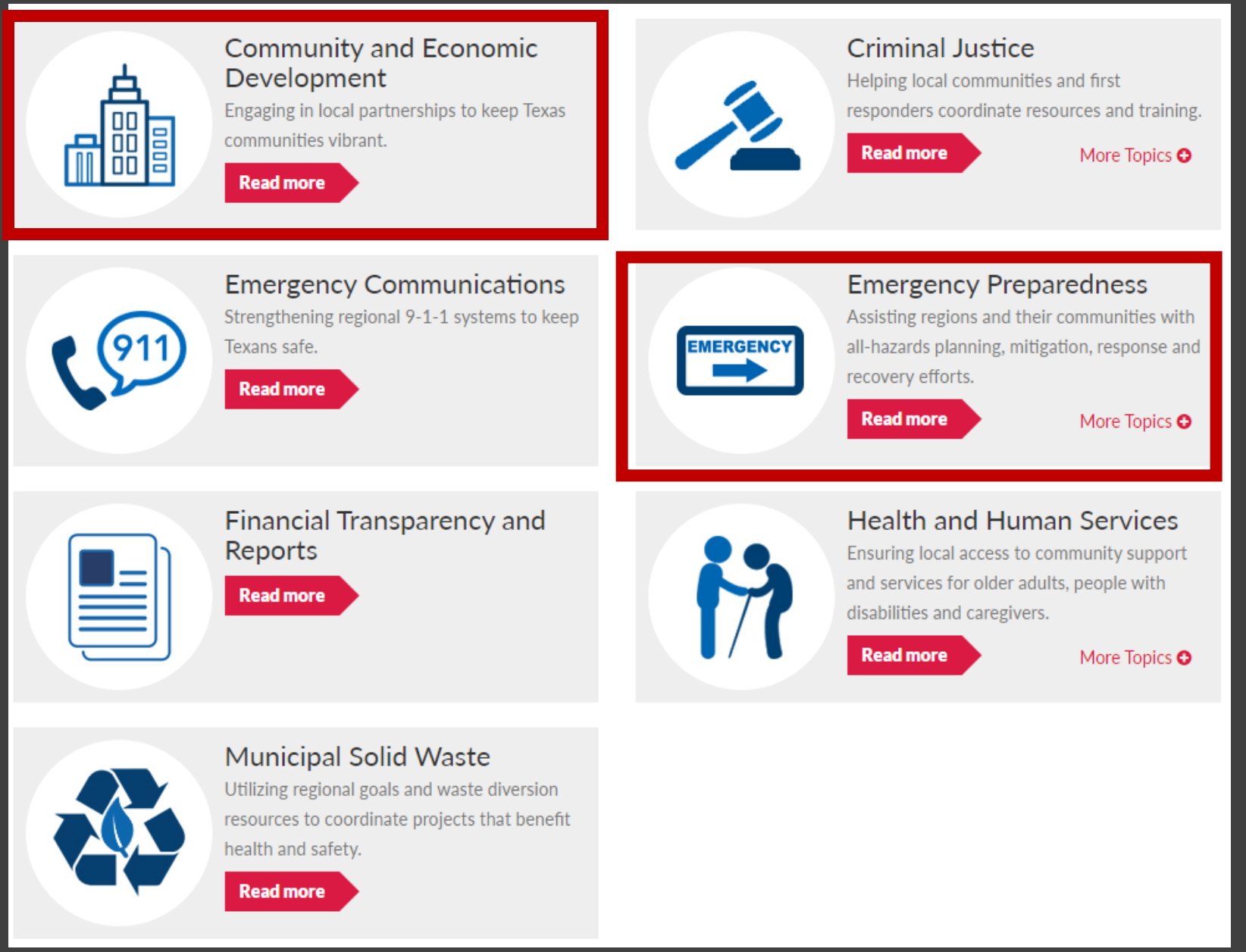
TEXAS PACE AUTHORITY

Encourage Cities to Adopt Texas - Property Assessed Clean Energy (PACE) Program

North Central Texas Council of Governments

Utilize NCTCOG Resources and Partner Organizations to Improve Energy Conservation

Encourage Adoption of Latest Building Codes



Why Energy Codes Matter

In the U.S. **buildings** use..

40% of total energy

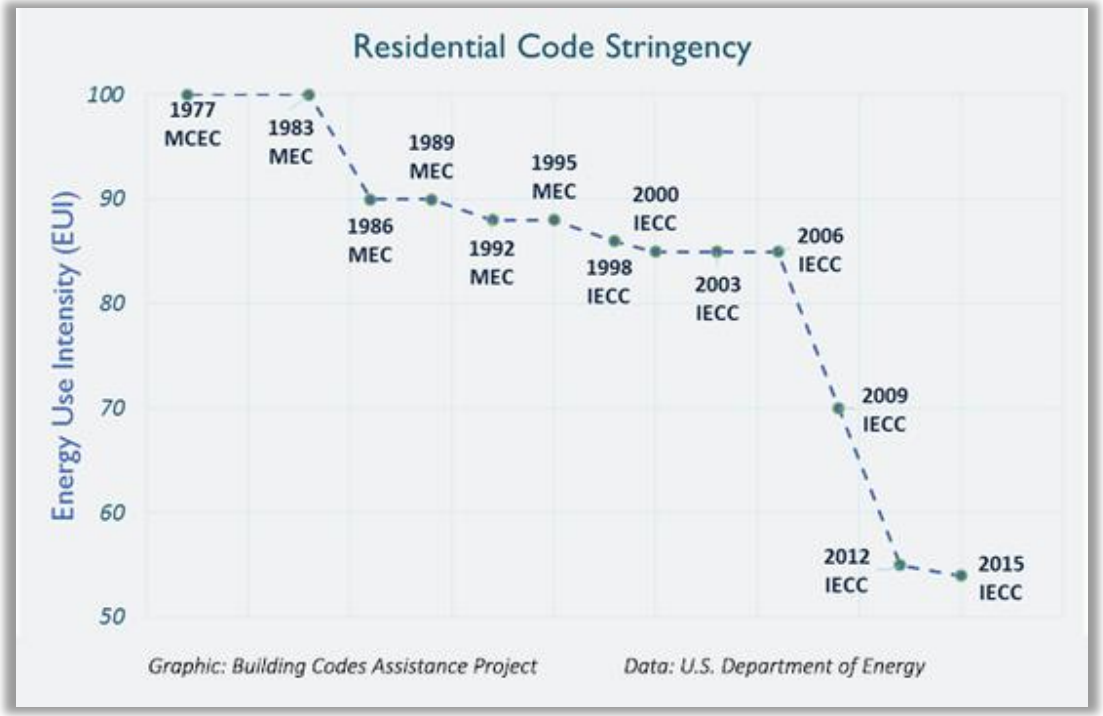
70% of total electricity

And account for

40% of emissions

Building Energy Codes Matter because they…

- ✓ Reduce need for power plants, transmission lines, and pipelines = slows rate increases
- ✓ Reduce Pollution and Increase Reliability
- ✓ Make a Cost-Effective Investment
- ✓ Improve Long-term Sustainability
- ✓ Provide Quality, Comfort, and Health
- ✓ Save on Insurance Premiums



Source: http://bcapcodes.org/getting-started/why-energy-codes-matter/eepartnership.org/brocodes/

Existing State-Wide Energy Codes

Texas law currently requires the following state energy codes for new buildings or significant upgrades to existing buildings.

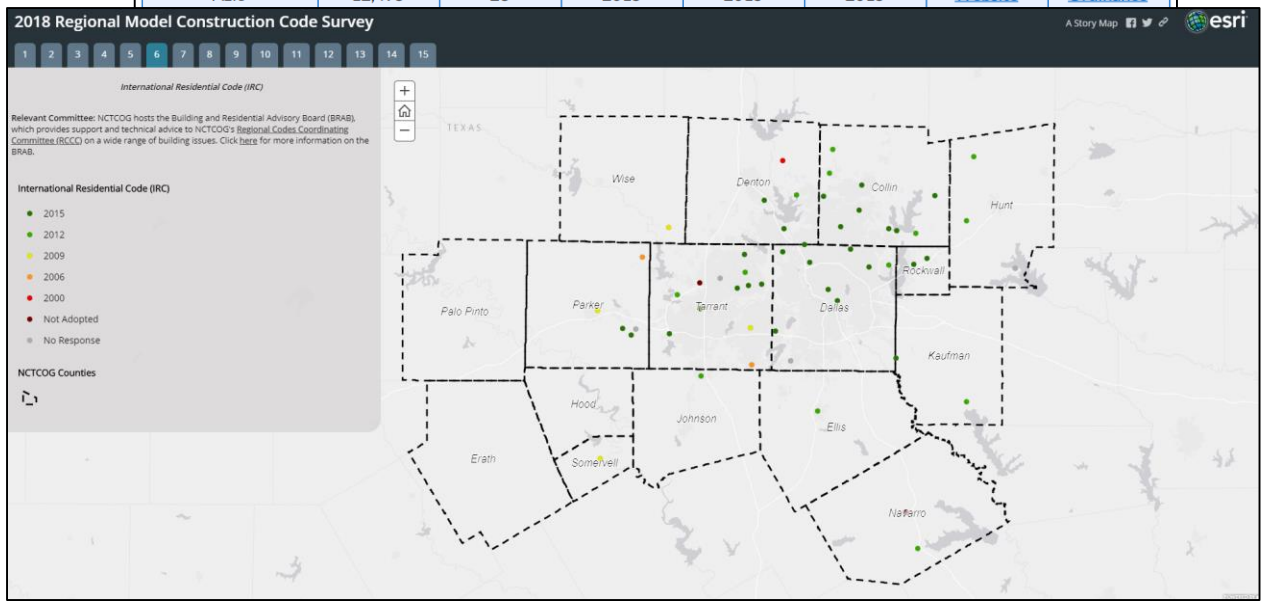
- Residential (Single Family Residences and Duplexes) – the 2015 IRC, Chapter 11.
- Commercial and Residential (Excluding Single-Family Residences) – the 2015 IECC
- State-Funded Residential Buildings – the 2015 IECC
- State-Funded Commercial Buildings – the ASHRAE 90.1 – 2013

Cities Adopted Code List-Current

SPEER encourages all cities in Texas to provide public access to their local Building Energy Codes online. We have pulled the following information from the source links provided, but please let us know of any updates. The individual local amendments have not been reviewed for equivalence to the published code. Cities included in this list all have adopted IECC 2012 or later and issued building permits in 2017.

Last Updated 9/9/19

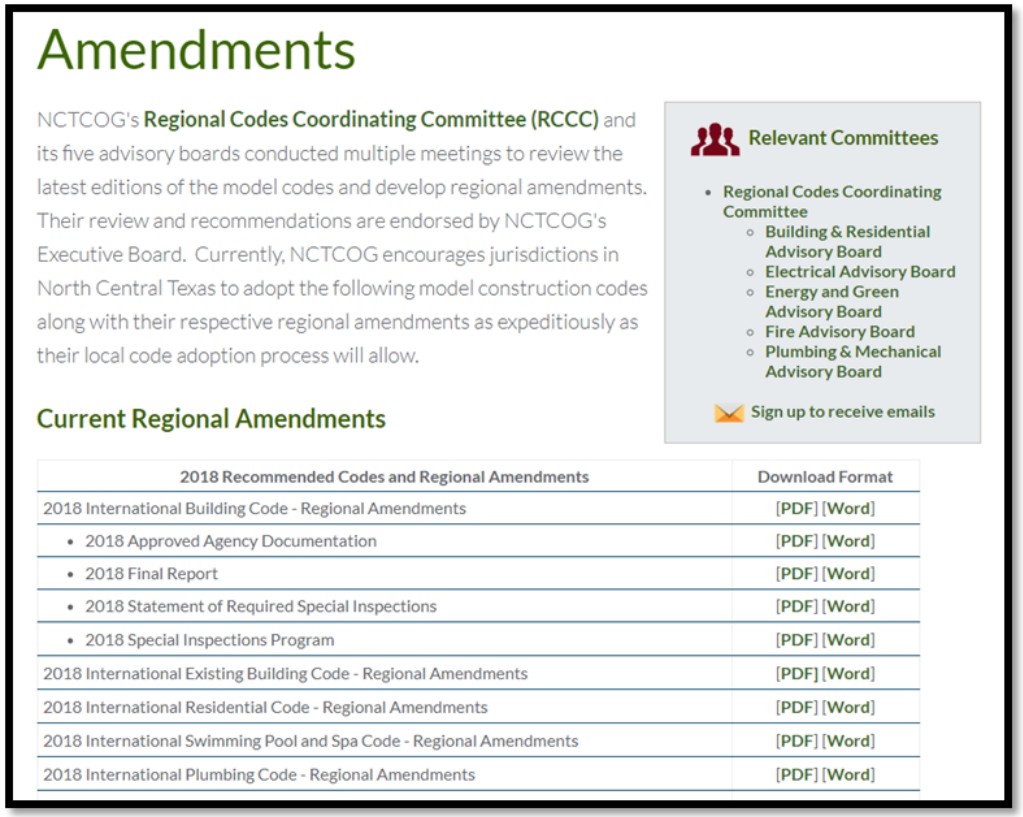
City	2017 Population	2017 Permits 1&2	IBC	IRC	IECC	Website Link	Ordinance Link
Abilene	121,885	220	2012	2012	2012	Website	Ordinance
Addison	15,458	1	2012	2012	2012	Website	Ordinance
Alamo	19,679	55	2012	2012	2015	Website	Ordinance
Alamo Heights	8,413	17	2015	2015	2015	Website	Ordinance
Aledo	4,232	22	2015	2015	2015	Website	Ordinance
Allen	100,685	814	2015	2015	2015	Website	Ordinance
Alton	17,278	54	2015	2015	2015	Website	Ordinance
Alvarado	4,124	20	2012	2012	2012	Website	Ordinance
Alvin	26,474	104	2009	2009	2015	Website	Ordinance
Amarillo	199,826	579	2015	2015	2015	Website	Ordinance
Anahuac	2,376	7	2012	2012	2012	Website	Ordinance
Angleton	19,544	35	2012	2012	2012	Website	Ordinance
Aransas Pass	8,265	50	2012	2012	2012	Website	Ordinance
Argyle	4,100	42	2012	2012	2012	Website	Ordinance
Arlington	396,394	1464	2015	2015	2015	Website	Ordinance
Aubrey	3,391	27	2015	2015	2015	Website	Ordinance
Austin	950,715	2966	2015	2015	2015	Website	Ordinance
Azle	12,495	28	2015	2015	2015	Website	Ordinance



Sources: https://eepartnership.org/btocodes/; https://www.nctcog.org/envir/regional-building-codes/code-adoption-surveys; https://eepartnership.org/wp-content/uploads/2019/09/Adopted-Codes-by-City-Current-Code.pdf

Energy and Building Code Resources

NCTCOG's Recommended Codes and Regional Amendments



Amendments

NCTCOG's **Regional Codes Coordinating Committee (RCCC)** and its five advisory boards conducted multiple meetings to review the latest editions of the model codes and develop regional amendments. Their review and recommendations are endorsed by NCTCOG's Executive Board. Currently, NCTCOG encourages jurisdictions in North Central Texas to adopt the following model construction codes along with their respective regional amendments as expeditiously as their local code adoption process will allow.

Relevant Committees

- Regional Codes Coordinating Committee
  - Building & Residential Advisory Board
  - Electrical Advisory Board
  - Energy and Green Advisory Board
  - Fire Advisory Board
  - Plumbing & Mechanical Advisory Board

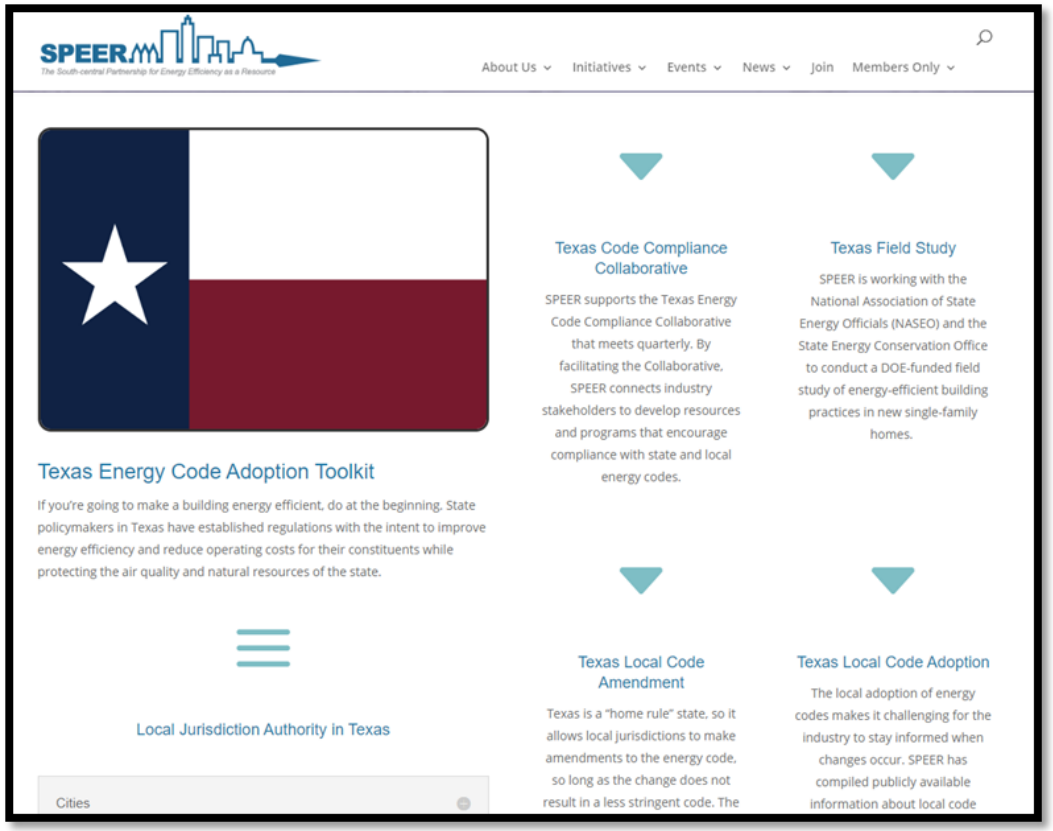
Sign up to receive emails

Current Regional Amendments

2018 Recommended Codes and Regional Amendments	Download Format
2018 International Building Code - Regional Amendments	[PDF] [Word]
• 2018 Approved Agency Documentation	[PDF] [Word]
• 2018 Final Report	[PDF] [Word]
• 2018 Statement of Required Special Inspections	[PDF] [Word]
• 2018 Special Inspections Program	[PDF] [Word]
2018 International Existing Building Code - Regional Amendments	[PDF] [Word]
2018 International Residential Code - Regional Amendments	[PDF] [Word]
2018 International Swimming Pool and Spa Code - Regional Amendments	[PDF] [Word]
2018 International Plumbing Code - Regional Amendments	[PDF] [Word]

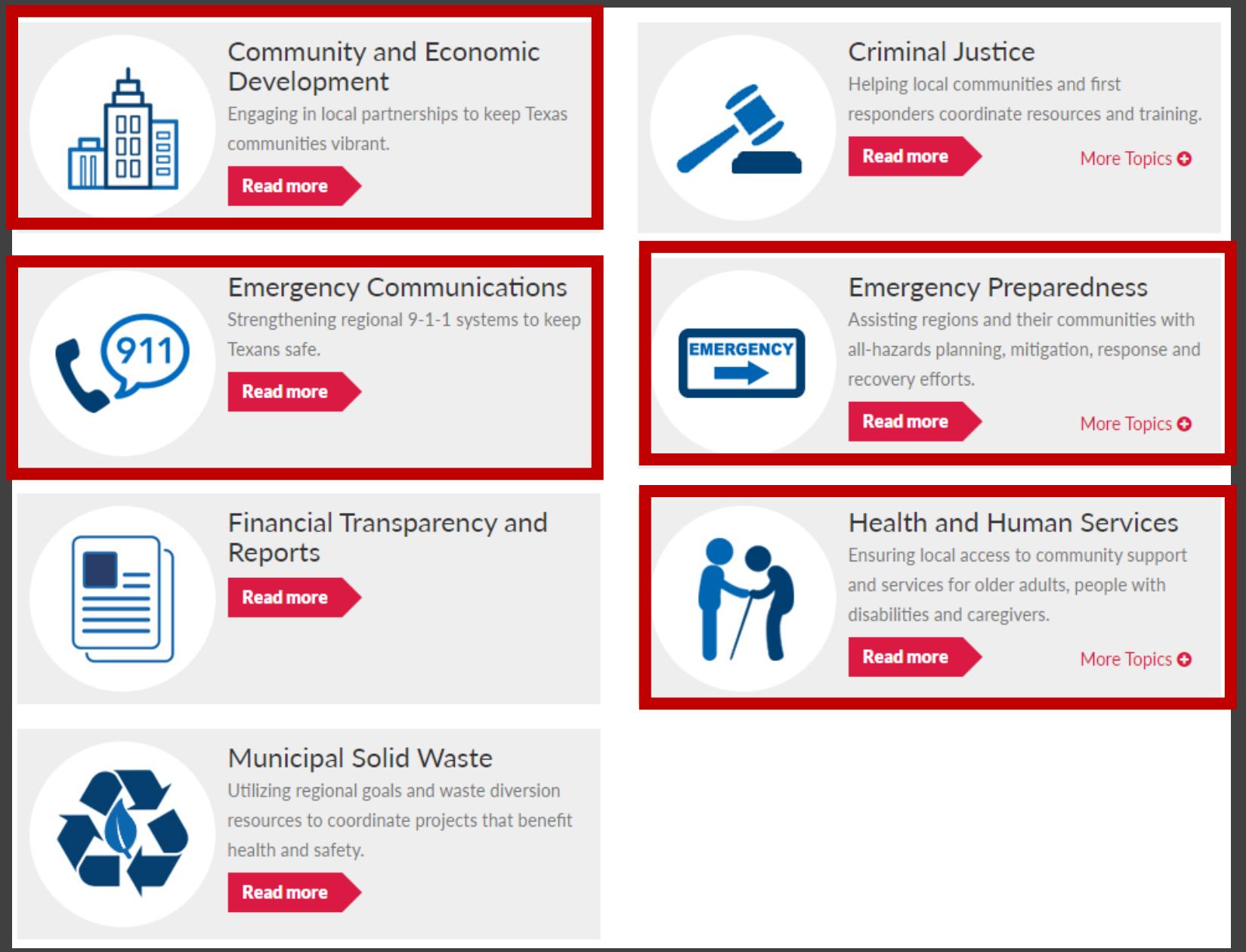
https://www.nctcog.org/envir/regional-building-codes/amendments

SPEER Texas Energy Code Adoption Toolkit



https://eepartnership.org/btocodes/ **and**
https://eepartnership.org/program-areas/bto/

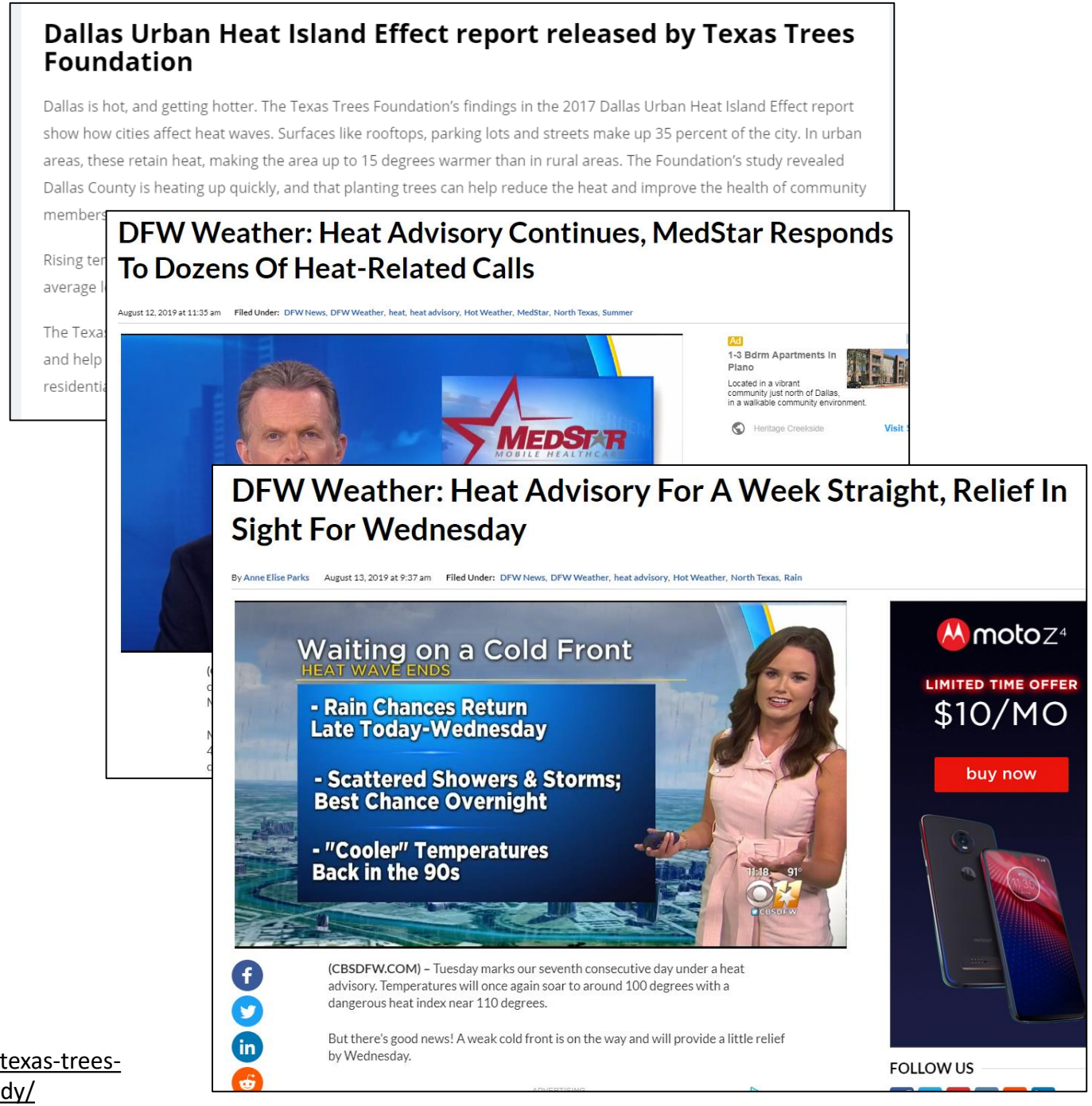
Encourage Members to Consider Energy in Emergency Preparedness and Recovery Activities



Threats - Heat
Urban Heat Island Effect

"The ramifications of urban heat adversely affect public health, longevity of infrastructure, public opinion, and our economy. With rising temperatures come higher costs for energy and a threat to our energy supply."

- Dallas Urban Heat Island Mitigation Study Website



Dallas Urban Heat Island Effect report released by Texas Trees Foundation

Dallas is hot, and getting hotter. The Texas Trees Foundation's findings in the 2017 Dallas Urban Heat Island Effect report show how cities affect heat waves. Surfaces like rooftops, parking lots and streets make up 35 percent of the city. In urban areas, these retain heat, making the area up to 15 degrees warmer than in rural areas. The Foundation's study revealed Dallas County is heating up quickly, and that planting trees can help reduce the heat and improve the health of community members

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DFW Weather: Heat Advisory Continues, MedStar Responds To Dozens Of Heat-Related Calls

August 12, 2019 at 11:35 am Filed Under: DFW News, DFW Weather, heat, heat advisory, Hot Weather, MedStar, North Texas, Summer

MEDSTAR MOBILE HEALTHCARE

Ad
1-3 Bdrm Apartments In Plano
Located in a vibrant community just north of Dallas, in a walkable community environment.
Heritage Creekside Visit

DFW Weather: Heat Advisory For A Week Straight, Relief In Sight For Wednesday

By Anne Elise Parks August 13, 2019 at 9:37 am Filed Under: DFW News, DFW Weather, heat advisory, Hot Weather, North Texas, Rain

Waiting on a Cold Front
HEAT WAVE ENDS
- Rain Chances Return Late Today-Wednesday
- Scattered Showers & Storms; Best Chance Overnight
- "Cooler" Temperatures Back in the 90s
11-18 91°
CBSDFW

(CBSDFW.COM) – Tuesday marks our seventh consecutive day under a heat advisory. Temperatures will once again soar to around 100 degrees with a dangerous heat index near 110 degrees.

But there's good news! A weak cold front is on the way and will provide a little relief by Wednesday.

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Sources: http://www.dallascitynews.net/dallas-urban-heat-island-effect-report-released-texas-trees-foundation; https://www.texastrees.org/projects/dallas-urban-heat-island-mitigation-study/

Planning a Resilient Power Sector

- The power system is at risk from an array of natural, technological, and man-made **threats** that can cause everything from power interruption to chronic undersupply.
  - **Natural:** long-term climatic changes, such as variations in precipitation patterns and changes in air and water temperatures, as well as severe weather events, such as storms, flooding, and storm surges
  - **Technological:** unpredicted equipment and infrastructure failures
  - **Human-caused:** Accidents and malicious events
- Impacts from these threats include, but are not limited to:
  - Potential fuel supply shortages for transportation and energy generation,
  - Physical infrastructure damage (dam failure, faulty system equipment, etc.)
  - Shifts in energy demand
  - Disruption of electricity supply to the end user
  - System operations and targeting power control systems, generators, or critical data infrastructure
- It is critical for policymakers, planners, and system operators to safeguard their systems and plan for and invest in the improved resilience of the power sector
- Planning for power sector resilience can happen at different geographic scales (local, national, or regional) and should be incorporated into existing power sector planning and policies to ensure effectiveness

Source: https://www.nrel.gov/docs/fy19osti/73618.pdf

Energy Efficiency's Role in Increasing Resilience

Energy efficiency can be a core strategy to reduce risks and enhance the resilience of the communities that energy systems serve.

Table ES1. Resilience benefits of energy efficiency

Benefit type	Energy efficiency outcome	Resilience benefit
Emergency response and recovery	Reduced electric demand	Increased reliability during times of stress on electric system and increased ability to respond to system emergencies
	Backup power supply from combined heat and power (CHP) and microgrids	Ability to maintain energy supply during emergency or disruption
	Efficient buildings that maintain temperatures	Residents can shelter in place as long as buildings' structural integrity is maintained.
	Multiple modes of transportation and efficient vehicles	Several travel options that can be used during evacuations and disruptions
Social and economic	Local economic resources may stay in the community	Stronger local economy that is less susceptible to hazards and disruptions
	Reduced exposure to energy price volatility	Economy is better positioned to manage energy price increases, and households and businesses are better able to plan for future.
	Reduced spending on energy	Ability to spend income on other needs, increasing disposable income (especially important for low-income families)
	Improved indoor air quality and emission of fewer local pollutants	Fewer public health stressors
Climate mitigation and adaptation	Reduced greenhouse gas emissions from power sector	Mitigation of climate change
	Cost-effective efficiency investments	More leeway to maximize investment in resilient redundancy measures, including adaptation measures

Table ES2. Energy efficiency measures that reduce vulnerability and increase capacity to cope

Energy efficiency measure	Resilience implications
CHP	Provides backup power, allows facilities receiving backup power to double as shelter for displaced residents, reduces overall net emissions, and potentially increases cost savings
Microgrids	May disconnect from grid during power outage, maintaining power supply; allows facilities receiving backup power to double as shelter for displaced residents; reduces overall net emissions; and potentially increases cost savings
Transportation alternatives	Multiple transportation modes that can be used during evacuations and everyday disruptions
District energy systems	Provides heating, cooling, and electricity using local energy sources and reduces peak power demand through thermal energy storage
Utility energy efficiency programs	Increases reliability and reduces utility costs
Energy-efficient buildings	Allows residents/tenants to shelter in place longer, reduces annual energy spending, and reduces overall net emissions. Can help vulnerable populations avoid dangerous and occasionally life-threatening situations in which weather and economics present a dual threat
Green infrastructure	Reduces localized flooding due to storms, reduces energy demand, and reduces urban heat island (UHI) effect in cities and electricity demand
Cool roofs and surfaces	Reduces UHI effect and electricity demand and reduces overall net emissions
Transit-oriented development	Increases economic development opportunities; provides transportation cost savings and reduces impacts of price volatility; and may improve air quality

Source: https://www.aceee.org/sites/default/files/publications/researchreports/u1508.pdf

Resiliency through Fuel Diversity

Benefits of **Fuel Diversity** in Emergency Operations

- Provides multiple options during a petroleum shortage event or any interruption in supply, enabling continuous vehicle use
- **Decreases harmful exhaust** emissions from traditional fuels

Pacific Gas & Electric's (PG&E's) Electric Vehicles: Value of Exporting Power

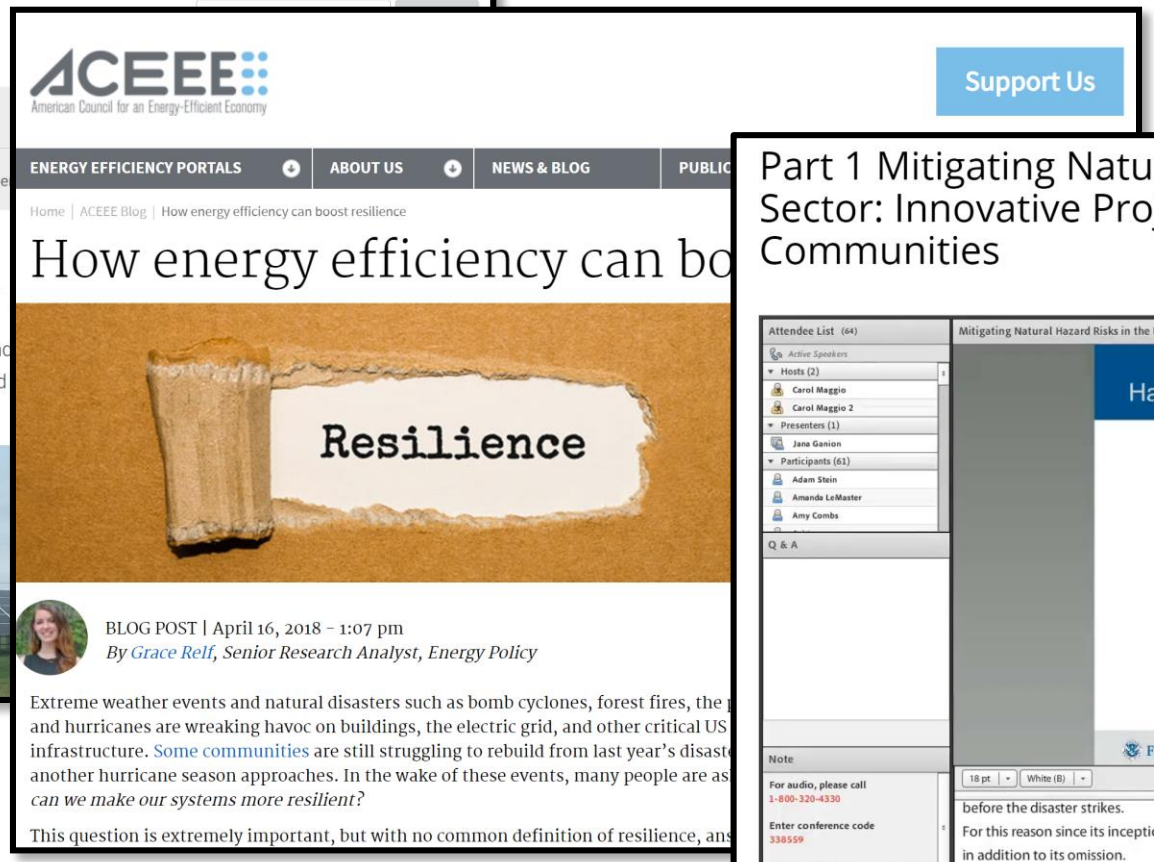
Electric vehicles offer a benefit no other alternative fuel can, the ability to export power and interact with the grid and or buildings. PG&E worked with vehicle manufacturers to develop plug-in hybrid trucks capable of exporting power.

PG&E truck powering a site at a Red Cross event in California.

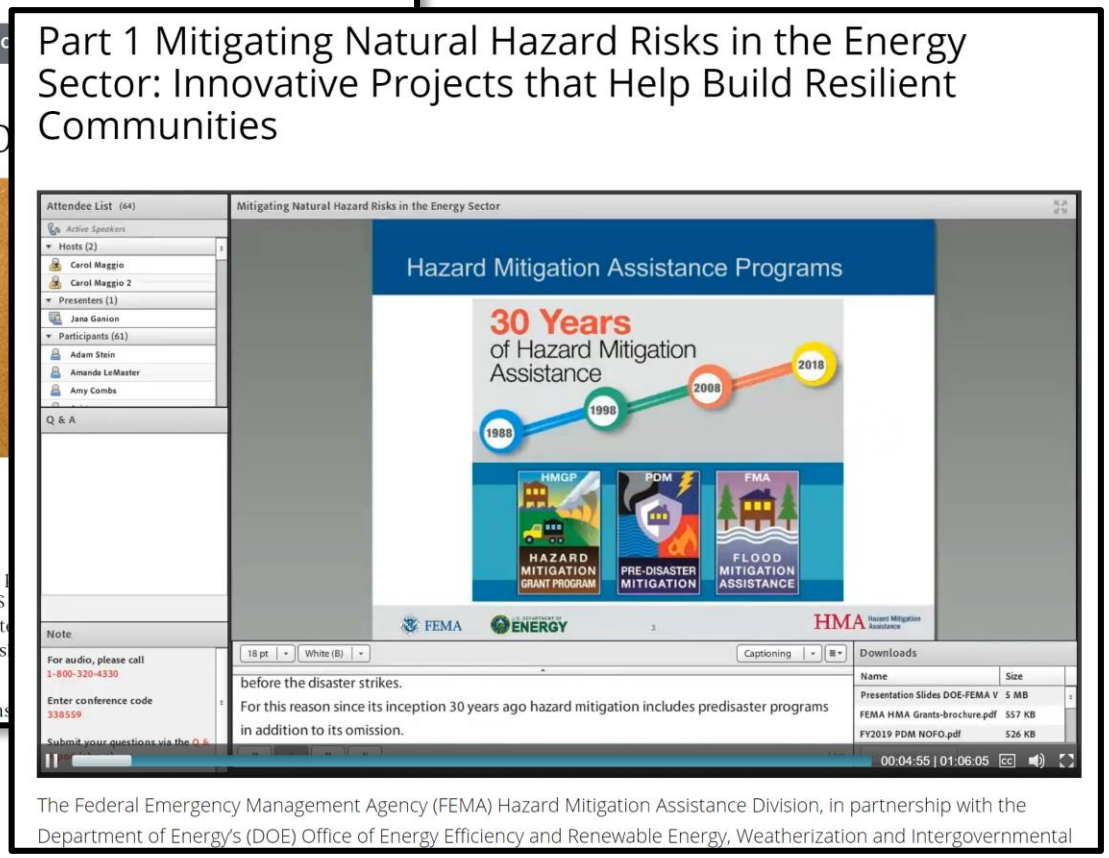
Source: http://naseo.org/data/sites/1/documents/publications/iREV%20EV%20Case%20Study.pdf

Emergency Preparedness Planning Resources

https://www.nrel.gov/energy-solutions/resilient-systems.html

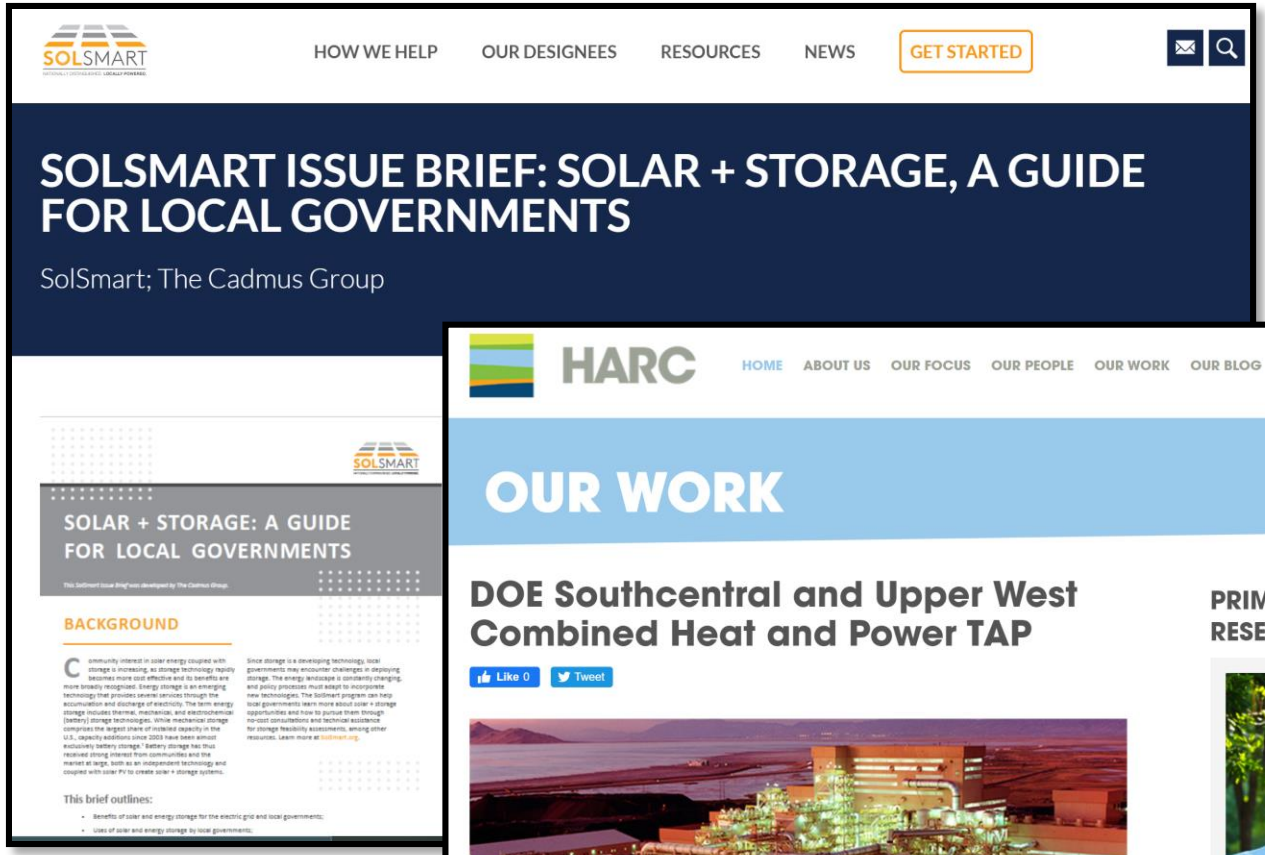


https://aceee.org/blog/2018/04/how-energy-efficiency-can-boost

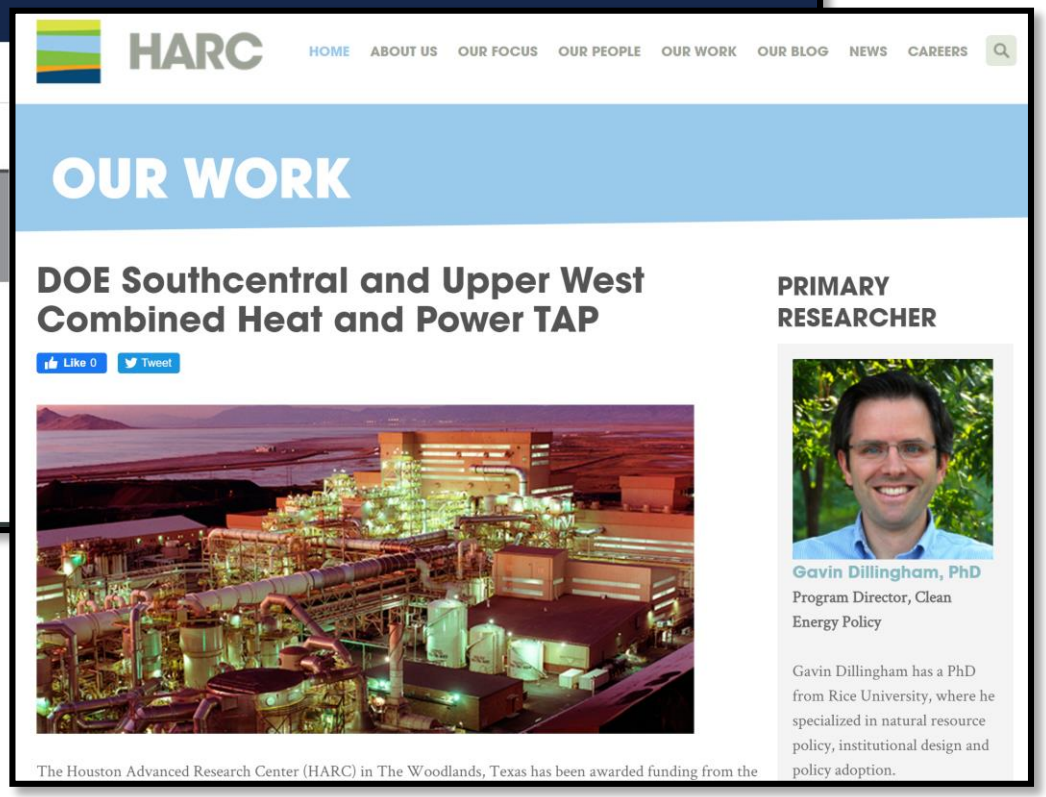


https://www.fema.gov/media-library/assets/videos/185075

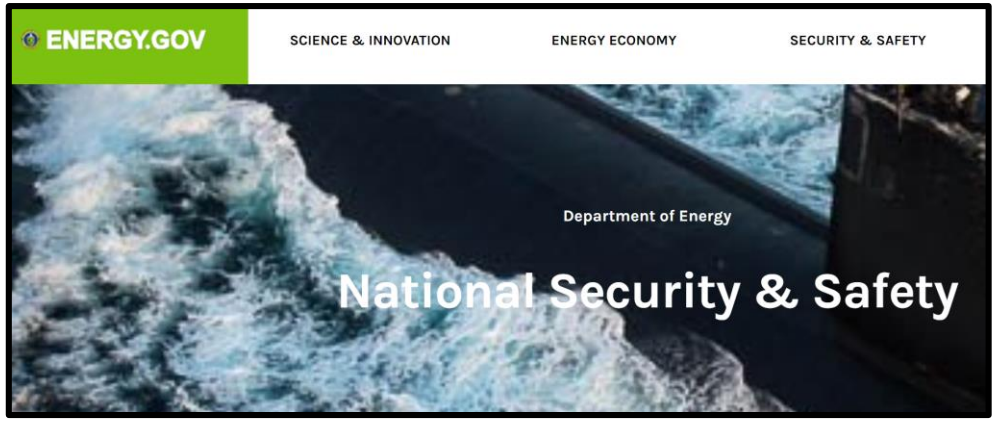
Emergency Preparedness Planning Resources



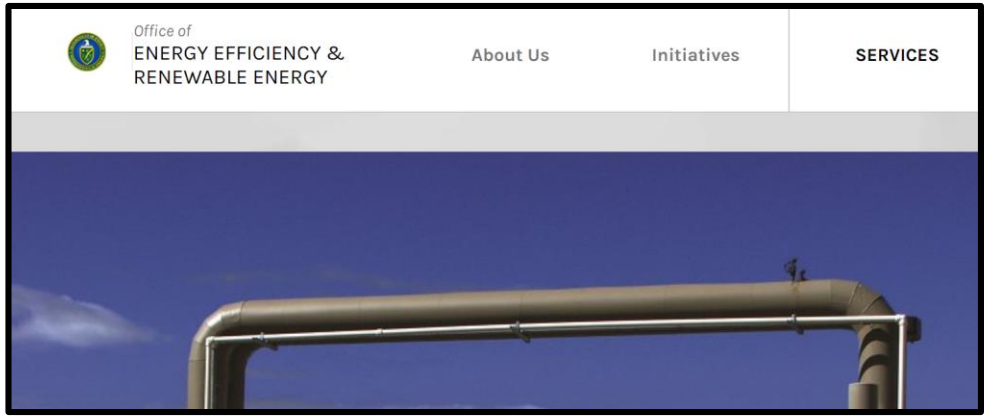
https://www.solsmart.org/resources/issue-brief-solar-storage-a-guide-for-local-governments/



https://www.harc.edu/work/CHP_TAP



https://www.energy.gov/national-security-safety



https://www.energy.gov/eere/office-energy-efficiency-renewable-energy

Emergency Preparedness Planning Resources

Emergency Preparedness and the Energy Supply

Audience: This workshop is appropriate for energy managers, facility managers, personnel that manage electric contracts, and/or collect or report energy and water usage data.

Description:
Disruptions in power occur for a variety of reasons in North Central Texas. Natural and man-made hazards can lead to disruptions in electric services to local government facilities, residential, commercial, and industrial sectors. This workshop will explore ways local governments can better prepare for future disruptions by reducing their electric demand. By reducing demand on the grid through improvements in energy efficiency and implementation of technologies such as distribution generation and microgrids, local governments can improve their resilience to grid outages. Integrating energy efficiency into resilience planning will also be explored and resources for local governments to evaluate energy efficiency as a tool for resiliency will be provided. Additionally, integrating alternative fuel vehicle technology and infrastructure in emergency preparedness applications will also be discussed.

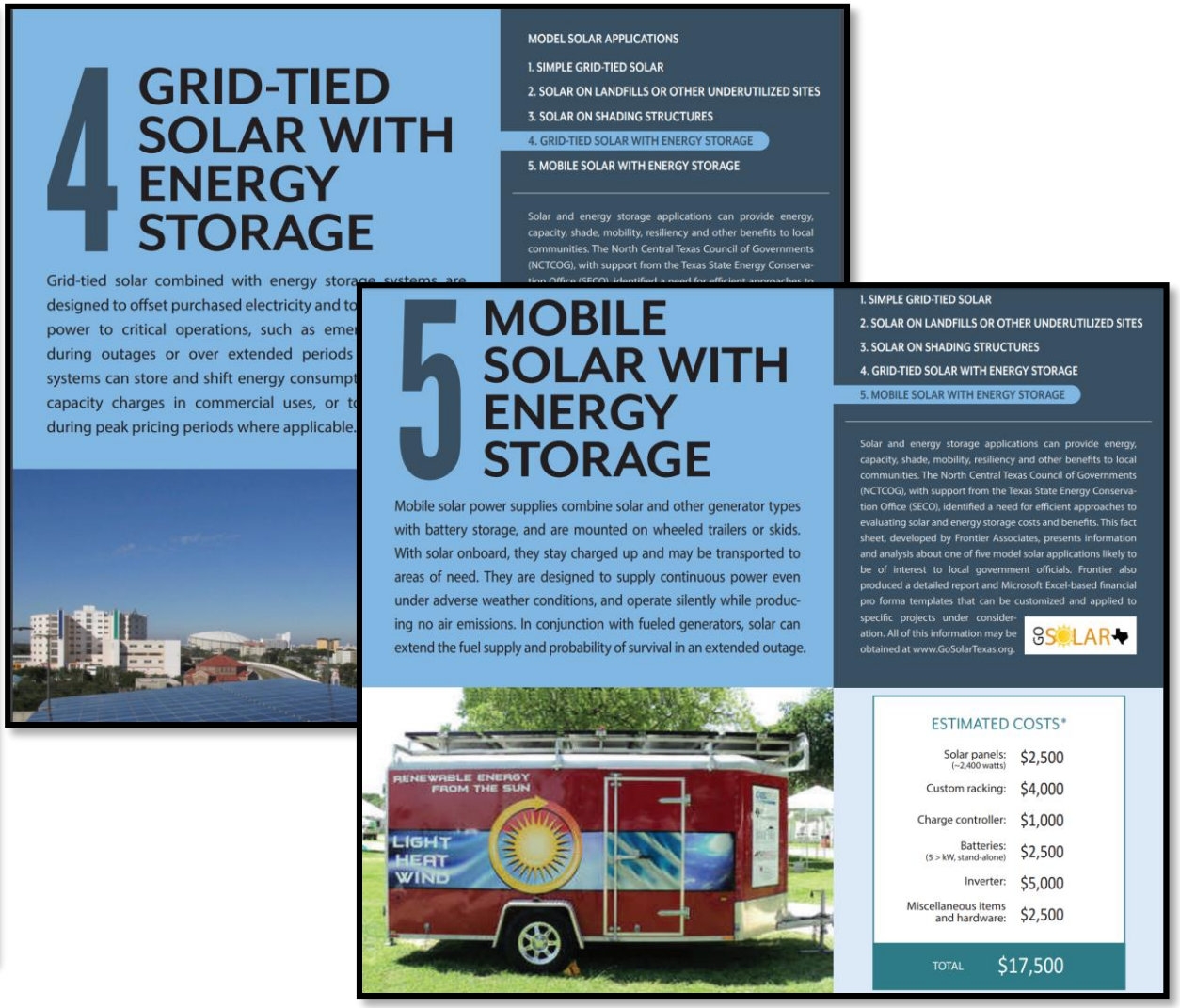
Speakers/Trainers: Gavin Dillingham - Houston Advanced Research Council
Jerry Looper - Denton Municiple Electric
Tamara Cook - North Central Texas Council of Governments
Dorothy Gilliam - North Central Texas Council of Governments

Workshop Presentations:

- Agenda
- NCTCOG Workshop Introduction
- Practical Approaches to Keeping the Lights On with CHP Microgrids
- Emergency Response Plan Coordination
- Resources

Workshop Flyers & Handouts:

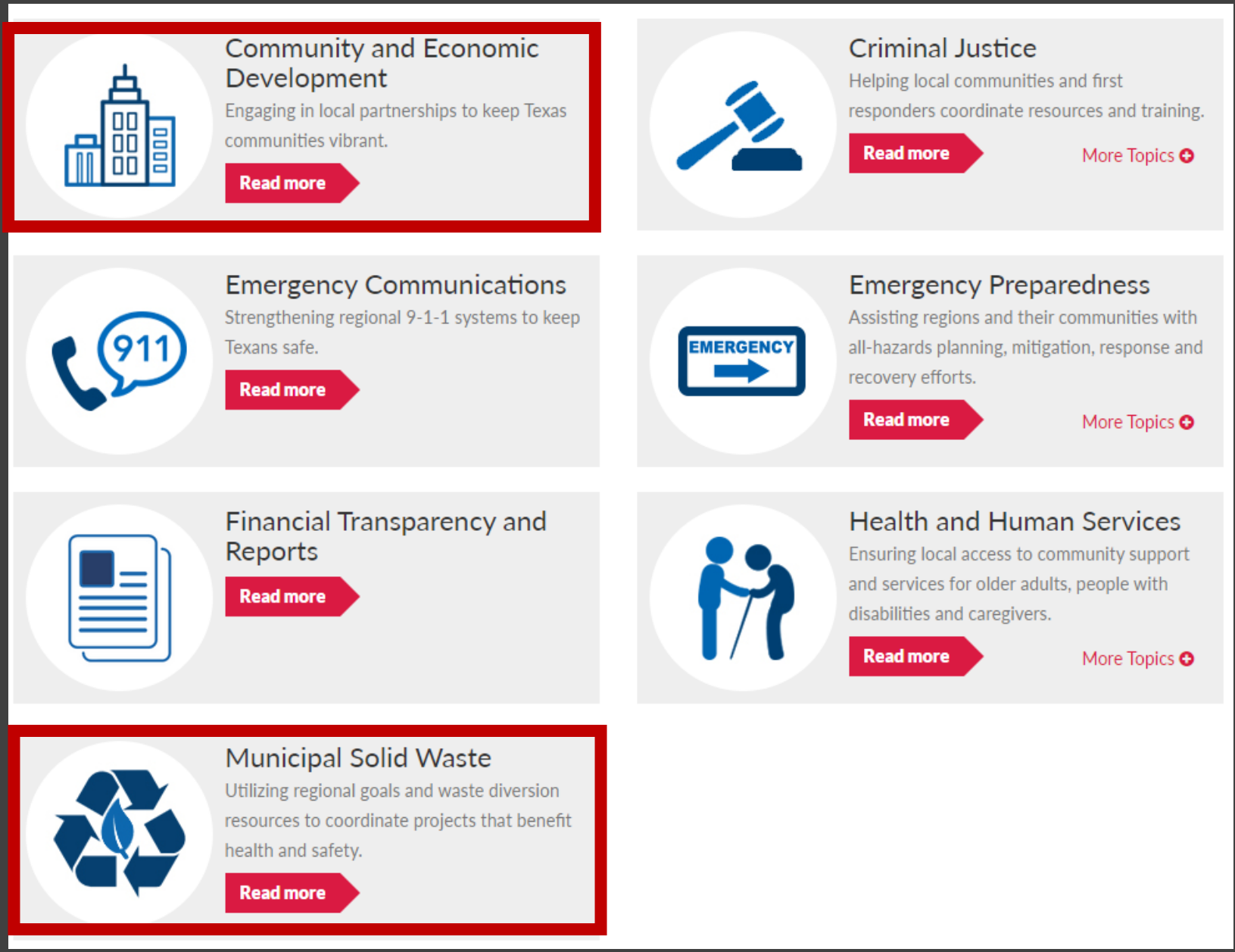
- SECO SB898 (82R) Reporting Form
- Energy Efficiency Reporting Requirements in Texas Matrix
- Free Technical Assistance Flyer
- Why Energy Use Matters
- The Energy-Resilient City Infographic
- Resilient Power Infrastructure and Technology Solutions
- Planning a Resilient Power Sector
- DOE Energy Efficiency and Distributed Generation for Resilience - Case Studies



http://conservenorthtexas.org/workshops-and-training-opportunities

http://gosolartexas.org/cost-benefit-analysis

Consider Underutilized Land in City/Region



Using Underutilized Land for Energy Projects

3-in-1 RFP published by the Connecticut Materials Innovation and Recycling Authority (MIRA)

Waterbury Landfill

- 3 acre urban infill site
- Landfill closed in 2009
- Utility corridor adjacent to property

Shelton Landfill

- 60 acre urban infill site
- Landfill closed in 2001
- Showcase installation at Seaside Park

Ellington Landfill

- 38 acre rural site
- Landfill closed in 1998
- Surround by productive farmland

BROWNFIELD LISTINGS

WWW.BROWNFIELDLISTINGS.COM

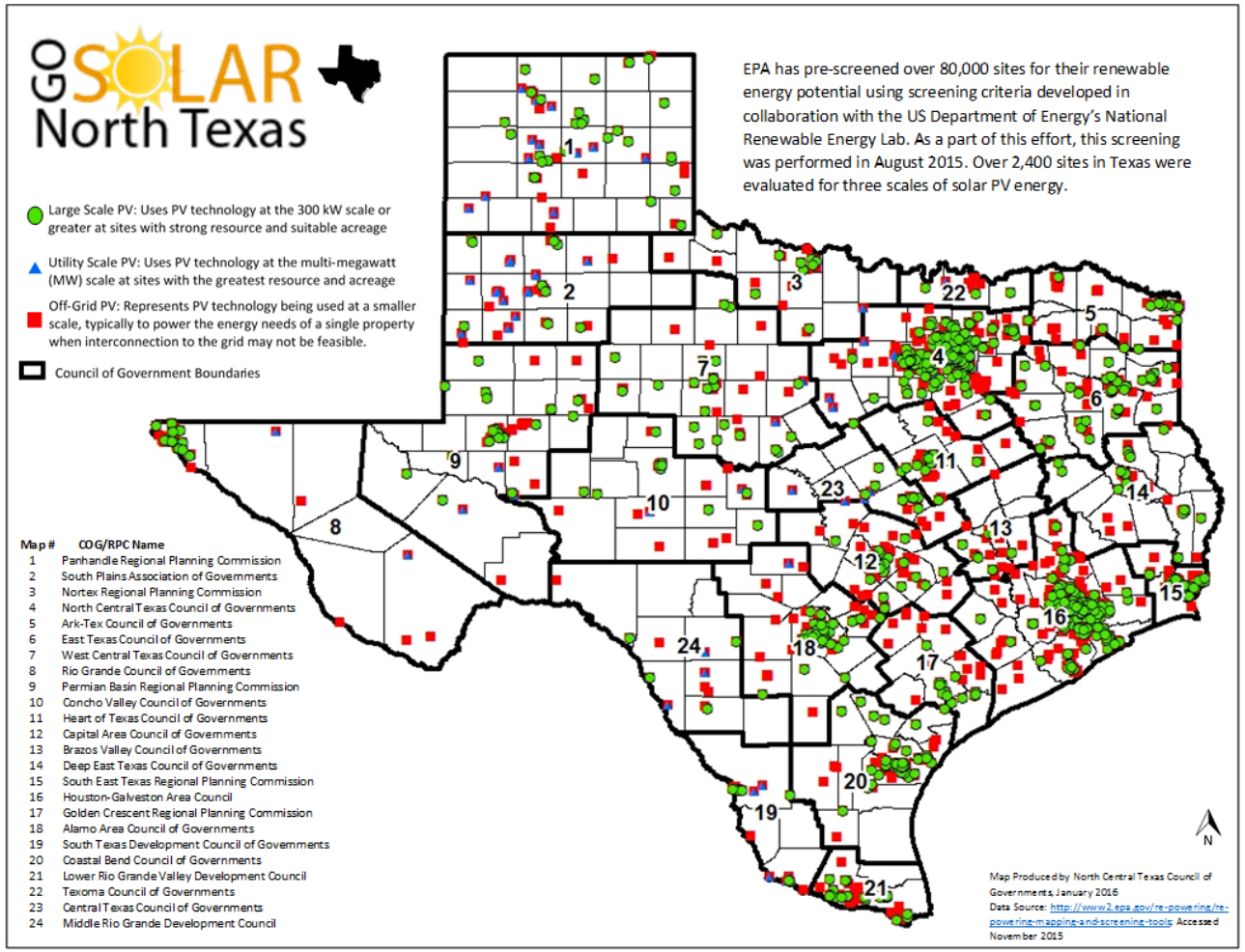
Design. Diligence. Development.

Source: Brownfield Listings Presentation, NCTCOG Underutilized Land Webinar, http://gosolartexas.org/2016/putting-underutilized-land-work-solar

Underutilized Land Resources

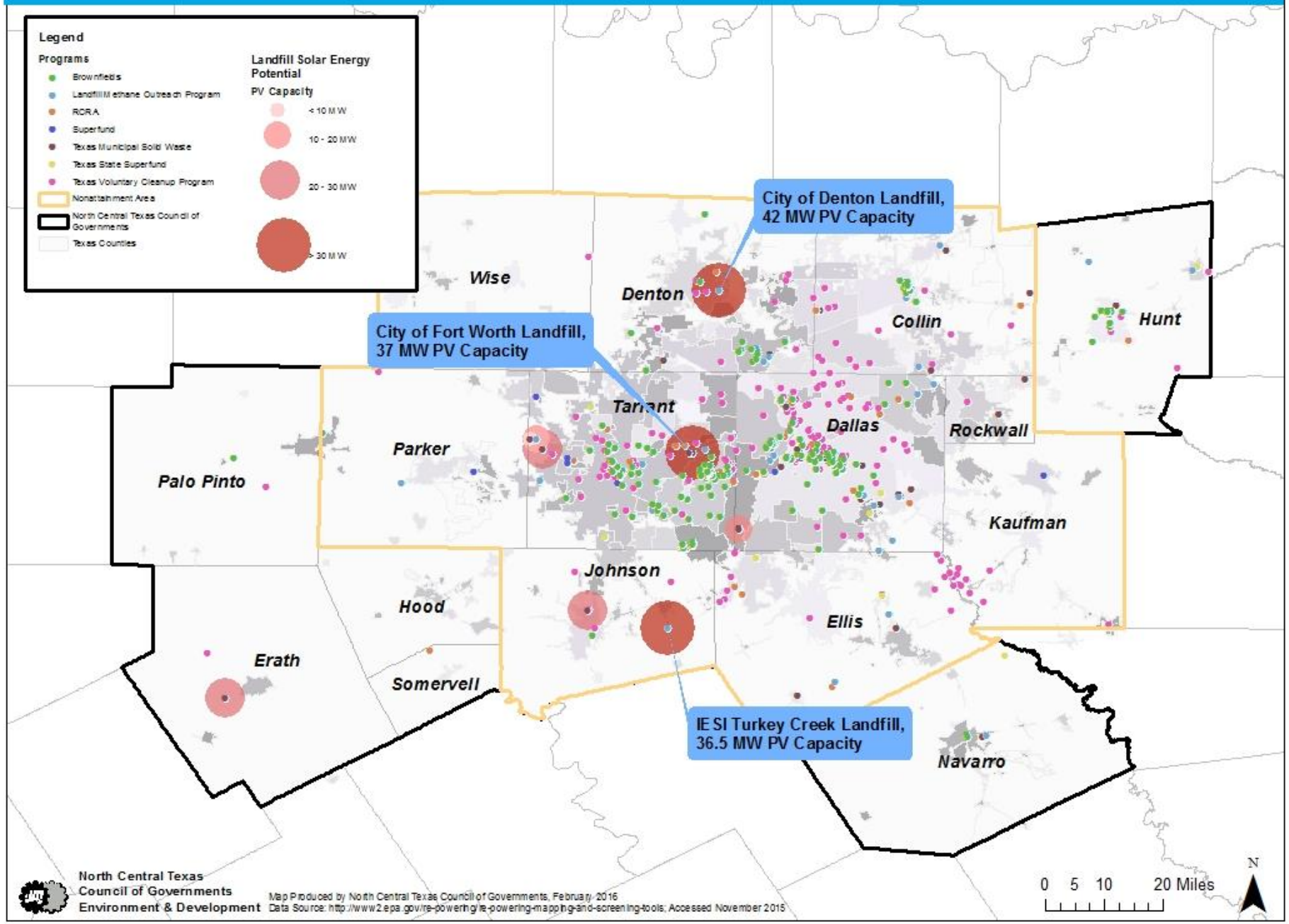
EPA RE-Powering Mapping and Screening Tools

- EPA encourages renewable energy on already developed or degraded land instead of green space. The tool addresses the following types of sites:
  - Potentially Contaminated Sites (Superfund, Brownfield, RCRA, mine site)
  - Landfill (Municipal Solid Waste, Construction and Demolition or similar unit)
  - Underutilized (Abandoned parcels, parking lots, buffer zones)
  - Rooftop (Solar PV only; Commercial / Industrial roofs)



Source: https://www.epa.gov/re-powering/re-powering-mapping-and-screening-tools

North Central Texas Council of Governments Solar Energy Potential



Underutilized Land Resources

Renewable Natural Gas (RNG)

- Renewable natural gas (RNG) is a term used to describe biogas that has been upgraded for use in place of fossil natural gas.
- Sources include municipal solid waste landfills, digesters at water resource recovery facilities (wastewater treatment plants), livestock farms, food production facilities and organic waste management operations.

As a substitute for natural gas, RNG has many end uses:

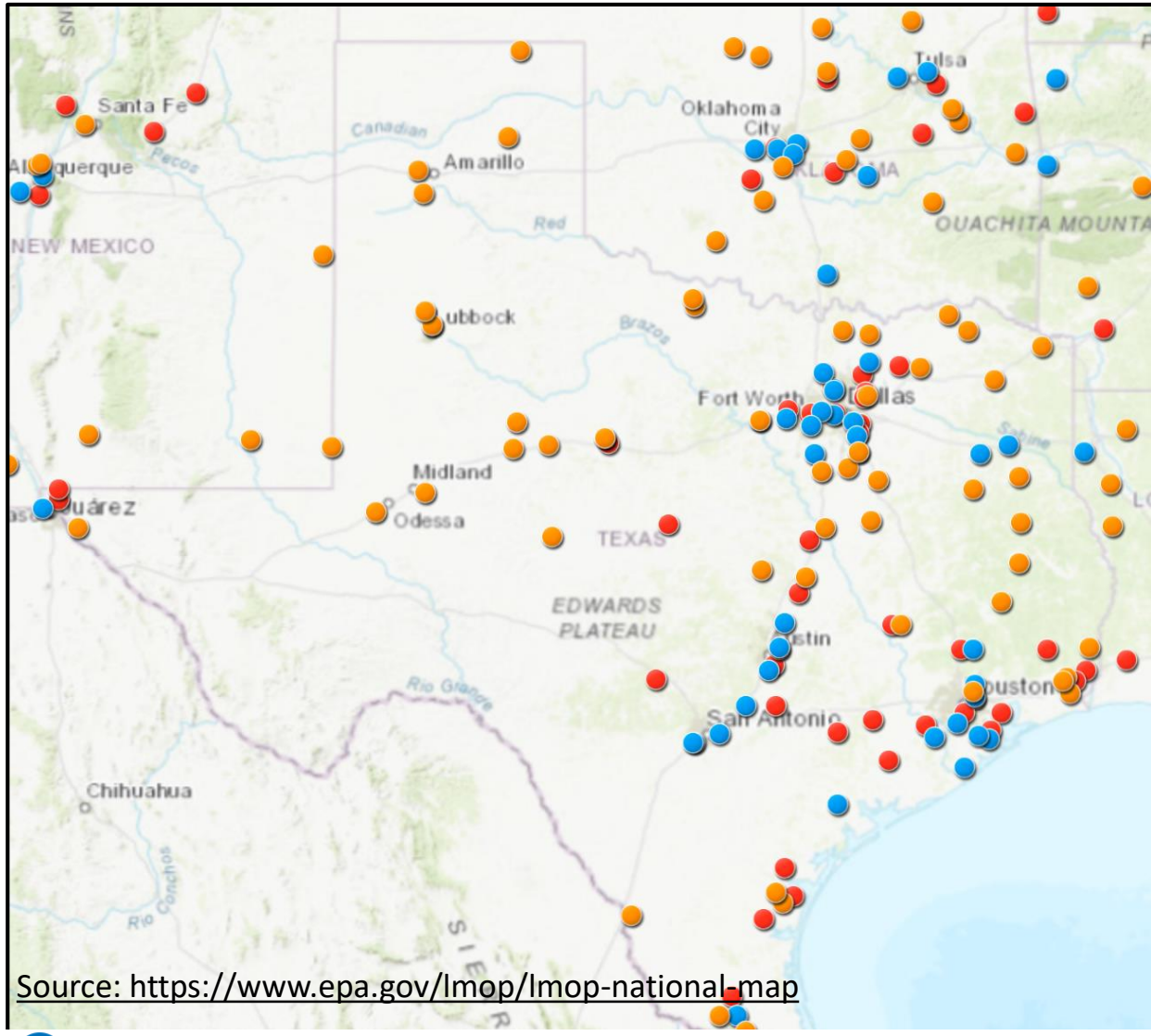
- in thermal applications,
- to generate electricity,
- for vehicle fuel or
- as a bio-product feedstock.

Source: https://www.epa.gov/lmop/renewable-natural-gas#rngmap

Landfill Methane Outreach Program (LMOP)

https://www.epa.gov/lmop/landfill-gas-energy-project-data-and-landfill-technical-data

Landfill Methane Outreach Program (LMOP) National Map

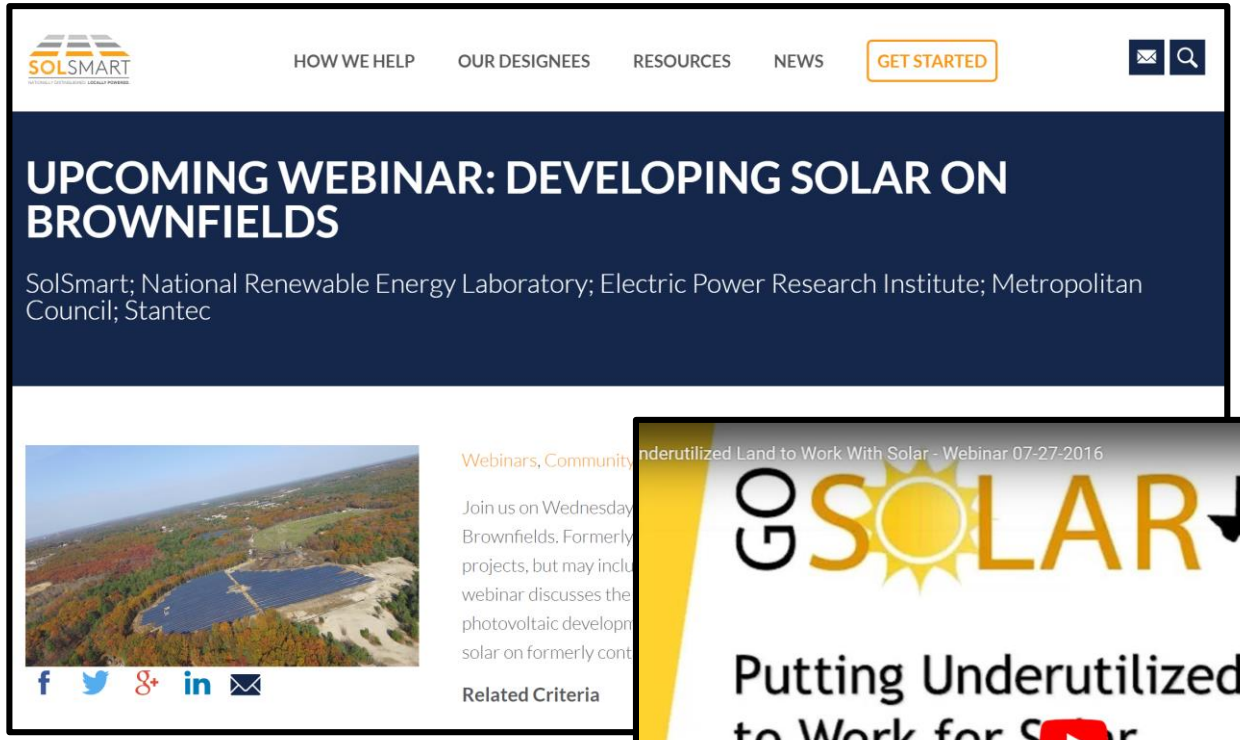


Source: https://www.epa.gov/lmop/lmop-national-map

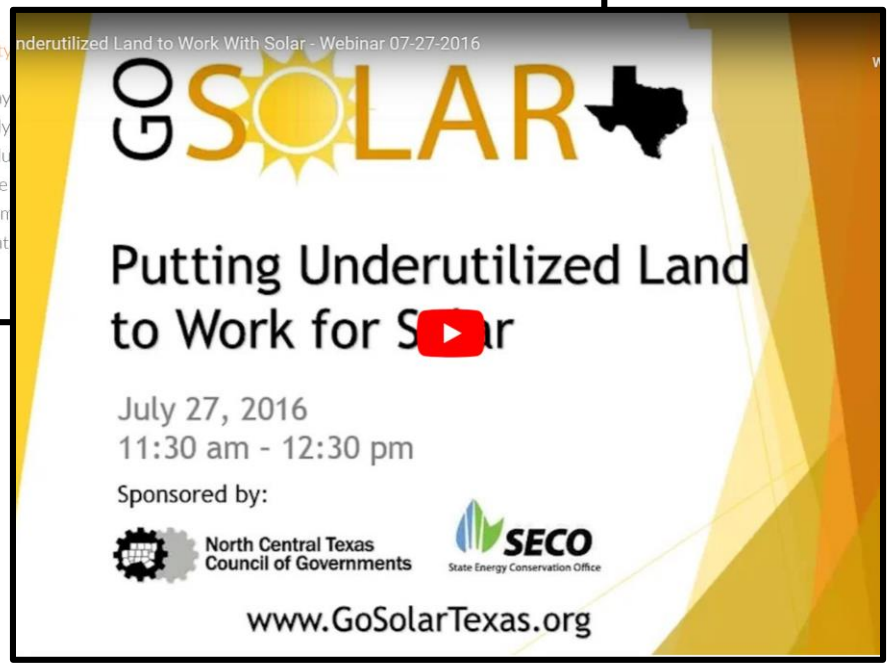
Landfills (divided into three "Categories" for this map)

- Candidate Landfills
- Landfills with an Operational, Under-construction or Planned Project
- Other Landfills

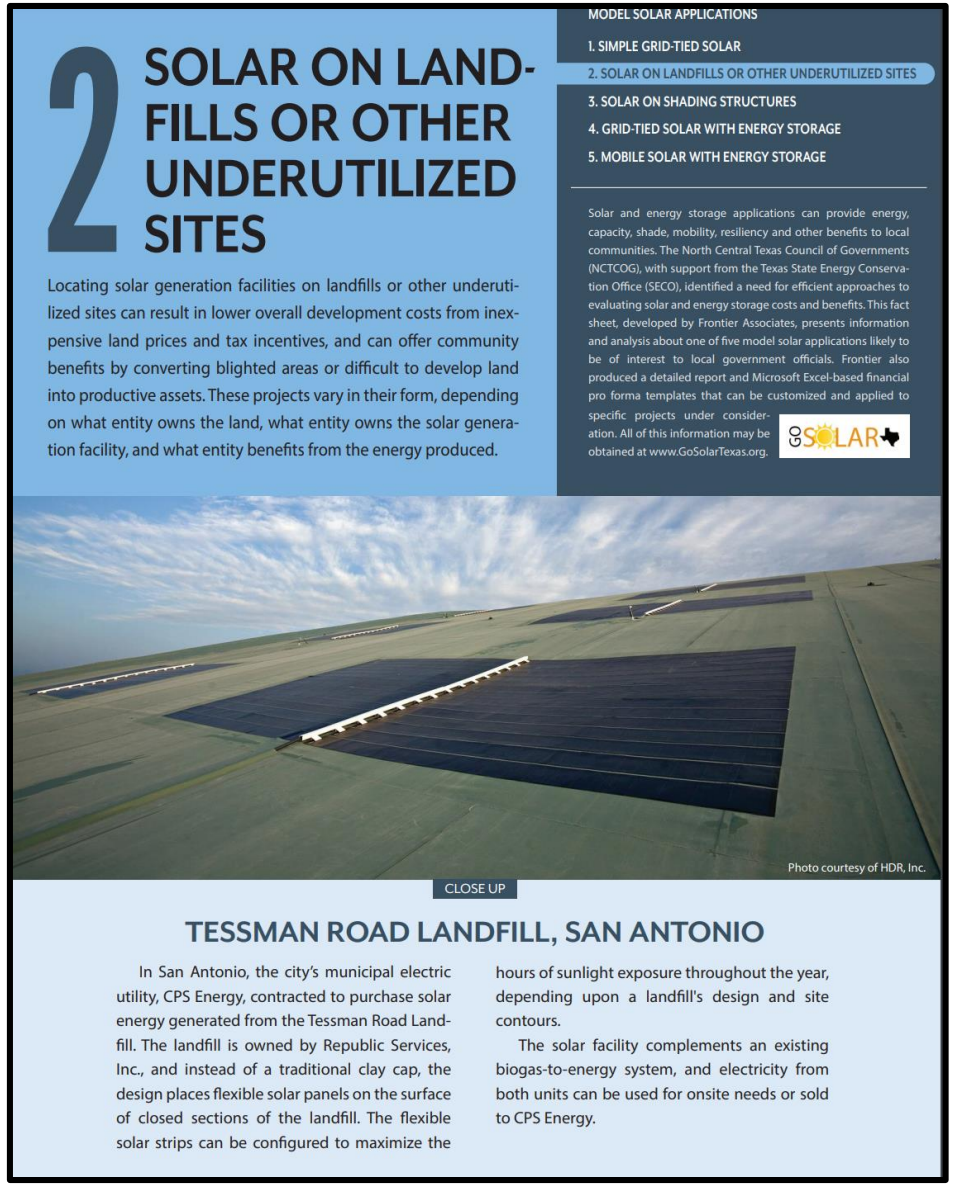
Underutilized Land Resources



https://www.solsmart.org/resources/upcoming-webinar-developing-solar-on-brownfields/

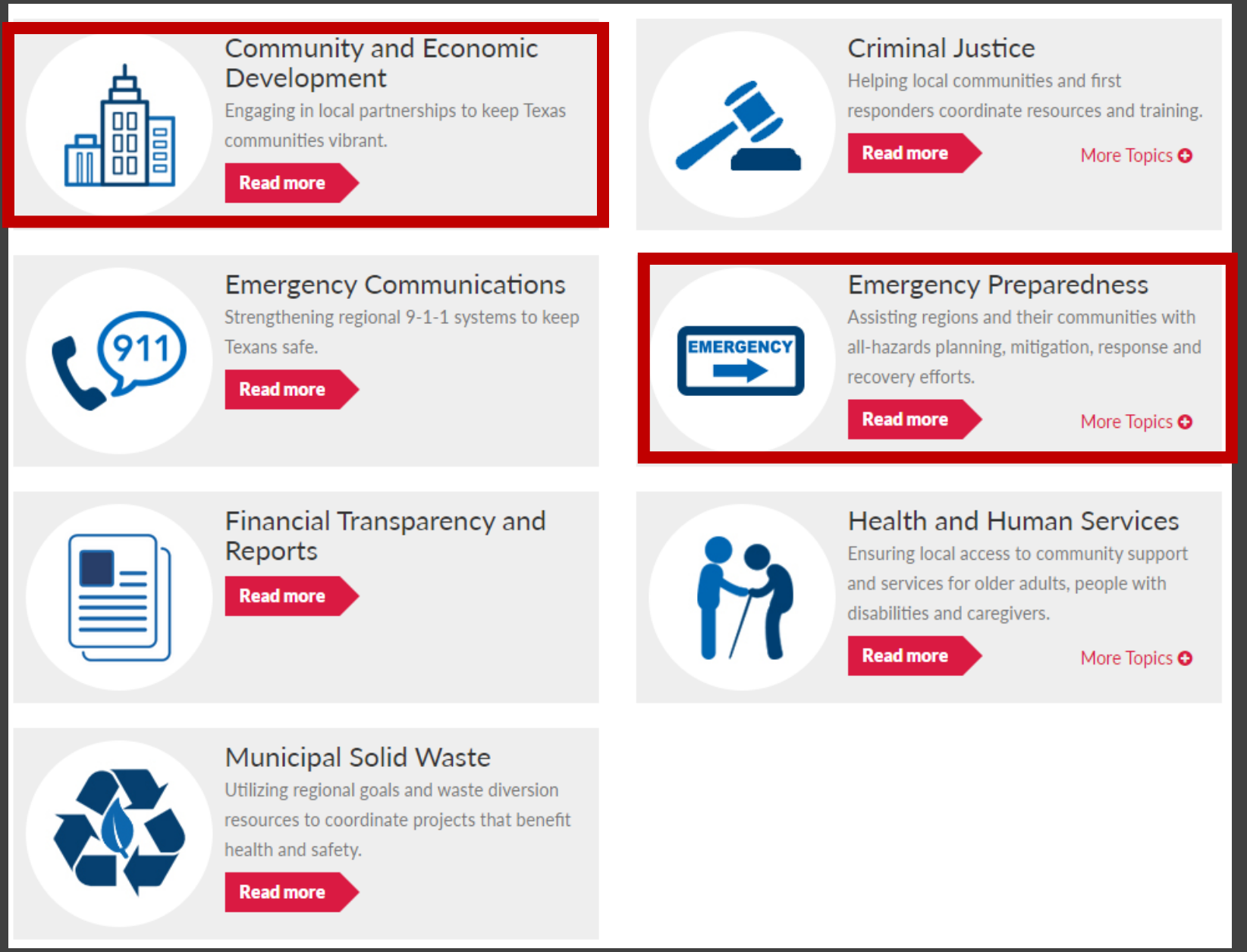


http://gosolartexas.org/2016/putting-underutilized-land-work-solar



http://gosolartexas.org/cost-benefit-analysis

Encourage Cities to Complete SECO Local Government Energy Reporting



SECO Local Government Energy Reporting

Section 388.005 (c) Texas Health and Safety Code

Purpose: Lower Local Government Energy Consumption

Requirements: Requires all political subdivisions, institutes of higher education, and state agencies in the 42 Ozone Nonattainment and Near Nonattainment Counties to establish a **goal of reducing electric consumption by at least 5% each state fiscal year for 7 years** beginning September 1, 2019 **and to submit an annual report** to the State Energy Conservation Office (SECO)

Issues: Lack of Awareness, Non-Compliance with Annual Reporting Requirement

SECO Local Government Energy Reporting

Who Reports?

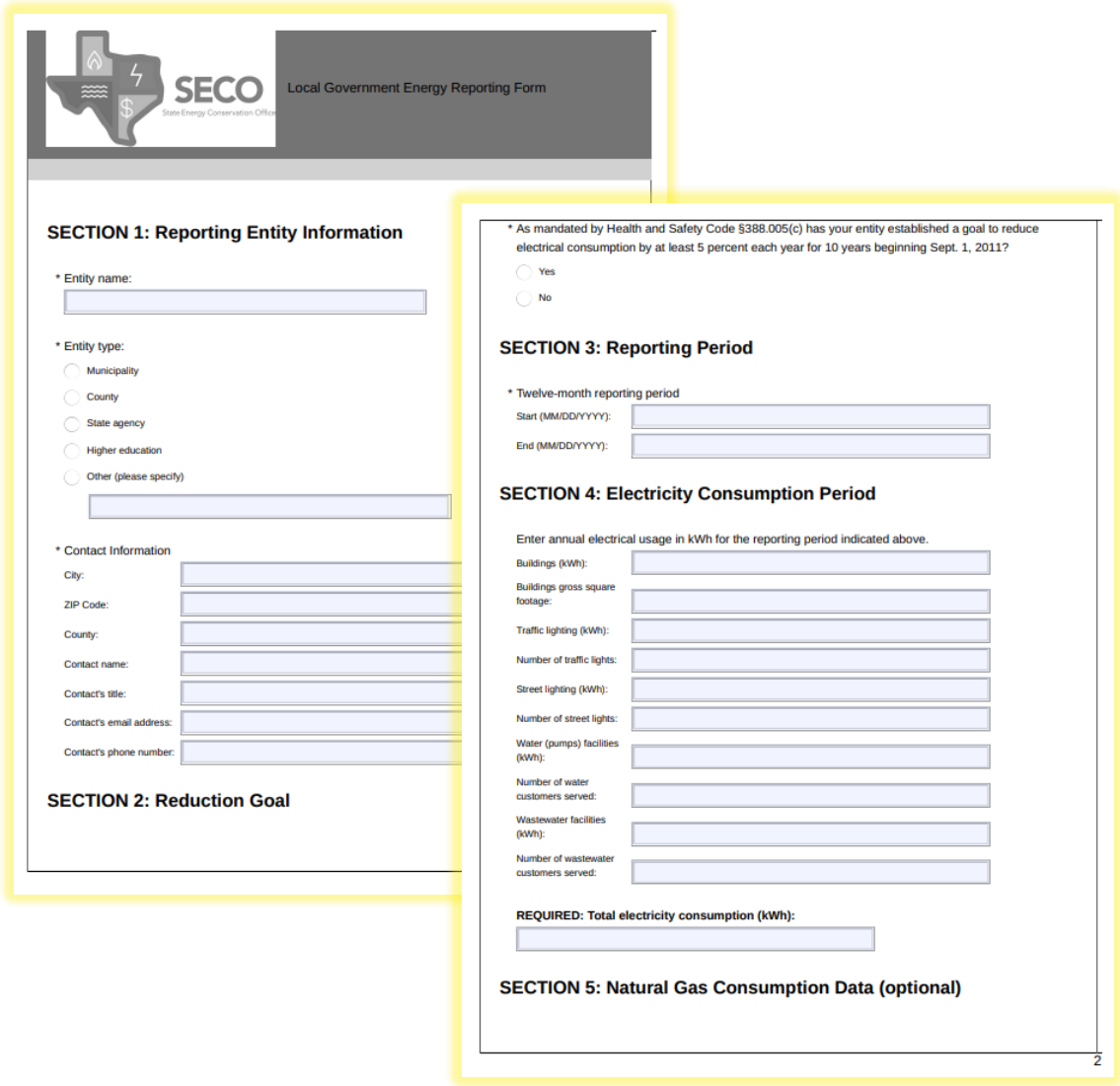
The following entities in 42 Nonattainment or Near Nonattainment counties:

- ★Cities and Counties
- ★State Agencies
- ★Institutes of Higher Education

What's Due:

Annual report to SECO recording the entity's annual electric consumption (kWh) and the entity's progress to meet the 5% energy reduction goal

EXTENDED DEADLINE: February 1, 2020



SECO State Energy Conservation Office

Local Government Energy Reporting Form

SECTION 1: Reporting Entity Information

* Entity name:

* Entity type:

Municipality
County
State agency
Higher education
Other (please specify)

* Contact Information

City:
ZIP Code:
County:
Contact name:
Contact's title:
Contact's email address:
Contact's phone number:

SECTION 2: Reduction Goal

* As mandated by Health and Safety Code §388.005(c) has your entity established a goal to reduce electrical consumption by at least 5 percent each year for 10 years beginning Sept. 1, 2011?

Yes
No

SECTION 3: Reporting Period

* Twelve-month reporting period

Start (MM/DD/YYYY):
End (MM/DD/YYYY):

SECTION 4: Electricity Consumption Period

Enter annual electrical usage in kWh for the reporting period indicated above.

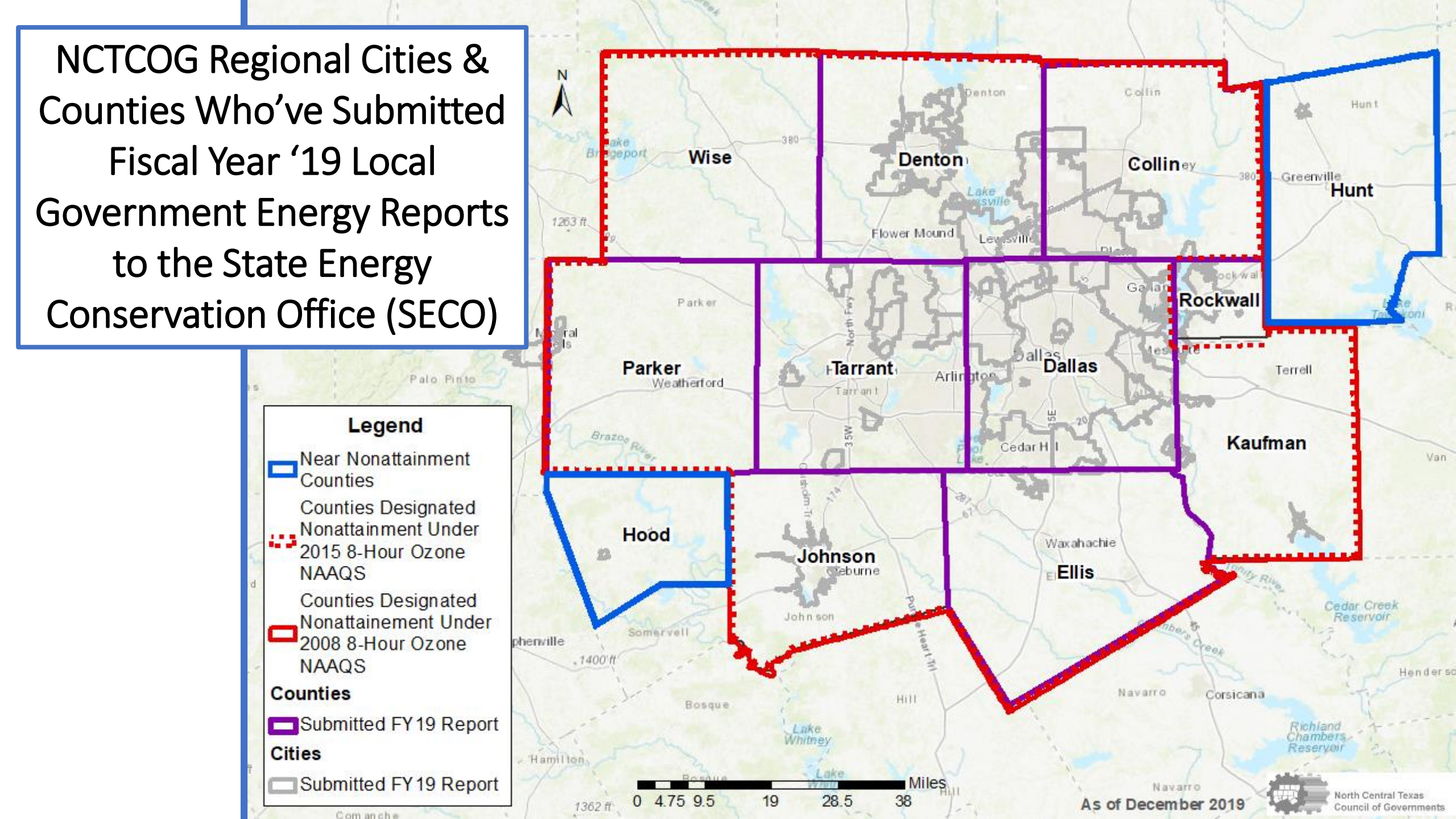
Buildings (kWh):
Buildings gross square footage:
Traffic lighting (kWh):
Number of traffic lights:
Street lighting (kWh):
Number of street lights:
Water (pumps) facilities (kWh):
Number of water customers served:
Wastewater facilities (kWh):
Number of wastewater customers served:

REQUIRED: Total electricity consumption (kWh):

SECTION 5: Natural Gas Consumption Data (optional)

2

NCTCOG Regional Cities & Counties Who've Submitted Fiscal Year '19 Local Government Energy Reports to the State Energy Conservation Office (SECO)



Local Government Energy Reporting Resources to Increase Awareness

North Central Texas Council of Governments

SECO State Energy Conservation Office

As part of a year-long project with funding from the State Energy Conservation Office (SECO), NCTCOG staff developed a series of deliverables to increase awareness and compliance to the state mandated energy reporting requirements of **Section 388.005 (c) Texas Health and Safety Code**.

The deliverables have been pulled together to create a **"Local Government Energy Reporting: Toolkit"** that Council of Governments (COGs) across Texas can utilize with the applicable entities.

Toolkit Items Include:

- ✓ "How-To" Document on **Uploading Template Data to ENERGYSTAR Building Portfolio Manager**
- ✓ **Letter** to Applicable Entities Regarding the Local Government Energy Reporting Requirements
- ✓ Template handout for COG's willing to provide **technical assistance** to entities over the energy reporting requirements
- ✓ Informational handout highlighting SECO's **Preliminary Energy Assessment (PEA) Program**
- ✓ Blank FY19 Energy Report Form Template

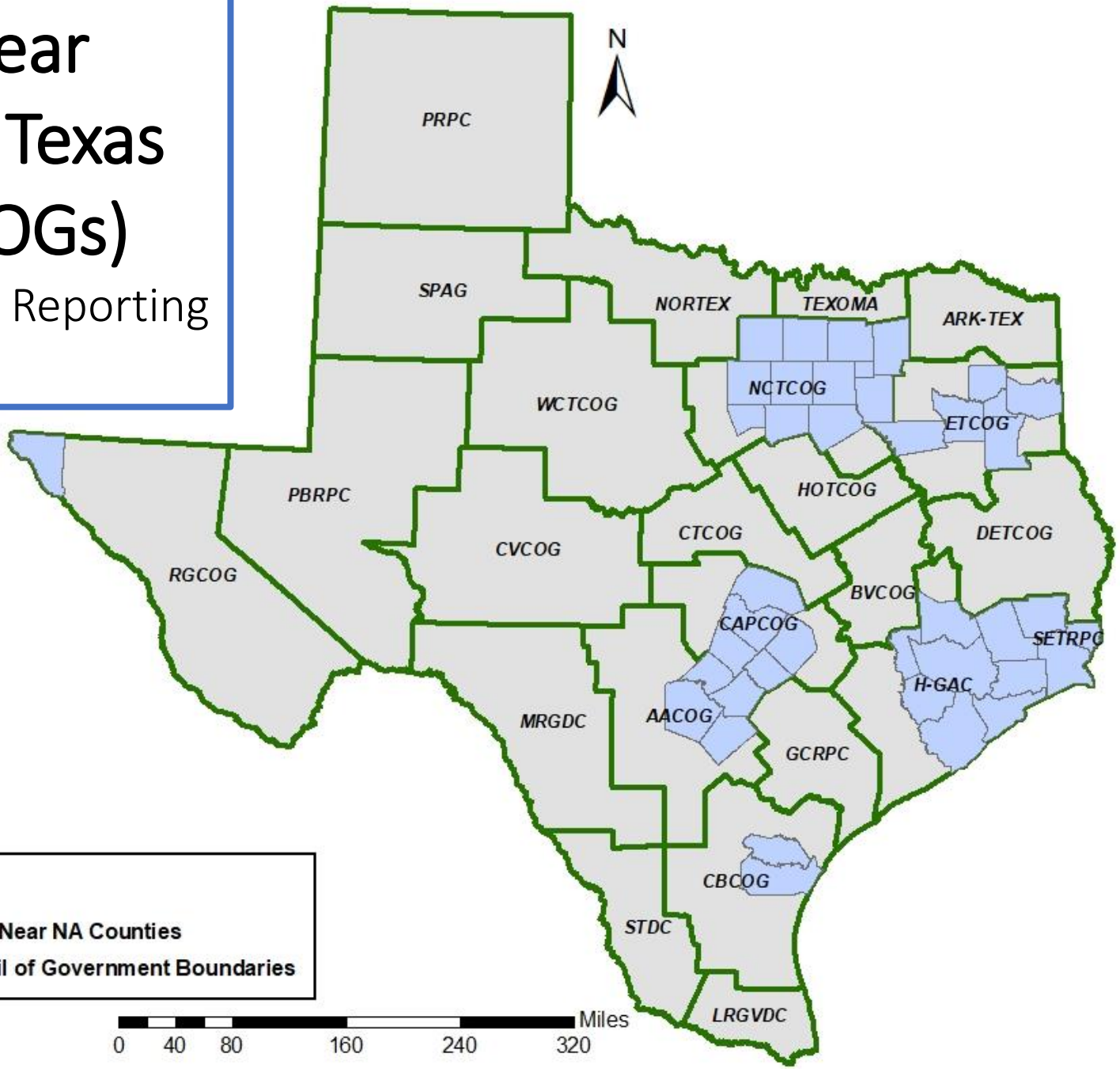
Toolkit can be found on our website

http://conservenorthtexas.org/item/local-government-energy-reporting-toolkit

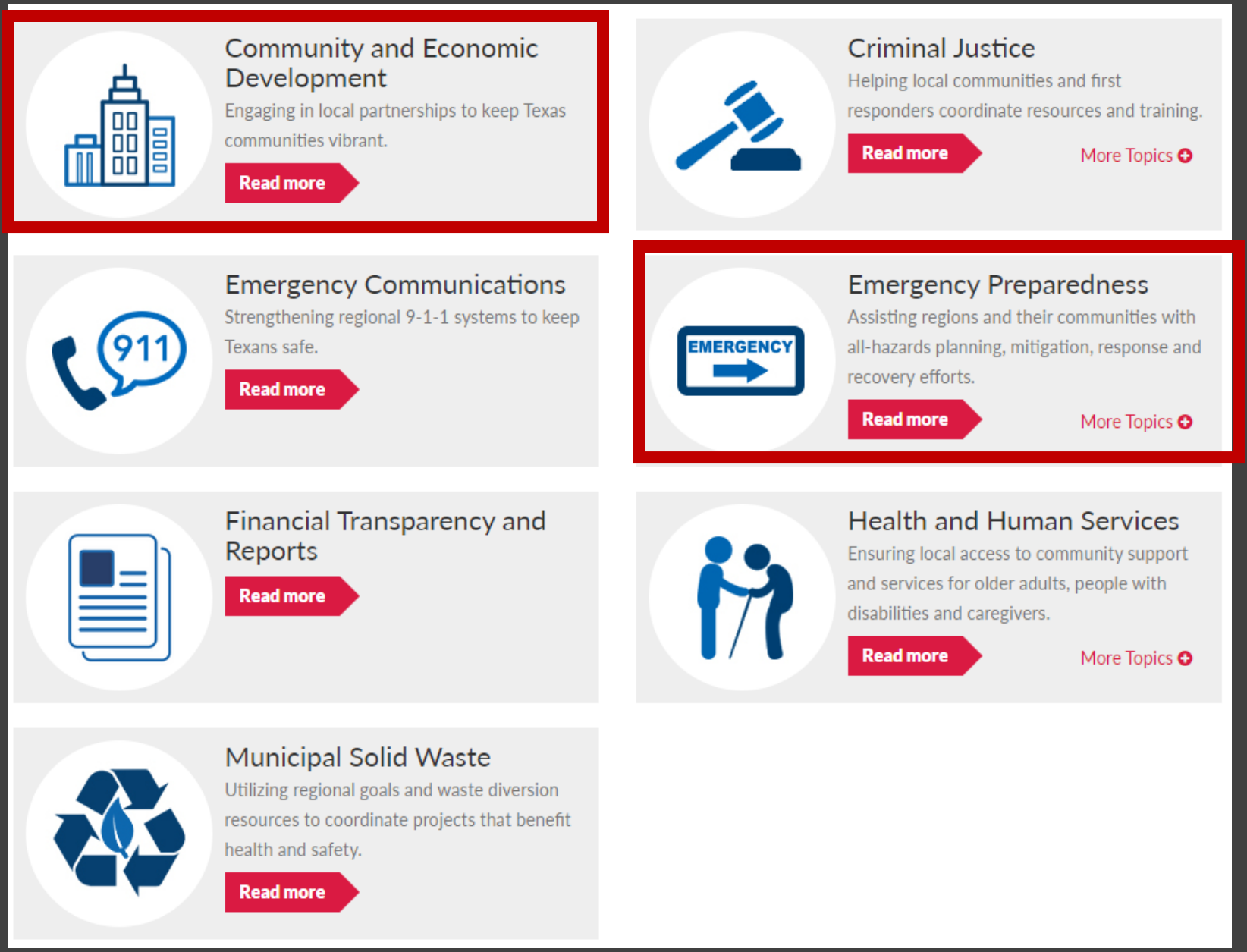
Ozone Nonattainment or Near Nonattainment Counties in Texas Council of Governments (COGs)

Subject to the Local Government Energy Reporting Requirements

Bastrop	Hardin	Rockwall
Bexar	Harris	Rusk
Brazoria	Harrison	San Patricio
Caldwell	Hays	Smith
Chambers	Henderson	Tarrant
Collin	Hood	Travis
Comal	Hunt	Upshur
Dallas	Jefferson	Waller
Denton	Johnson	Williamson
El Paso	Kaufman	Wilson
Ellis	Liberty	Wise
Fort Bend	Montgomery	
Galveston	Nueces	
Gregg	Orange	
Guadalupe	Parker	



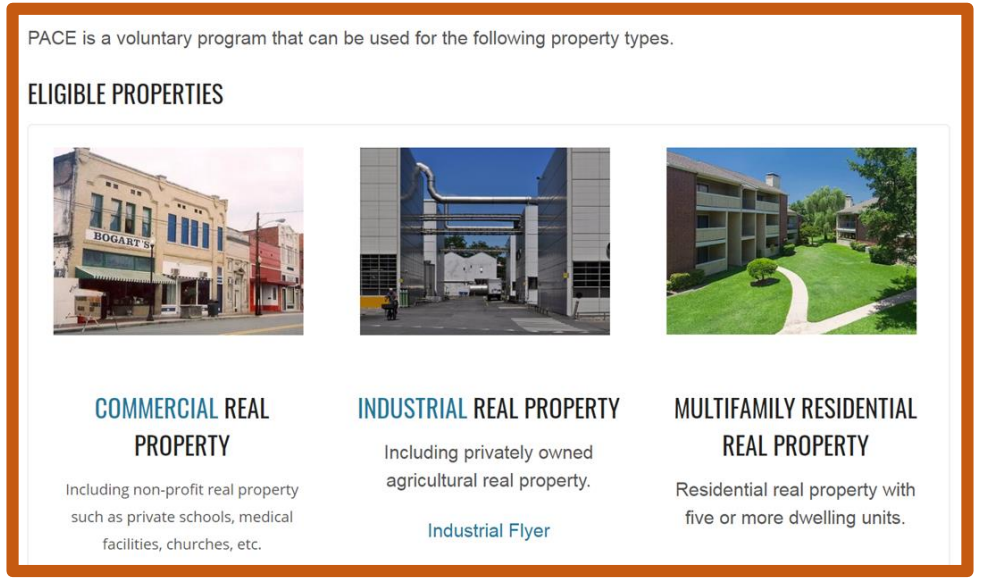
Encourage Cities & Counties to Adopt the TX-PACE Program



Texas Property Assessed Clean Energy (TX PACE) Program

TX-PACE facilitates the use of private capital to finance water conservation**, energy efficiency**, resiliency, and distributed generation projects to eligible properties

Source: https://www.texaspaceauthority.org/wp-content/uploads/public-sector-2018-11-19.pdf



Eligible Improvements:

Chillers, boilers, and furnaces • HVAC, BMS, BAS, EMS controls • Lighting • Water heating systems • Energy management systems and controls • Roofing • Windows • Doors • Insulation • Elevator modernization • Pool equipment • Cogeneration or combined heat and power • Heat recovery and steam traps • Solar panels • Wind turbines • Water management systems and controls • Irrigation equipment • Rainwater collection systems • Toilets • Faucets • Greywater systems... and more!

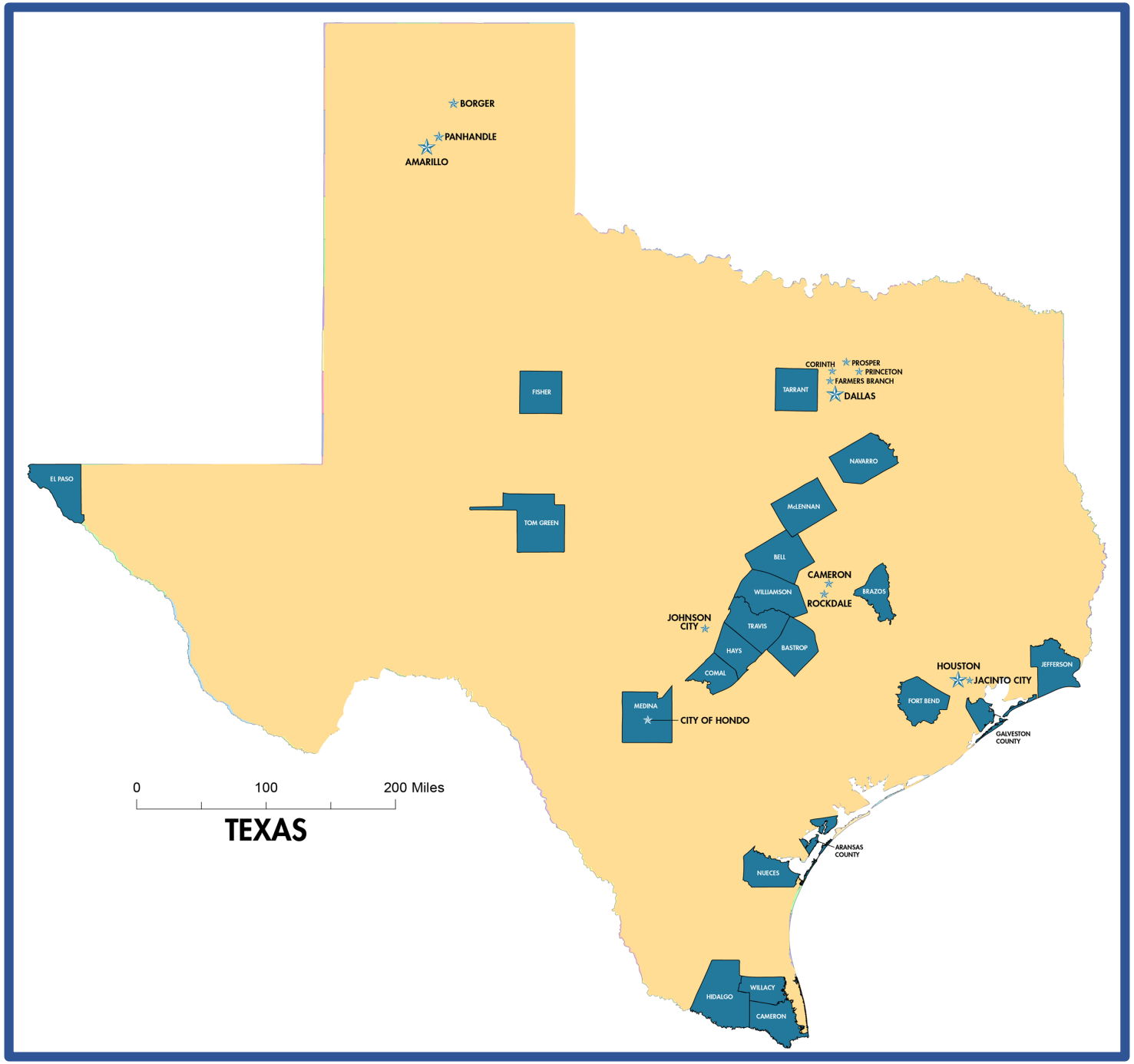
Designated Texas PACE Districts

Counties

- Aransas
- Bastrop
- Bell
- Brazos
- Cameron
- Comal
- El Paso
- Fisher
- Fort Bend
- Galveston
- Hays
- Hidalgo
- Jefferson
- Medina
- McLennan
- Navarro
- Nueces
- Tarrant
- Tom Green
- Travis
- Willacy
- Williamson

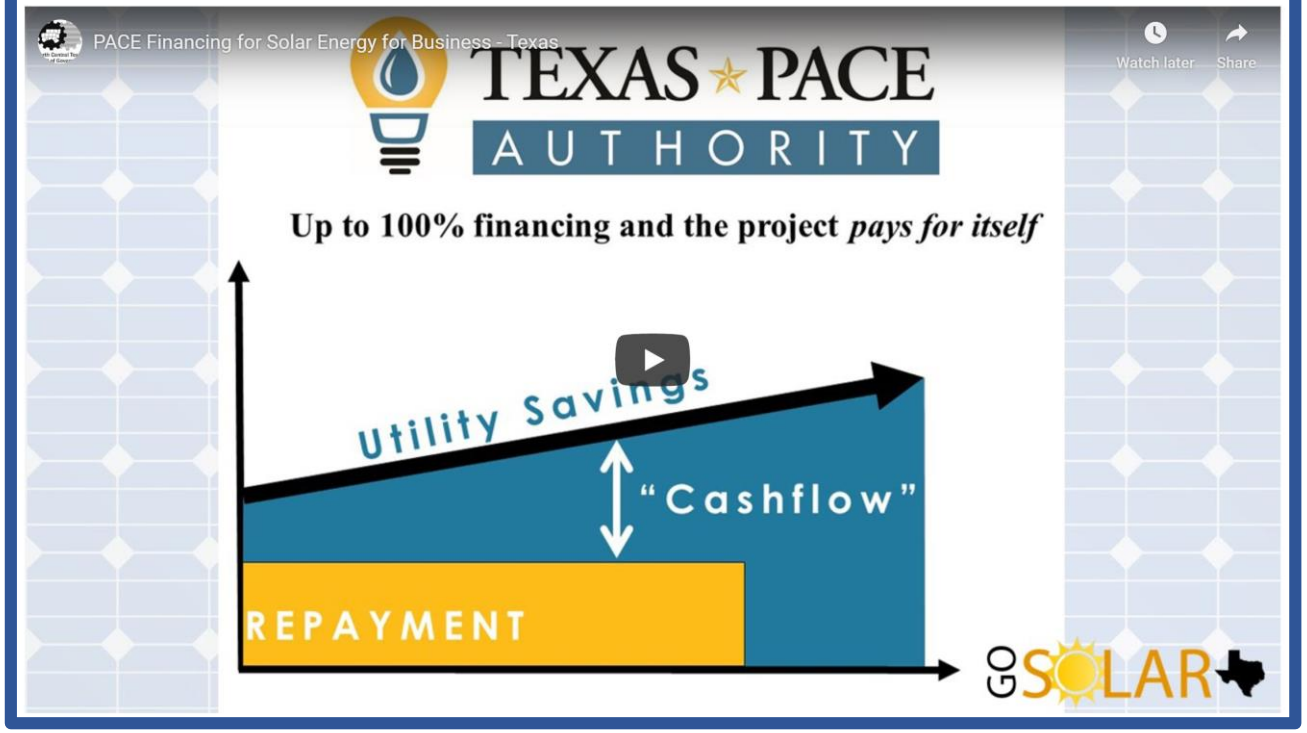
Cities

- Amarillo
- Borger
- Cameron
- Corinth
- Dallas
- Farmers Branch
- Hondo
- Houston
- Jacinto City
- Johnson City
- Panhandle
- Princeton
- Prosper
- Rockdale



Source: Texas Pace Authority - https://www.texaspaceauthority.org/service-areas/

PACE Adoption Resources



NCTCOG Resources

- http://gosolartexas.org/2016/pace-financing
- http://gosolartexas.org/incentivizing-and-financing-solar#PACEFinancing

Programs

SECO

PROPERTY ASSESSED CLEAN ENERGY

The Property Assessed Clean Energy (PACE) program provides low-cost, long-term financing for water and energy efficiency and conservation improvements to commercial and industrial properties. In 2013, the Legislature passed Senate Bill 385 (83R) allowing municipalities and counties to work with commercial lenders and property owners to pursue improvements using property assessments as a secure repayment mechanism.

Under a PACE arrangement, private property owners evaluate measures that achieve energy savings and obtain financing, repaid as an assessment on the building. The assessment mechanism allows access to low-cost, long-term capital to finance improvements to the property. By eliminating upfront costs, extending financing and simplifying the transfer of repayment obligations to new owners upon sale, PACE overcomes challenges that have hindered building energy efficiency and related projects.

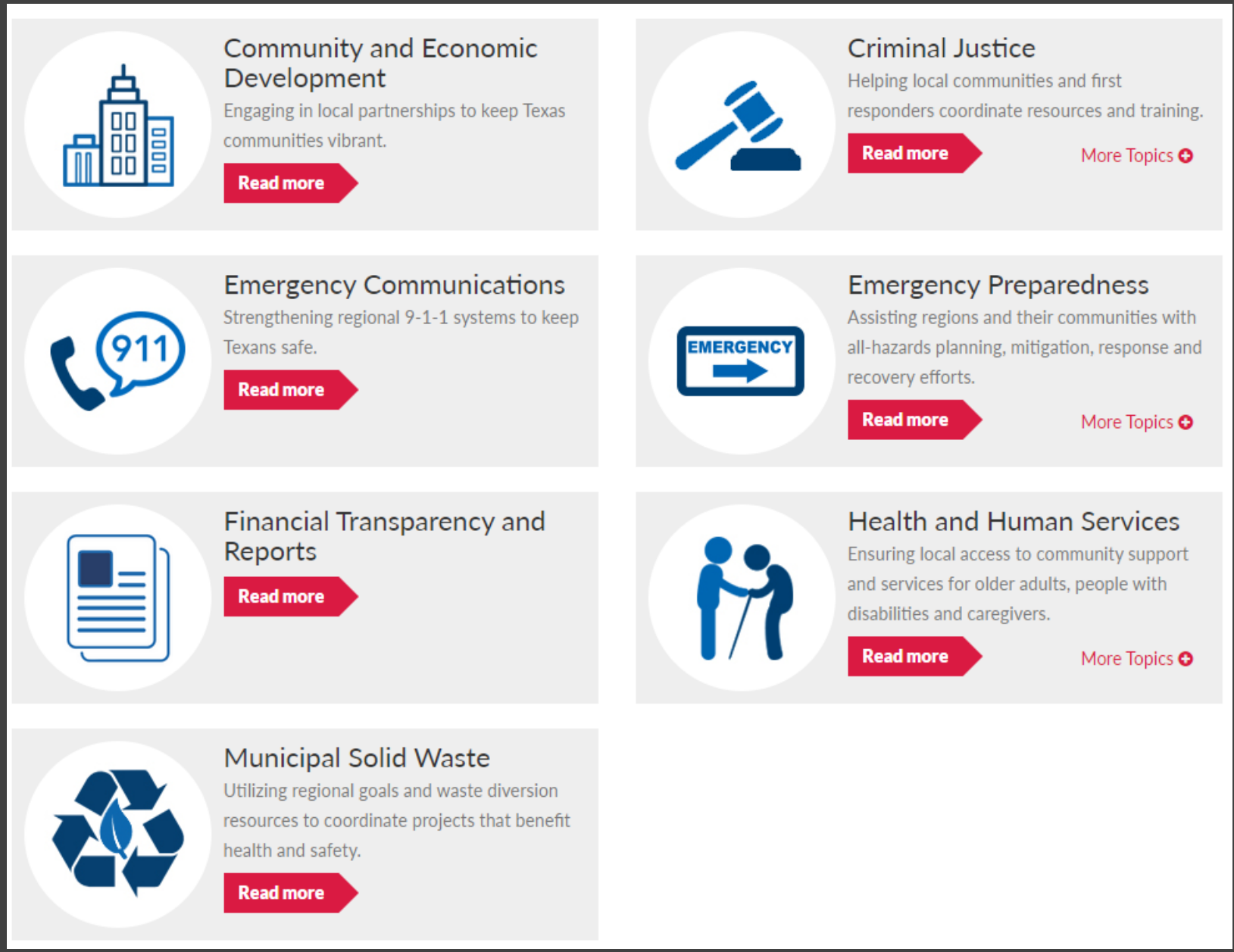
Tools for Establishing a PACE Program

The Houston Advanced Research Center (HARC) with the support of SECO and the Texas PACE Authority has produced several videos to help local governments establish a PACE program in their area:

- How to Establish a TX-PACE Program
- TX-PACE: An overview for Local Government Officials
- Picking up the TX-PACE: Texas Property Assessed Clean Energy Financing

https://comptroller.texas.gov/programs/seco/funding/pace.php

Use NCTCOG and Partner Resources to Connect and Train Local Governments



Energy Related Newsletters

Access North Texas
Information about transit planning and coordination

Air North Texas Clean Air Mail
Air Pollution Action Day alerts and air quality tips, news and resources

Air Quality Funding Update
Current and upcoming air quality funding opportunities

Bicycle/Pedestrian Update
Information about bicycle and pedestrian planning, safety, projects, funding opportunities, and events

Clean Cities Newsflash
A monthly newsletter that provides information on alternative fuels and clean technology vehicle options

Clean School Bus Update
Information related to reducing emissions from the school bus fleet, including upcoming grant funding

Electric Vehicles North Texas (EVNT)
Updates on the EVNT program and announcements on news related to electric vehicles

Energy Management and Energy Efficiency
Emails related to energy, energy efficiency, and solar energy

Engine Off North Texas
Updates on regional developments related to vehicle idling including policies and campaigns, funding opp
success stories, and new regulations

Hello , featured in this issue:

News and Updates:

- 2019 Texas Energy Summit Outstanding Government Organization Award to NCTCOG
- Local Government Energy Reporting – Reminder and Update to Reporting
- Dallas Fort Worth Clean Cities Fleet Recognition Awards and Annual Survey
- North Texas Electric Vehicle (EV) Registration
- No-Cost Technical Assistance to Cities Interested in Achieving SolSmart Designation
- Notice of Loan Fund Availability for the LoanSTAR Program
- Texas GLO Mitigation Action Plan Released for Public Comment – Opportunity for Infrastructure and Planning Funding
- TXU Energy Urban Tree Farm and Education Center
- Estimating the Health Benefits per-Kilowatt Hour of Energy Efficiency and Renewable Energy

https://www.nctcog.org/stay-informed?ext=.

Go Solar Texas

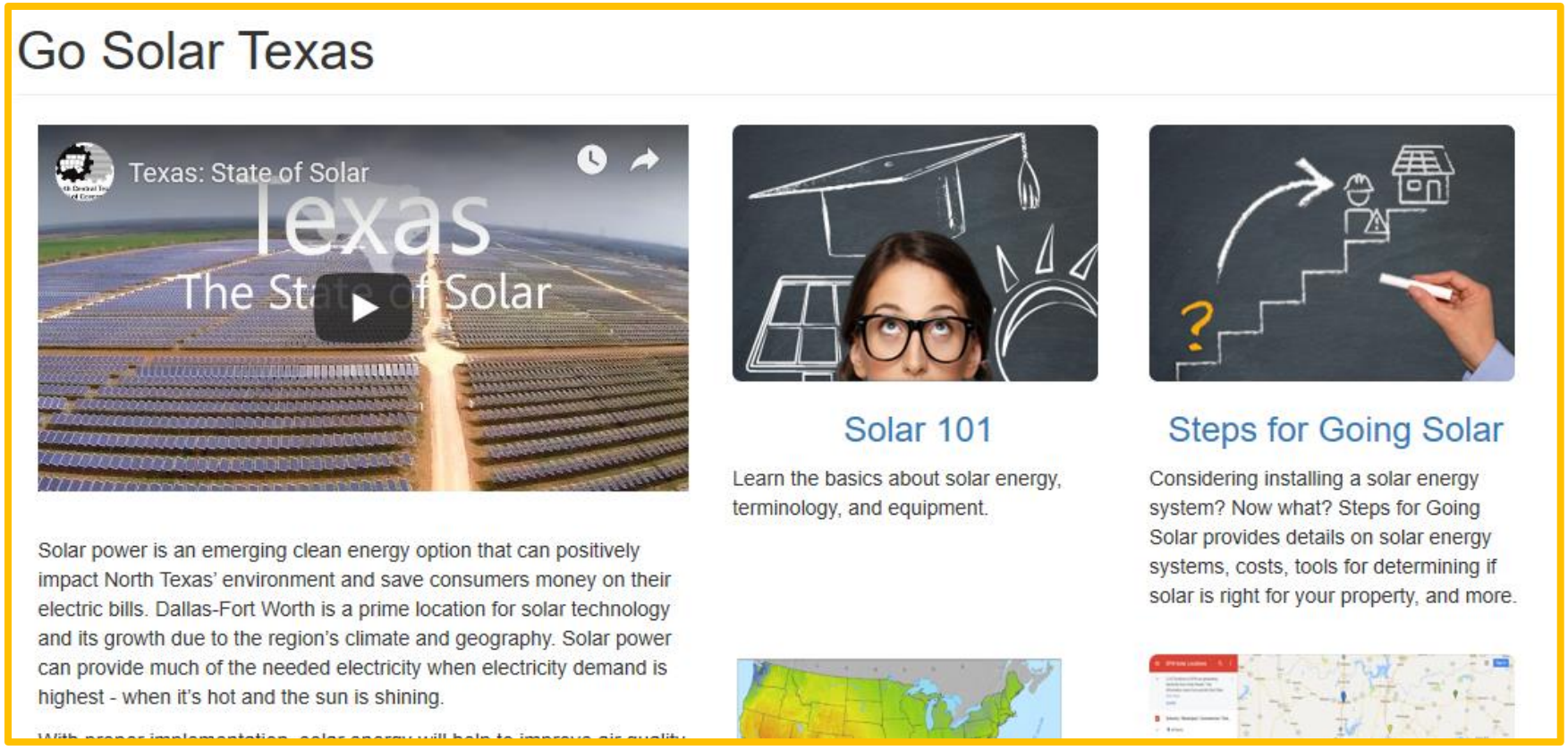
Texas-Specific Information about Solar

Key Resource Types

- Best Management Practices
- Cost Benefit Analysis
- Trainings
- Case Studies
- Meeting-in-a-Box

GO SOLAR

www.gosolartexas.org



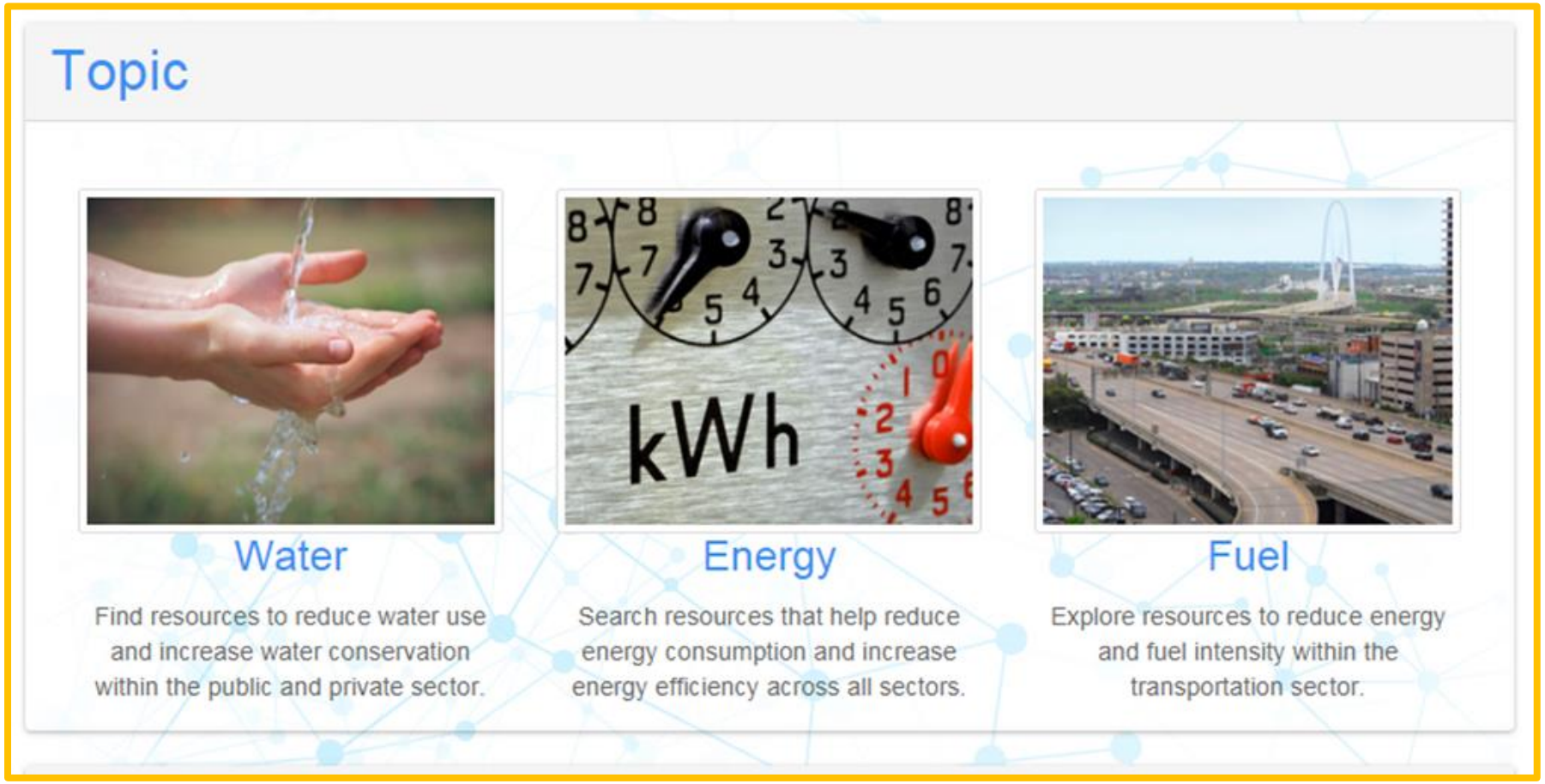
Conserve North Texas

Clearinghouse of Energy Efficiency, Water Conservation, and Transportation Resources

Resource Types:

- Programs
- Tools
- Calculators
- Case Studies

www.conservenorthtexas.org



SolSmart Resources

What is SolSmart?

- Designation program for cities, counties and regional organizations across the country to be recognized for fostering the development of local solar markets

Resources Include:

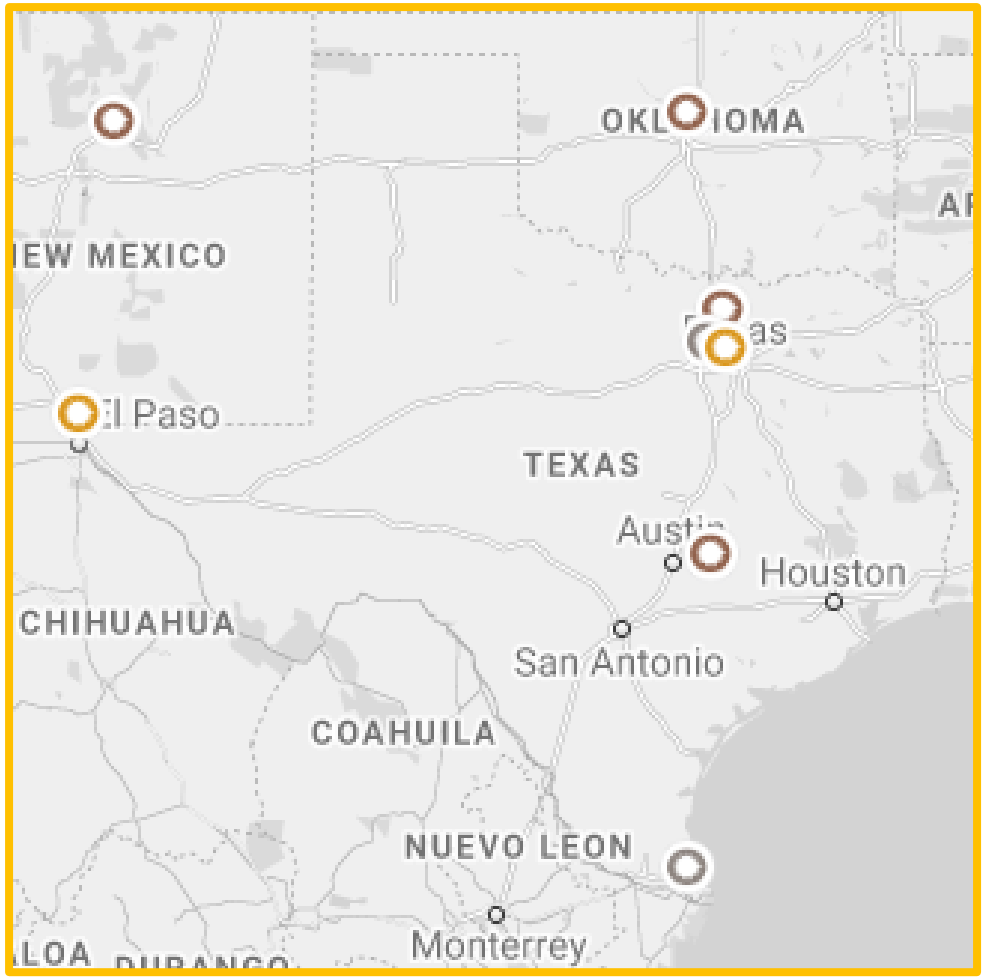
- ❑ Webinars
- ❑ Toolkits
- ❑ Planning tools
- ❑ Permitting tools
- ❑ Construction codes

And much more!

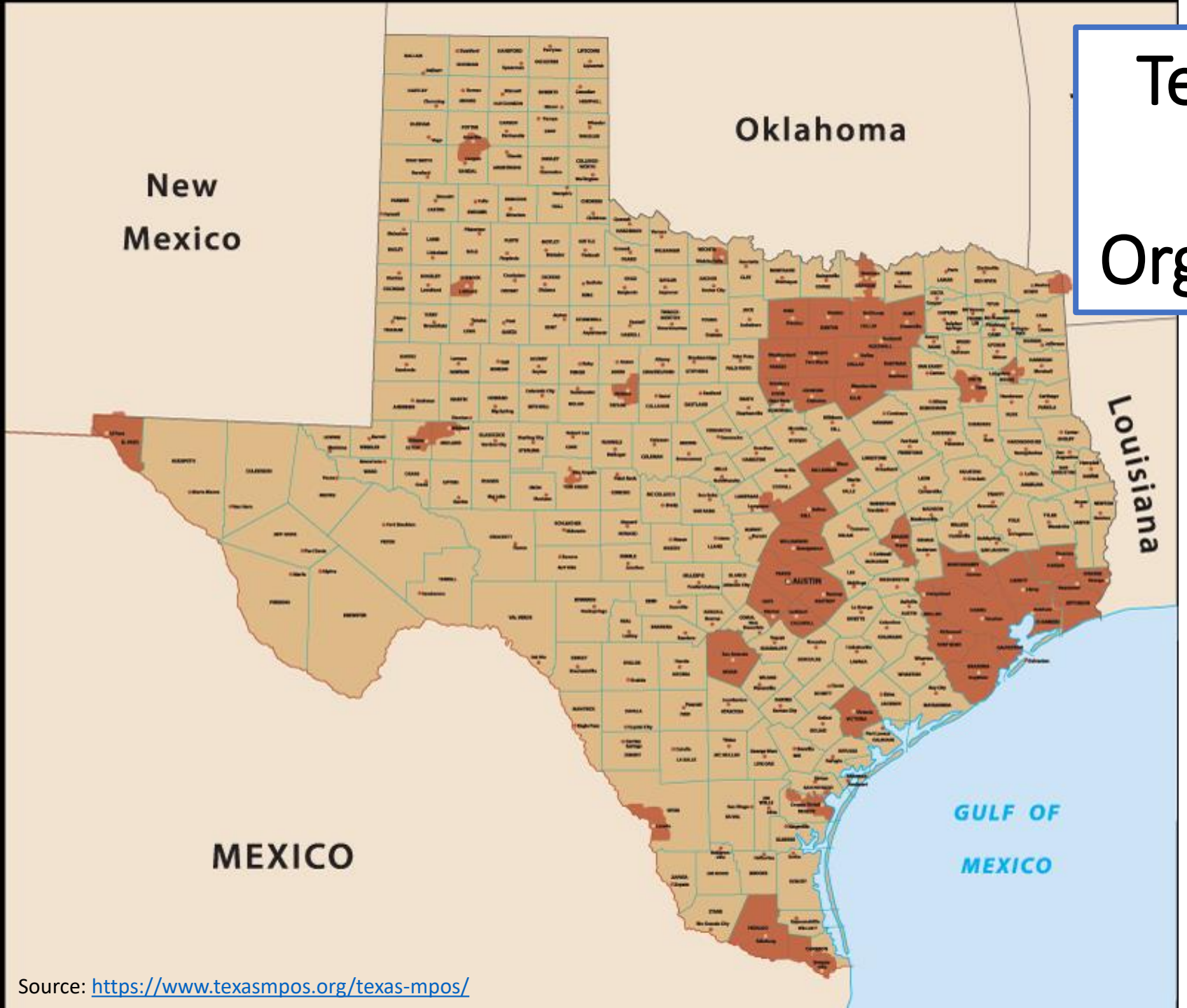
www.solsmart.org

Source: https://www.solsmart.org/

SolSmart Designated Texas Cities

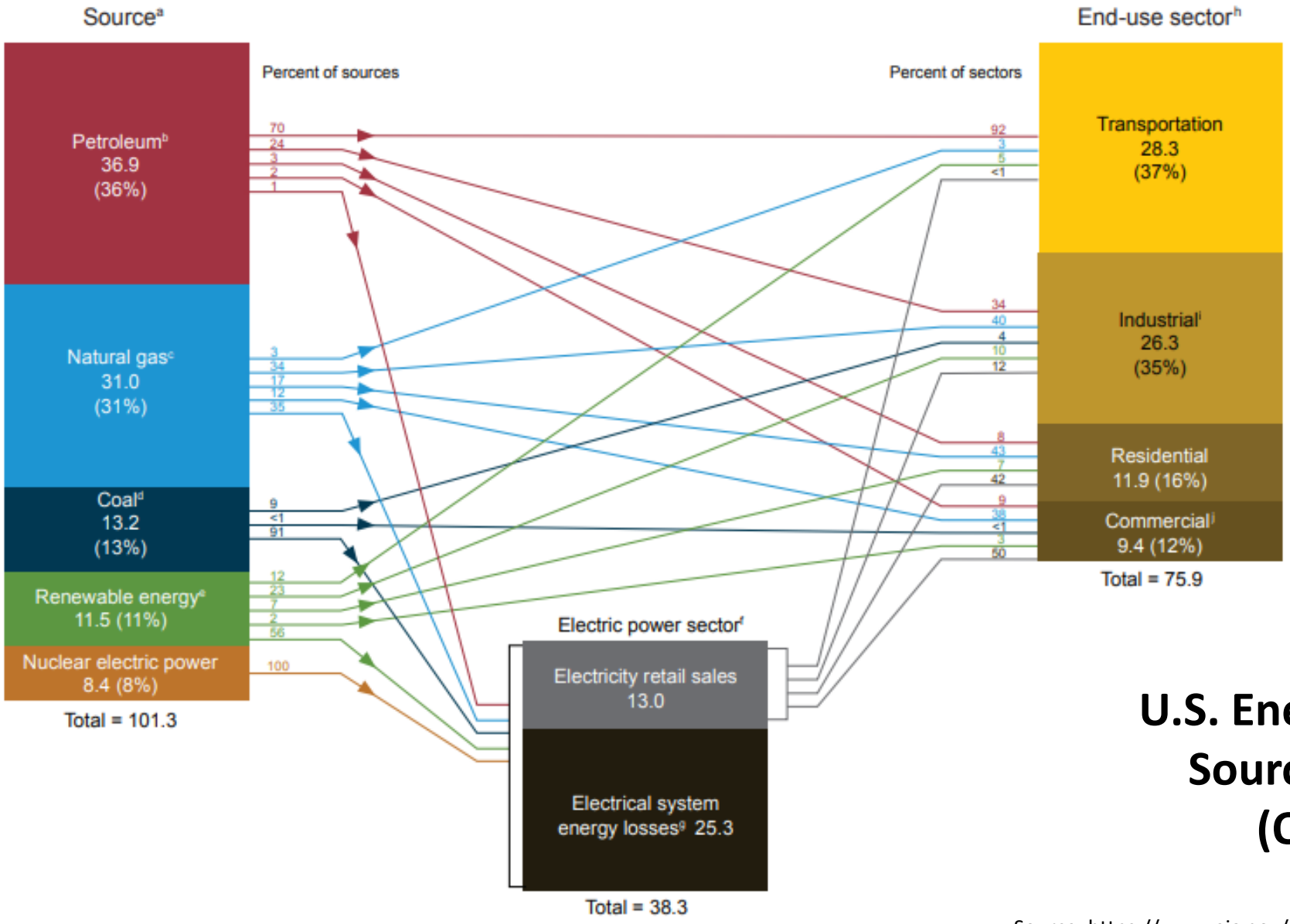


Texas Metropolitan Planning Organizations (MPOs)



Source: https://www.texasmpos.org/texas-mpos/

Transportation as Part of the Energy Economy



Transportation Energy is 37% of Total Energy Consumption

U.S. Energy Consumption by Source and Sector 2018 (Quadrillion Btu)

Source: https://www.eia.gov/totalenergy/data/monthly/pdf/flow/css_2018_energy.pdf

Dallas Fort Worth Clean Cities Coalition

Created by the Department of Energy to Address the Requirements of the Energy Policy Act of 1992

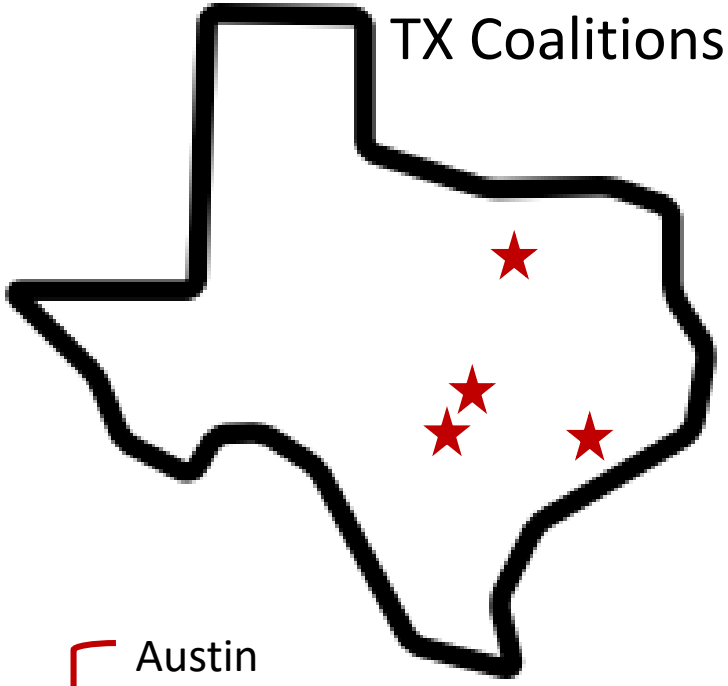
Part of a national network of nearly **100 coalitions**

To advance the nation's economic, environmental, and energy security by working locally to advance affordable, domestic transportation fuels and technologies

Partners with **public** and **private fleets**

Alternative fuel neutral with primary focus on **reducing ozone**

One of four TX Coalitions!



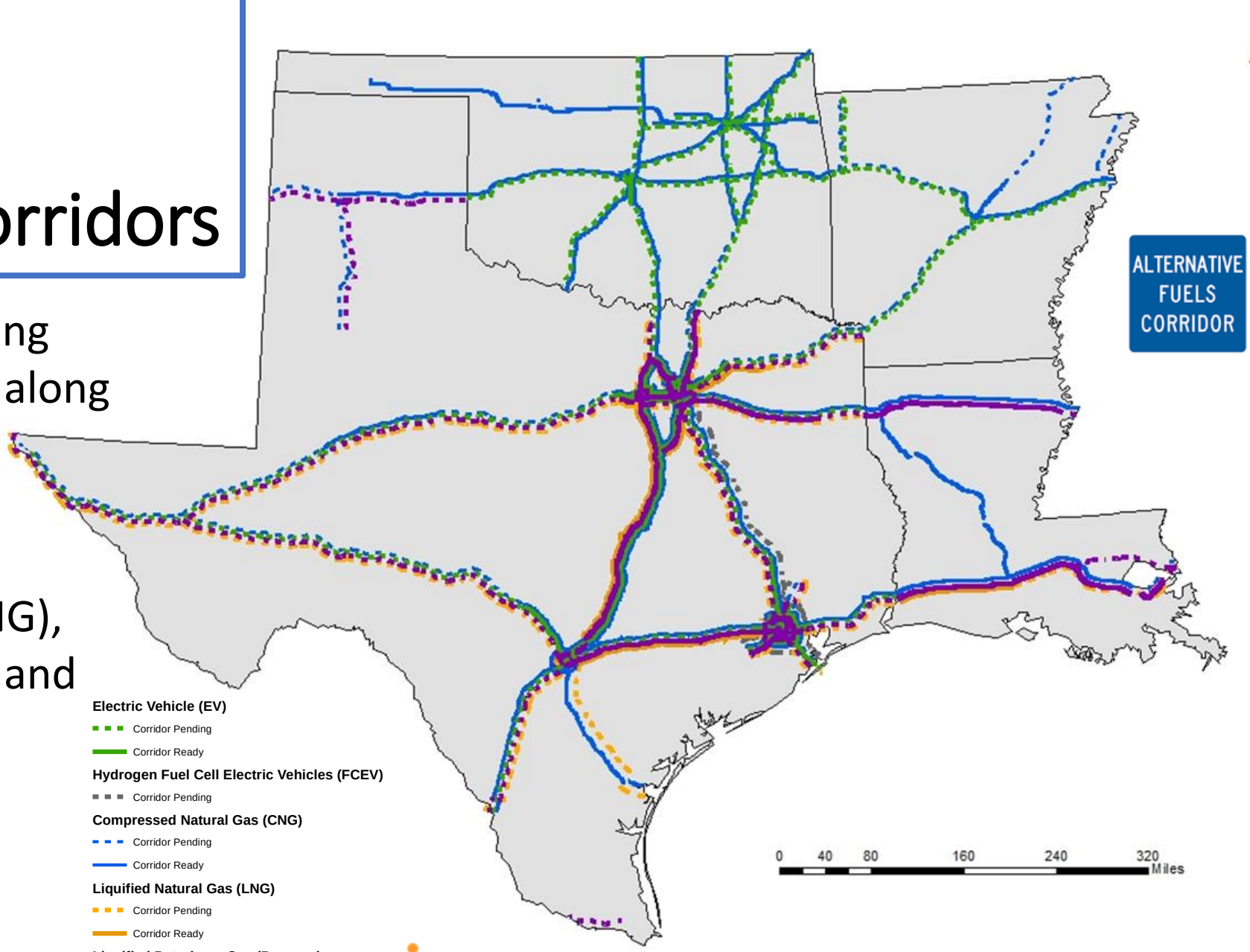
- Austin
- Dallas-Fort Worth
- Houston-Galveston
- San Antonio

www.dfwcleancities.org

Dallas-Fort Worth CLEAN CITIES

Federal Highways Administration: Alternative Fuel Corridors

- Network of alternative fueling and charging infrastructure along national highways system corridors
- Includes electric, hydrogen, compressed natural gas (CNG), liquefied natural gas (LNG), and propane



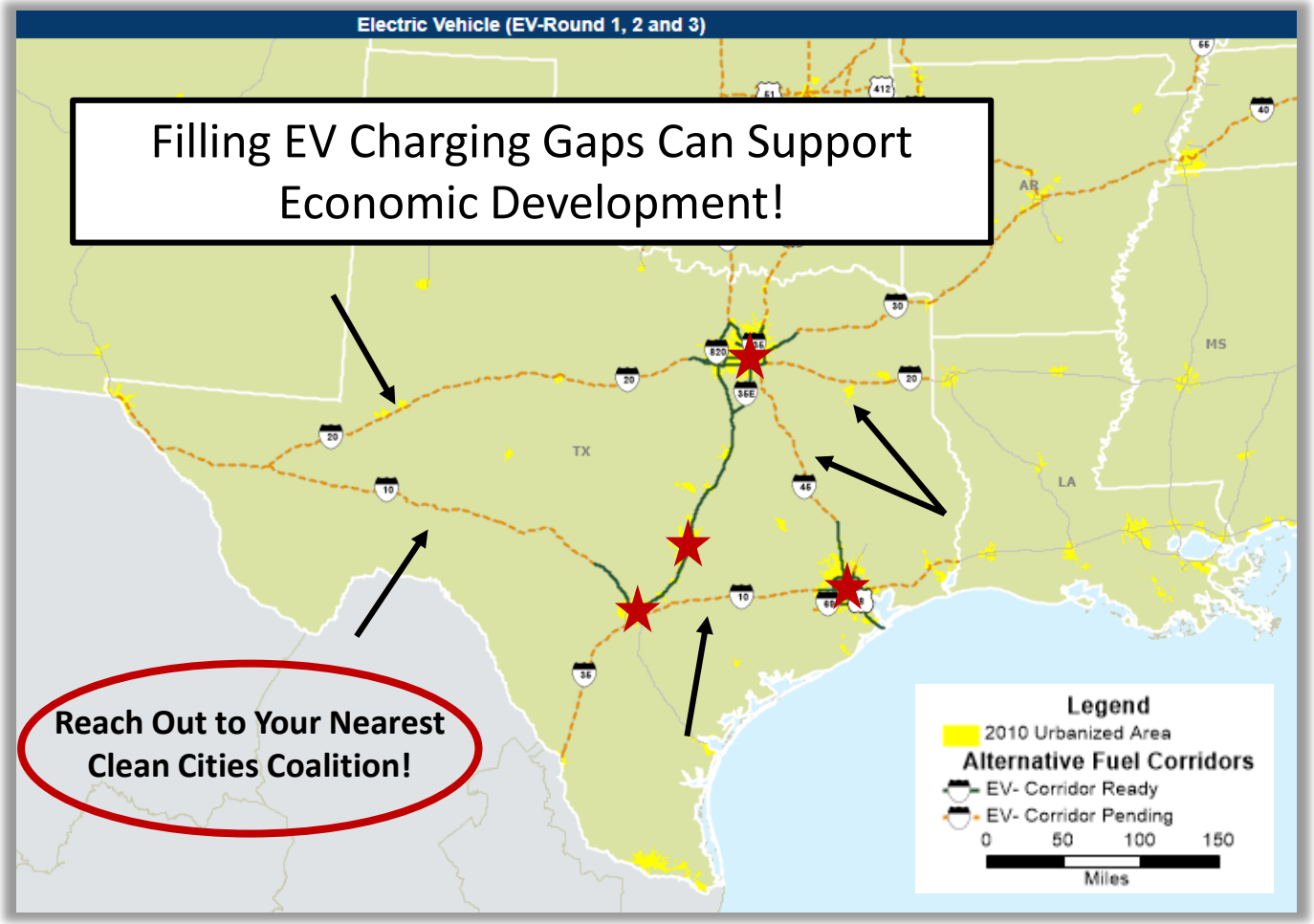
Source: https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/

Data Downloaded from FHWA Website and AFDC Station Locator

Volkswagen Funding & Alternative Fuel Corridor Development

To prepare for light-duty zero emission vehicle (ZEV)* deployment across Texas, the Volkswagen Environmental Mitigation Trust Agreement includes a goal to fund ZEV infrastructure statewide.

The TCEQ will consider funding for charging infrastructure along major transportation corridors of Texas.



Other Resources

https://comptroller.texas.gov/programs/seco

Programs

SECO State Energy Conservation Office

STATE ENERGY CONSERVATION OFFICE

SECO partners with Texas local governments, county governments, public K-12 schools, public institutions of higher education and state agencies, to reduce utility costs and maximize efficiency. SECO also adopts energy codes for single-family residential, commercial, and state-funded buildings.

Funding & Incentives

SECO Funding Opportunities
LoanSTAR Revolving Loan Program
Other Funding Resources

Programs

Alternative Fuels Program
Clean Energy Incubators
Industrial Energy Efficiency
Innovative Energy Demonstration Program
Local Governments Program
Schools Program
State Agency and Higher Ed. Program
Pantex Program
Watt Watchers

Energy Codes

Training & Code Compliance
Energy Code Adoption Process
Code Contacts
Commercial & Multi-Family Construction
Single-Family Construction
State-Funded Buildings
Local Ordinances
Texas Water Conservation Standards

Preliminary Energy Assessments (PEAs)

The **State Energy Conservation Office (SECO)** provides **preliminary energy assessments (PEAs)** at no charge to municipal and county governments, ISDs, county hospitals, port authorities, major airports, public water authorities and municipally-owned utilities.

PEAs recommend **cost-effective resource efficiency measures** that could be implemented to reduce utility consumption or utility costs.

Encourage entities in your region to perform a PEA!

Cities

- City of Denton (2018)
- City of Fort Worth (2015)
- City of Rockwall (2010)
- City of Richland (2007)

Water Districts

- Tarrant Regional Water District (2015)
- Trinity River Authority (2016)
- City of Fort Worth Water Production (2016)

- Ellis County (2004)

LoanSTAR Revolving Loan

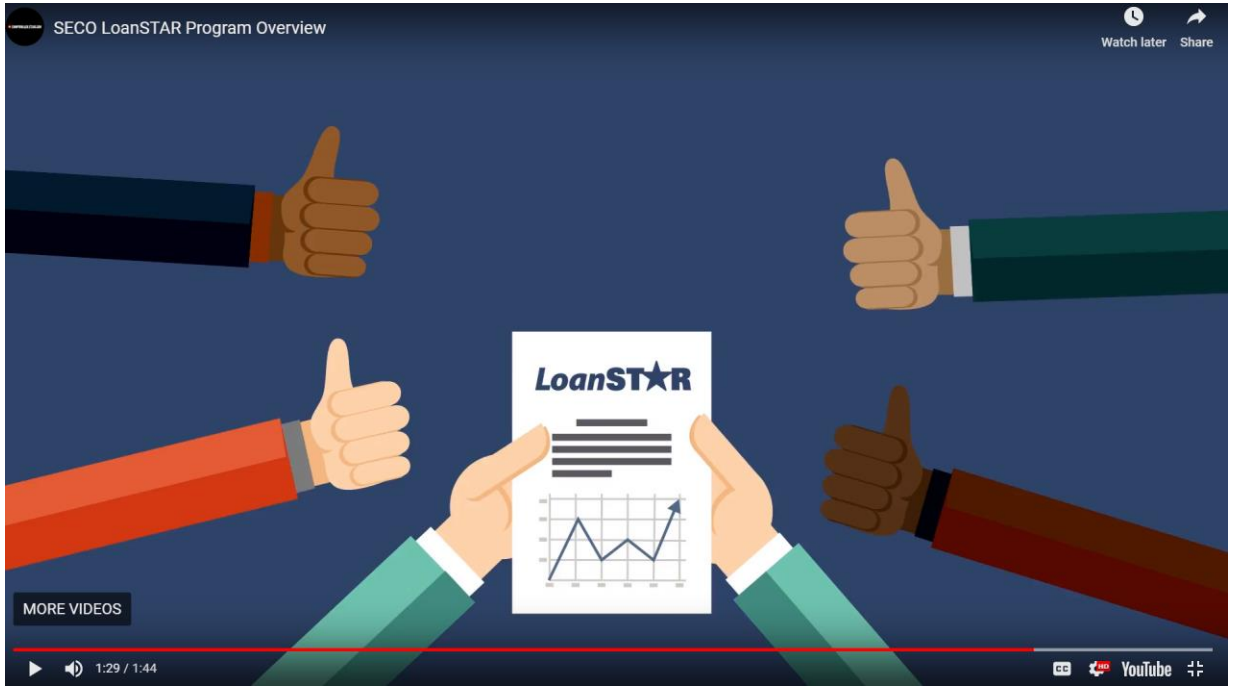
Finances Projects that Reduce Energy/Water/Utility Costs

- Simple Payback Period of **15 Years or Less**
- 2% Loan Interest Rate; 1% if Choose ARRA Funds with More Reporting

SECO
State Energy Conservation Office

Open Enrollment Through **August 30, 2020**

- Maximum $8 Million Loan Per Application
- Maximum 3 Loans per Entity



Other Funding & Incentives

Database of State Incentives for Renewable Energy:
Local, Utility, State, Federal
www.dsireusa.org

DSIRE®

Texas Department of Agriculture:
City Population < 50,000; County Population <200,000
Water / Wastewater infrastructure; Street / Drainage; Housing
Awards Range from $75,000 - $800,000
www.texasagriculture.gov/GrantsServices

TEXAS DEPARTMENT OF AGRICULTURE
COMMISSIONER SID MILLER

Texas Water Development Board:
Financial Assistance Programs
Loans, Grants, Deferred Interest, Combination Grant/Loan
Political Subdivisions, non-profit and Community Water Supply Corporations, Private
www.twdb.texas.gov/financial/programs

Texas Water Development Board

FOR MORE INFORMATION

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Senior Program Manager
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tcook@nctcog.org

Bailey Muller

Senior Air Quality Planner
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Dorothy Gilliam

Air Quality Planner
Transportation Department
(817) 704-5675

https://www.nctcog.org/envir/natural-resources/energy-efficiency

North Central Texas
Council of Governments