



KANE COUNTY, ILLINOIS

ESTABLISHED JANUARY 16, 1836

Kane County Climate Action Implementation Plan

Community Input Meeting



Agenda

Introduction

The Project

Planning Process

Climate Action Baselines

Ways to Get Involved

Q + A

Preliminary Draft Strategic Goals

(please add your thoughts!)



Introduction



Our mission:
To hasten the transition to an authentically sustainable, no carbon economy and to elevate the public discourse.

Services:

climate planning

sustainability +
resilience consulting

renewable energy +
net zero planning



Colleen
Educator
Community
Engagement
Consultant
Climate Planner



Ted
Architect
Urban Planner
Renewable Energy
Consultant
Climate Planner

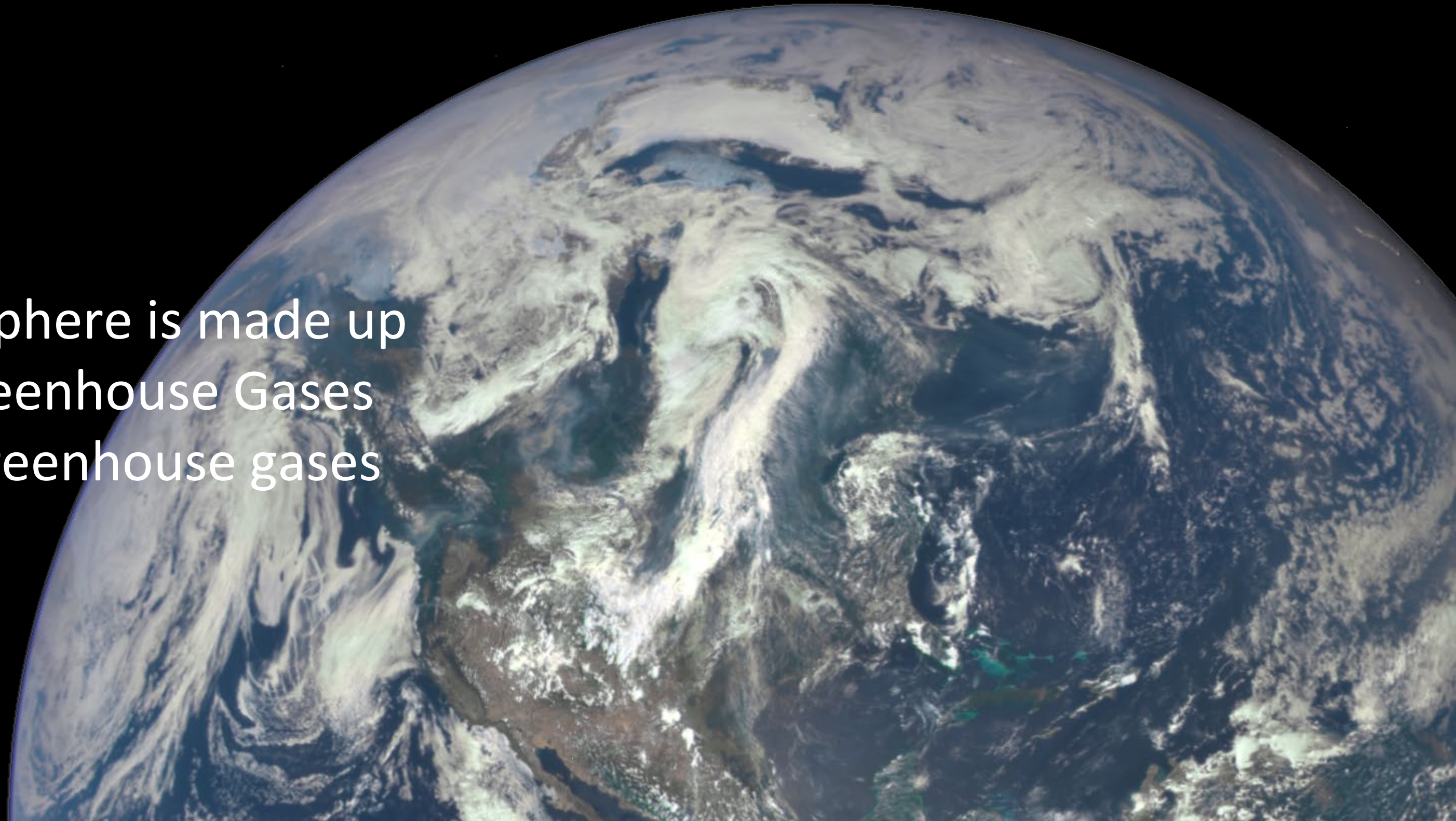


Introduction: Climate Change Drivers



The role of “Greenhouse gases”

Our atmosphere is made up of both Greenhouse Gases and non-greenhouse gases



Non-Greenhouse gases

Nitrogen: 78.09%

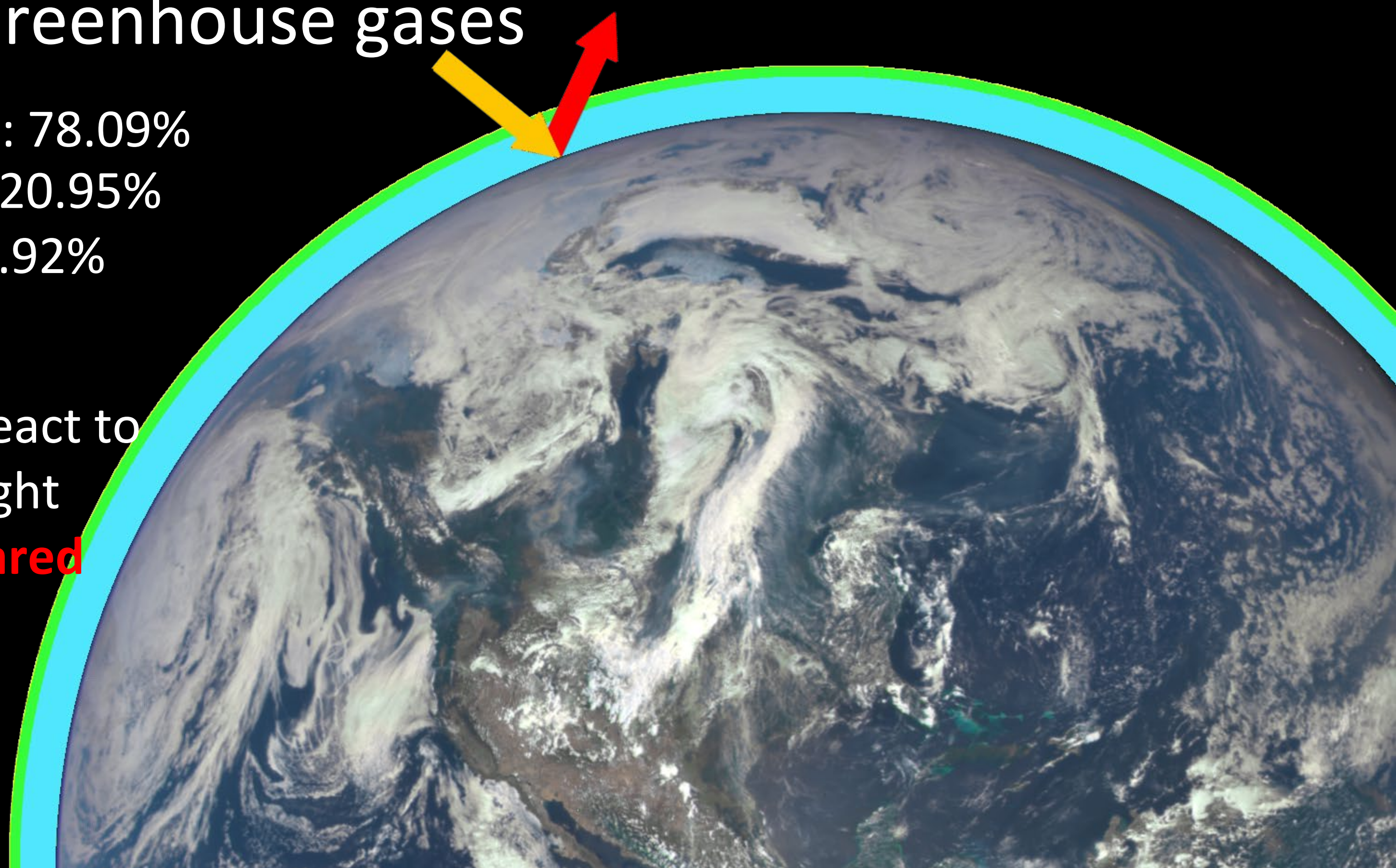
Oxygen: 20.95%

Argon: 0.92%

99.96%

Do not react to
visible light

Nor **Infrared**
energy.



Greenhouse gases (GHG)

Mostly Carbon Dioxide (CO₂)

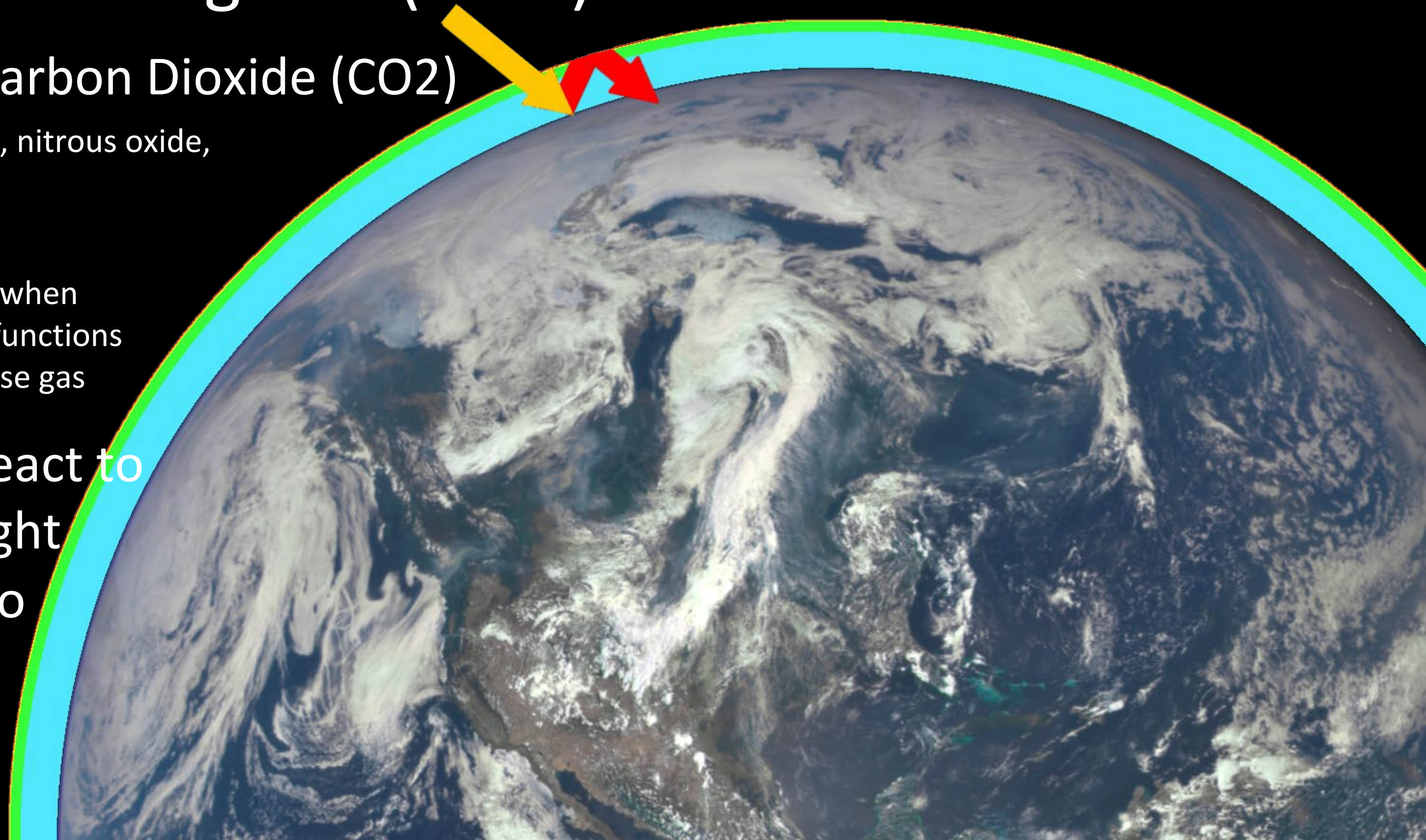
Also methane, nitrous oxide,
And Ozone.

0.04%

Water Vapor, when
present, also functions
as a greenhouse gas

Do not react to
visible light

But DO to
Infrared
energy.



Greenhouse gases (GHG)

A diagram illustrating the greenhouse effect. It shows a cross-section of Earth with a blue atmosphere. A yellow arrow points from the top left towards the Earth's surface. A red arrow points from the Earth's surface towards the atmosphere. A second red arrow points from the atmosphere back towards the Earth's surface. To the right of Earth is the Moon, which is labeled with a temperature of 0° F. The Earth's surface is labeled with a temperature of 59° F. The background is black, representing space.

This effect warms our planet

Without this effect Earth would have the Moon's temperature

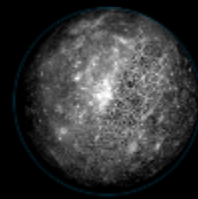
Because of Greenhouse gases, Earth's average temp has been: **59° F**

0° F

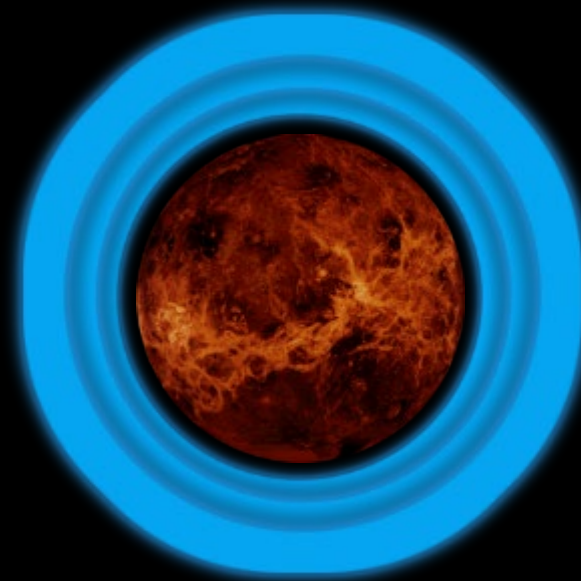
59° F



Mercury
333° F



Venus
+867° F



Earth
+59° F



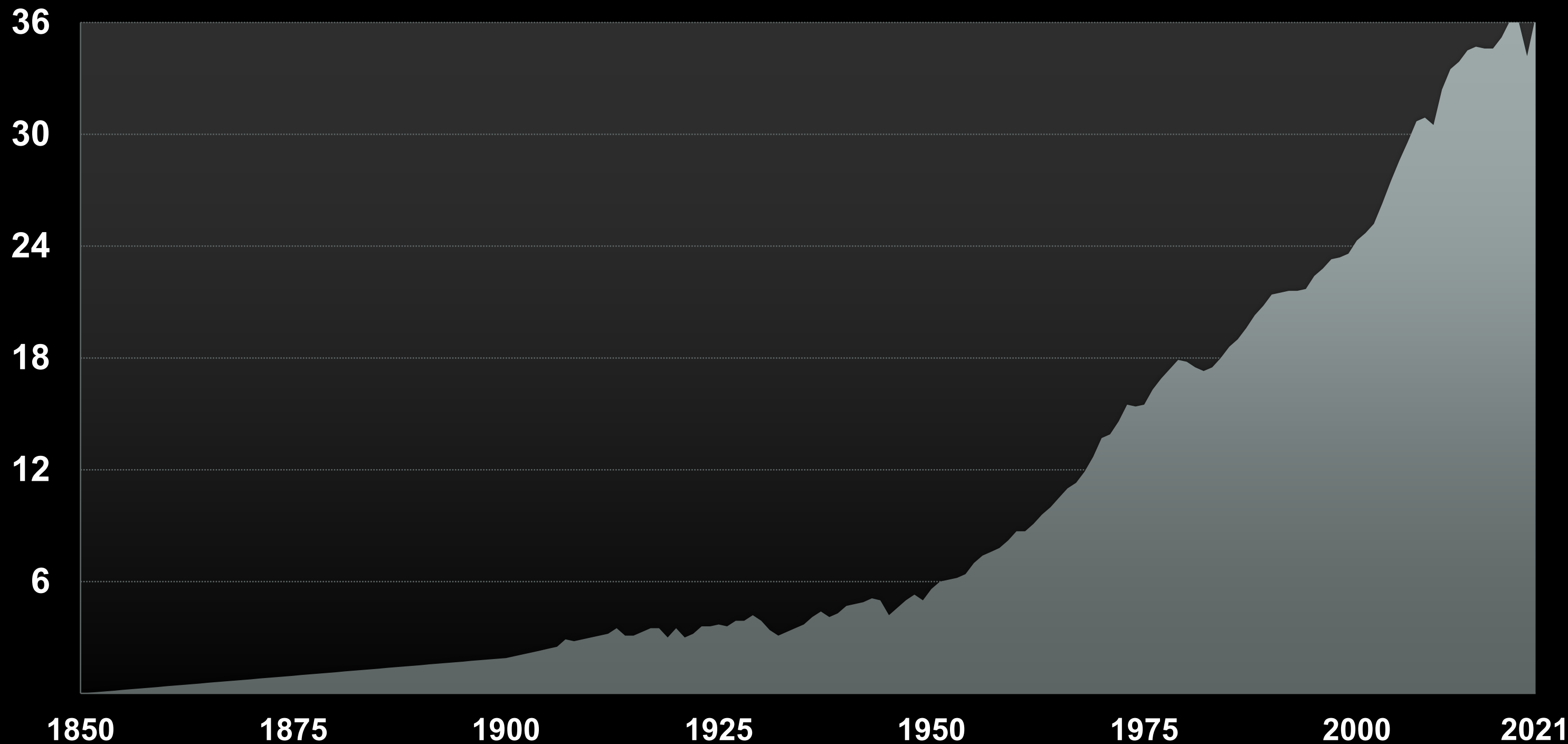
Mars
-85° F



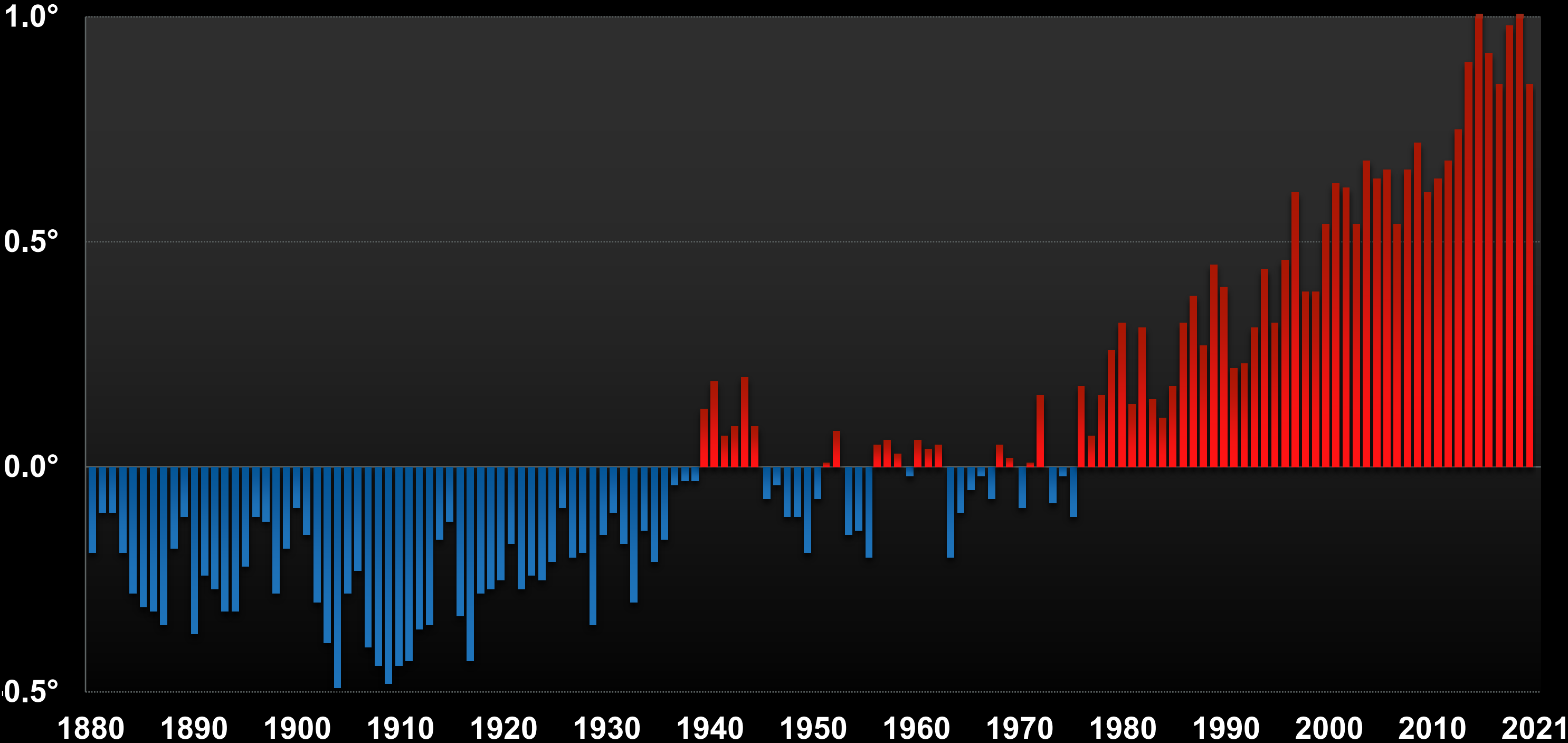
The Largest Source of Global Warming Pollution Is the Burning of Fossil Fuels.

**This extracts carbon locked in the
Earth's crust and releases it as
Greenhouse Gases - increasing the
total amount in our atmosphere.**

CO2 is Being Released Faster Than at Any Time in 66 Million Years

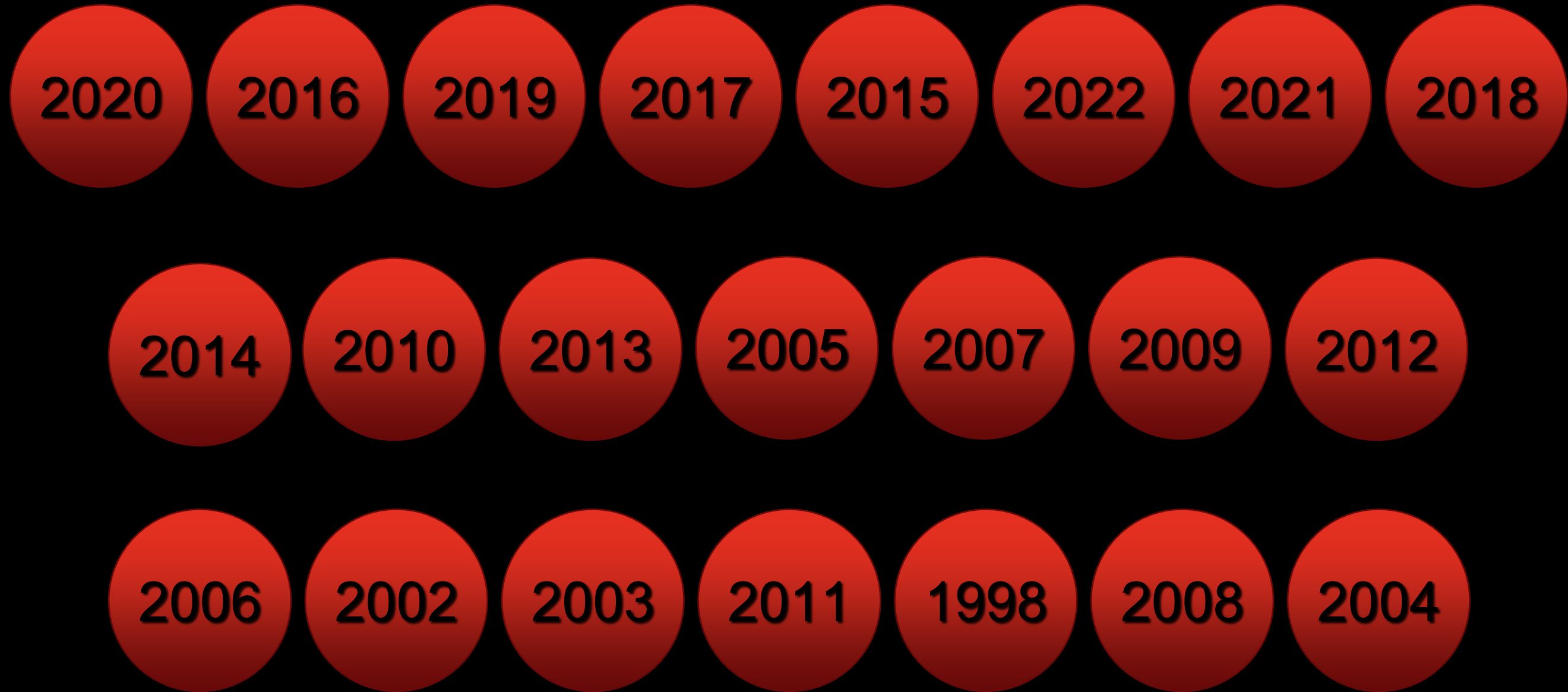


Global Surface Temperature – Departure from Average



The 2022 Hot Air Balloon Ride It's a Big One

Since the Year 2002



BONUS: Why I Don't Feel Depressed

We are entering an era of great opportunity...



...in public attitude

Americans are experiencing a “false social reality” that under estimates public support and interest in change*

- 66-80% of Citizens favor climate policies and action

But perception is the *opposite*

- Just 37-43% believe others hold the same views
- In Illinois, the average under-estimate of public support is at least **26%**

* “Americans experience a false social reality by underestimating popular climate policy support by nearly half”, Nature Communications, August 2022

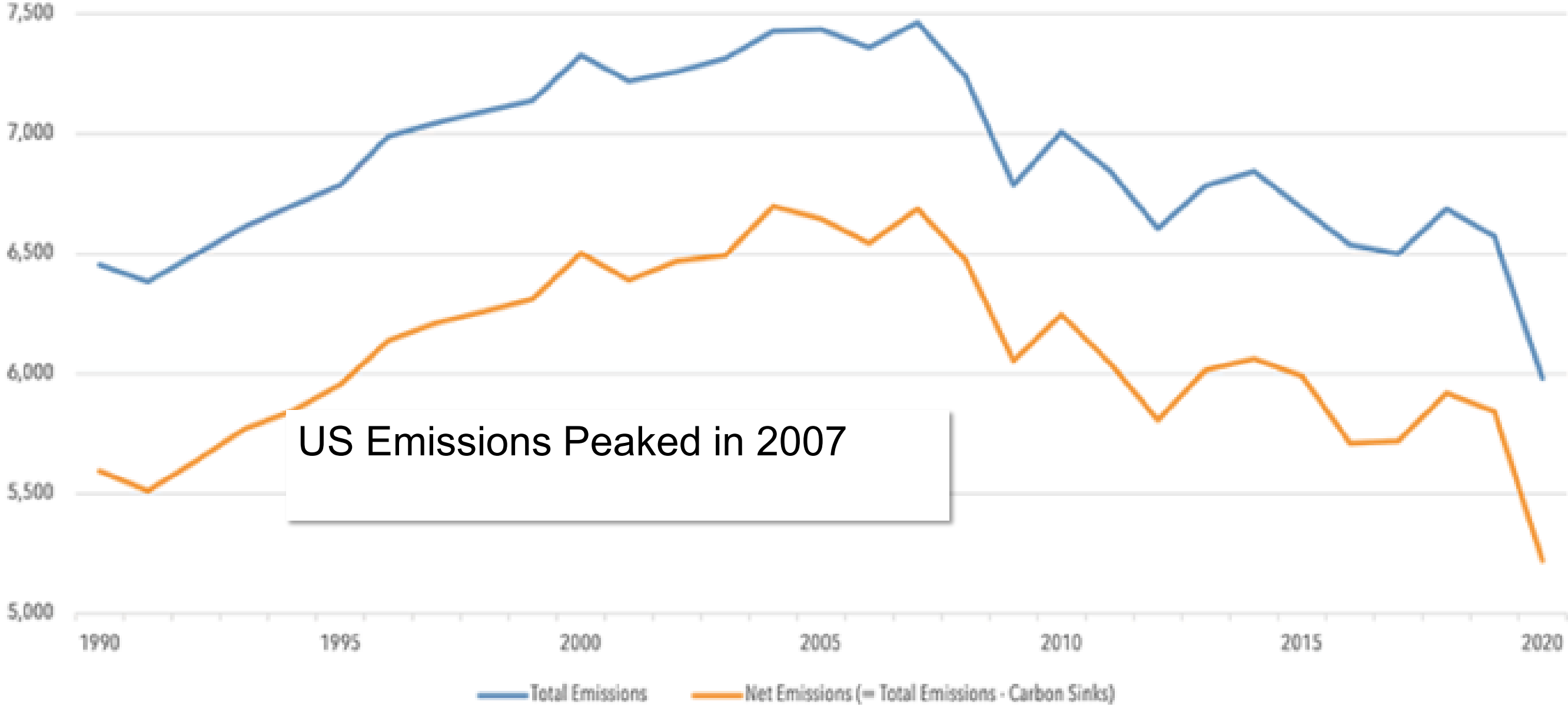


BONUS: Why I Don't Feel Depressed

We are entering an era of great opportunity...



...to build on success

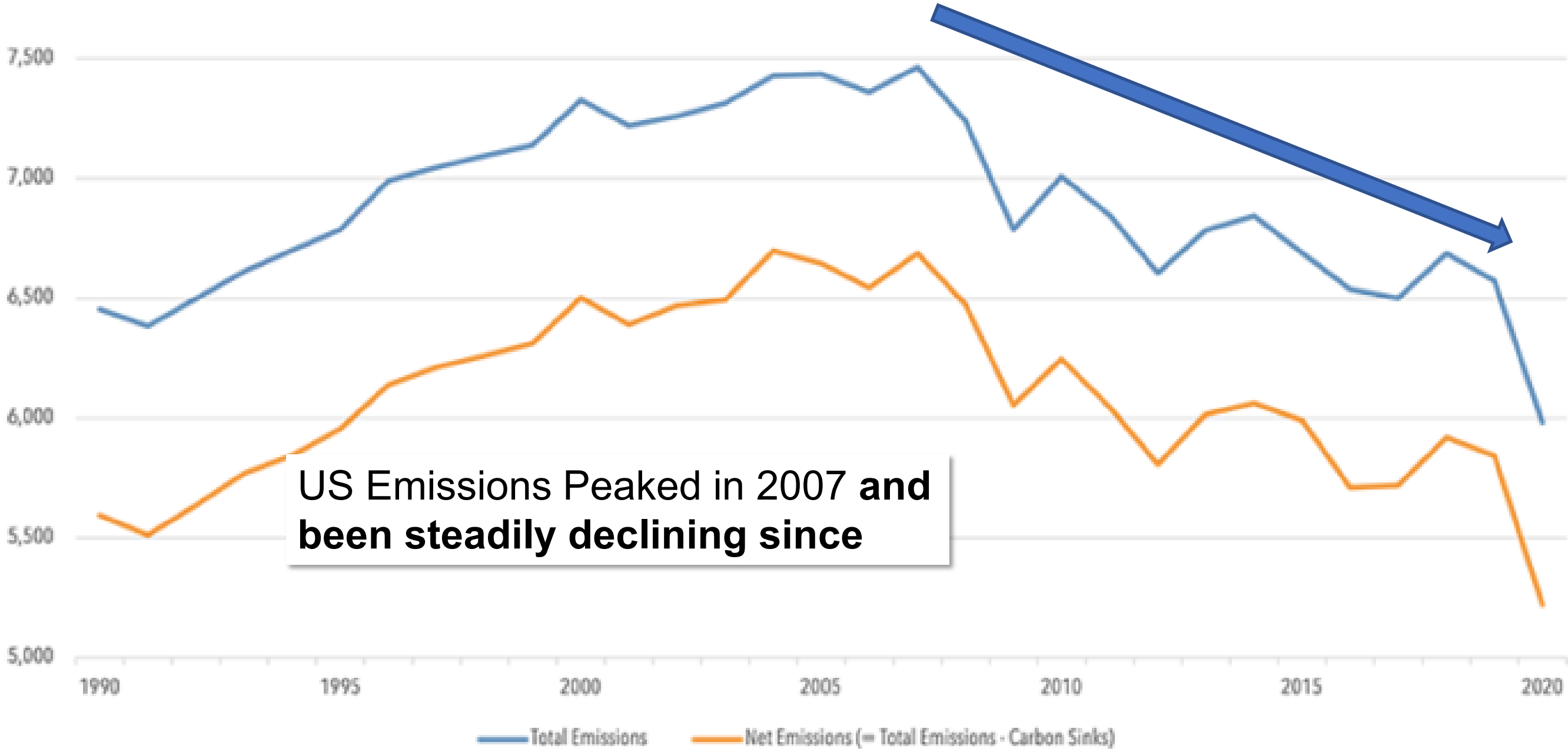


BONUS: Why I Don't Feel Depressed

We are entering an era of great opportunity...



...to build on success



BONUS: Why I Don't Feel Depressed

We are entering an era of great opportunity...



...to build on success

IPCC

Cities and Counties “with their concentration of people, economic activity and infrastructure — **are among the most powerful levers we have** to drive decarbonization and build resilience fast enough to meet the Paris goals.”

Cities alone can achieve

40%

of the mitigation goals outlined in the Paris Agreement²



BONUS: Why I Don't Feel Depressed

We are entering an era of great opportunity...



...to build on success

“Climate Action in local communities represents an opportunity to leverage **\$24 Trillion in benefits by 2050 while reducing emissions by 90%**” *World Resources Institute*



The Project

Why Are We Here:

The Project

Develop a Climate Action Implementation Plan (CAIP) for Kane County –
Intended to **guide action county-wide as well as County Operations.**

The planning process will review and establish overall **goals** as well as
establish **strategies and actions to achieve the goals.**



The Project

What Is A Climate Action Plan:

Climate action plans are comprehensive roadmaps that outline the specific Strategies and Actions that a community will implement to reduce greenhouse gas emissions related climatic impacts.

The Kane County CAIP **will address climate mitigation and adaptation:**

Mitigation – reducing climate change – involves reducing the flow of heat-trapping greenhouse gases into the atmosphere (supporting goals of joint declaration).

Adaptation – developing ways to protect people and places by reducing their vulnerability to climate impacts (supporting guiding principals).



The Project

What Is A Climate Action Plan:

Community-wide plans typically address broad climate action sectors:



Mitigation
(and some adaptation)



Adaptation
(and some mitigation)



Planning Process

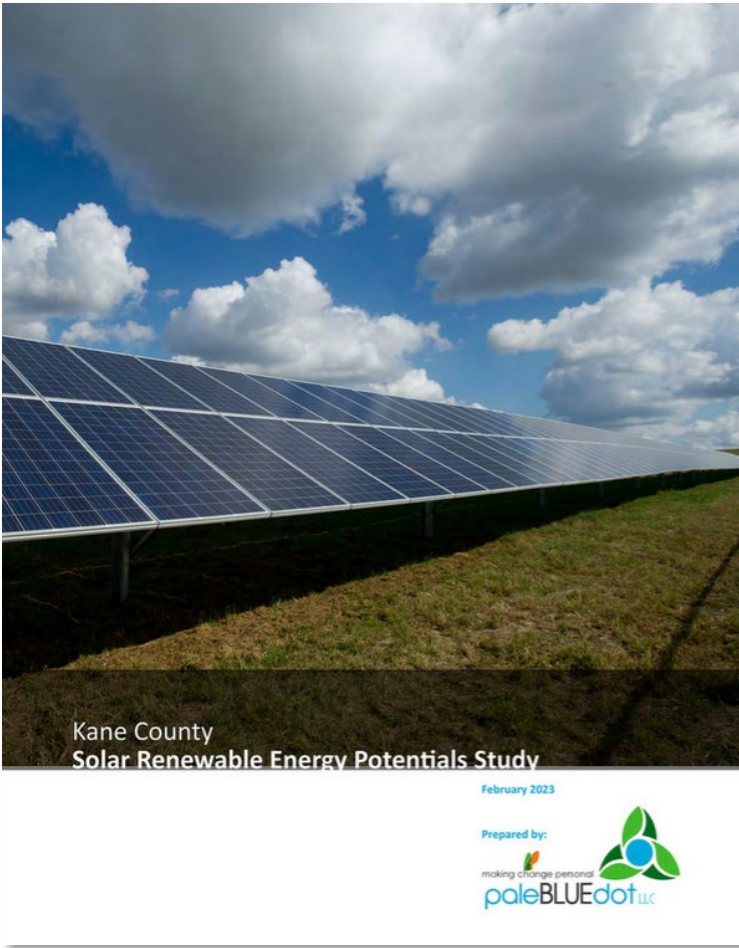
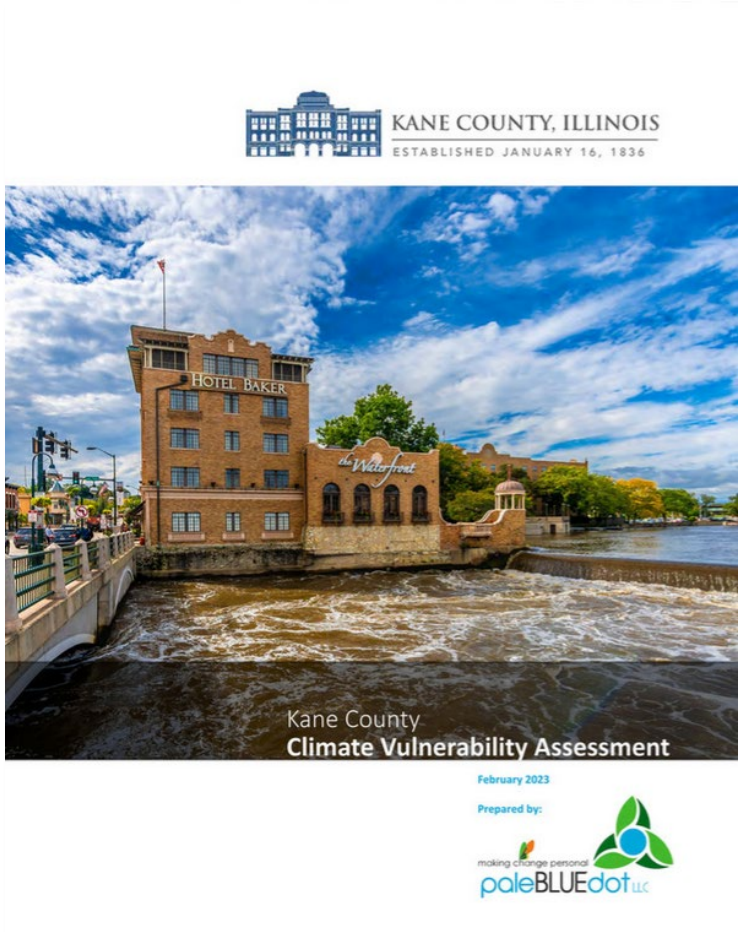
Climate Action Baseline Documents

Vulnerability Assessment

GHG Inventory and Forecast

Ground Cover Survey

Renewable Energy Potential



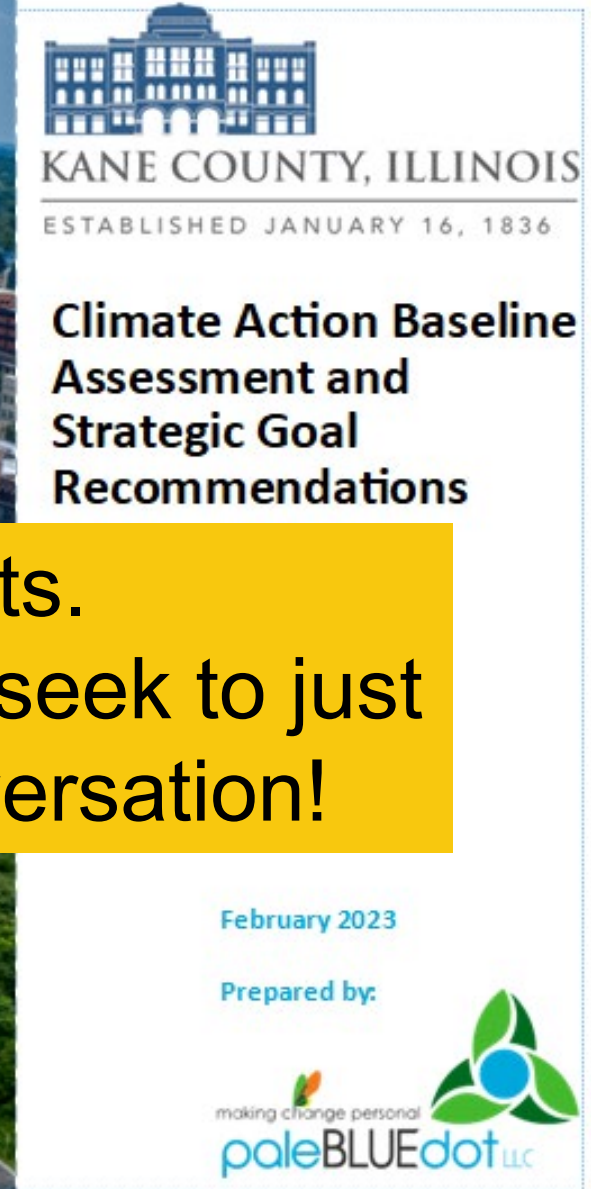
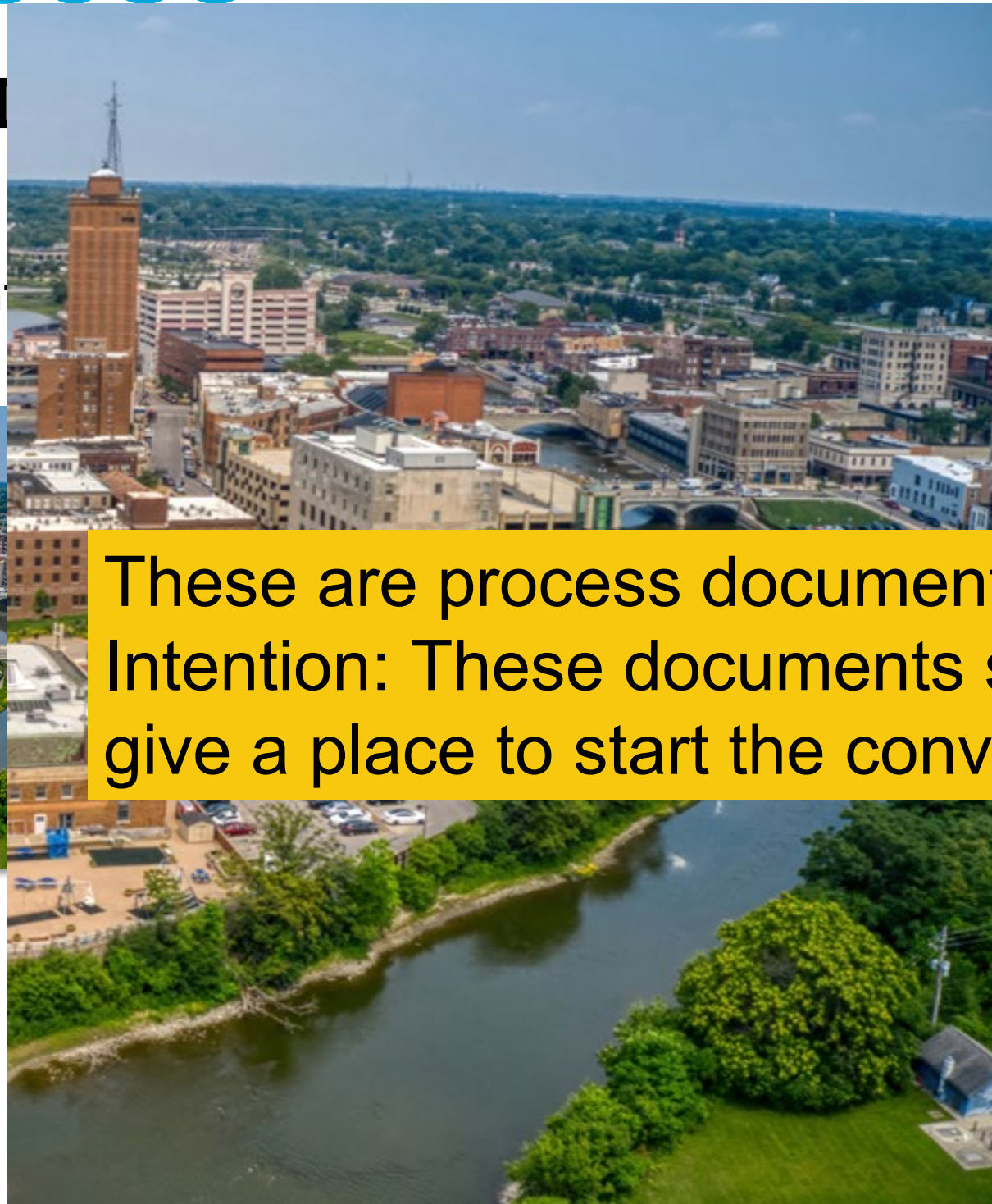
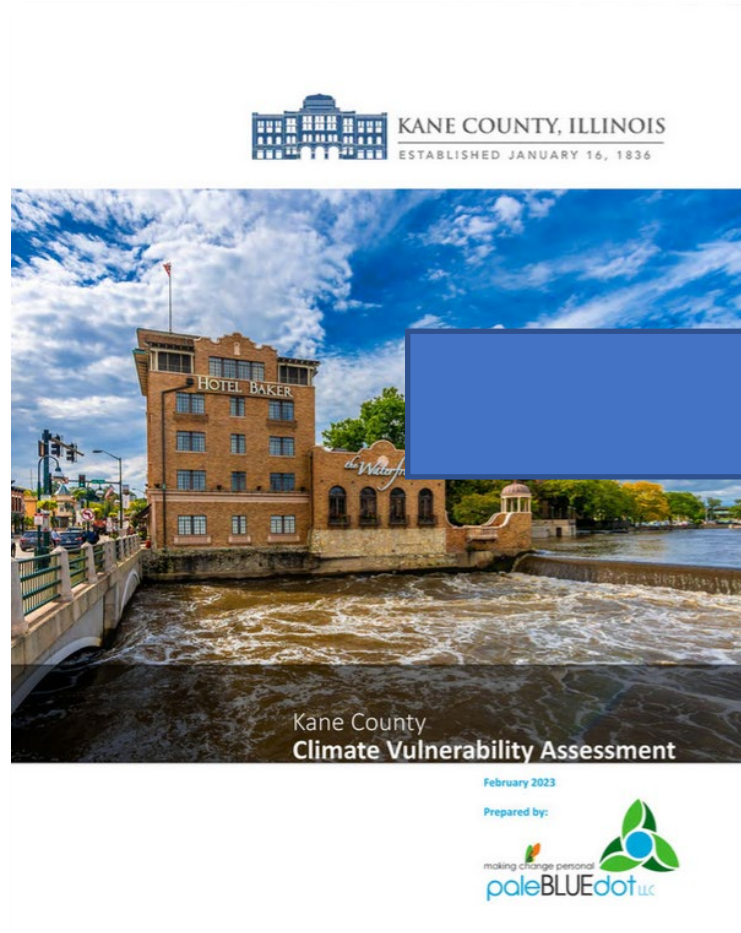
View these process documents here:
<https://palebluedot.llc/kane-climate-action>

Planning Process

Climate Action Baseline I

Vulnerability Assessment

GHG Inven
Forecast



These are process documents.
Intention: These documents seek to just give a place to start the conversation!



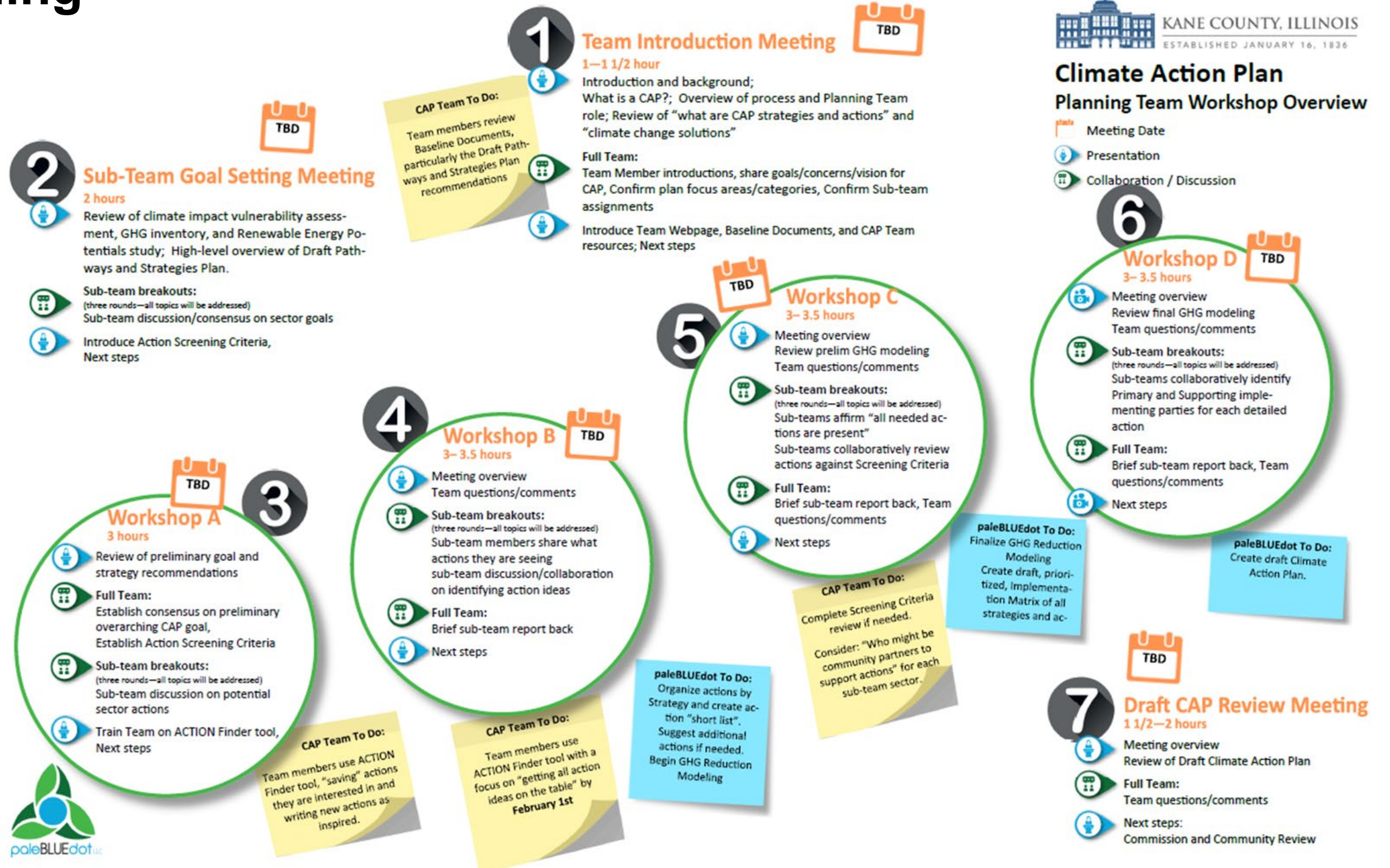
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Planning Process

Collaborative Planning

Collaborative Multi-Stakeholder Team Co-Authored Plan

Organized into sub-teams by CAP topic



Climate Action Plan Planning Team Workshop Overview

Planning Process

Community Engagement

Phase 1 Pre-Planning Input

Community Engagement Meetings

- Community-wide meetings

Online Surveys

- Broad input on sustainability concerns / interests / ideas

Phase 2 – Draft Plan Review

Community Draft Plan Forums

- Community-wide meetings

Online Review and Comment

- Review Webpage
- Comment Survey



Planning Process

Schedule

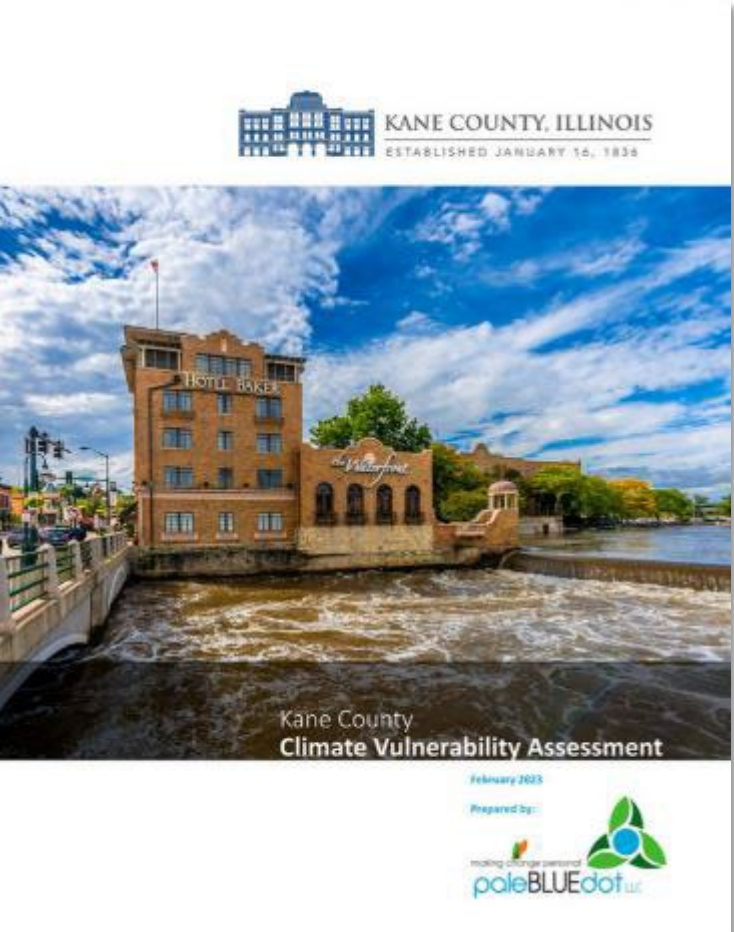
Task	Timeline*
Project Kick-off	Nov 2022
Existing Conditions Documentation and Assessment	Nov 2022 - Mar 2023
Community Engagement (survey, community sessions)	Feb 2023 - June 2023
Climate Action Plan Team Engagement	April 2023 - Oct 2023
Draft Sustainability Plan Development	Sept 2023 - Oct 2023
Community Engagement (Draft Plan Review)	Nov 2023 - Dec 2023
Implementation Support Tools Development	Nov 2023 - Dec 2023
Finalize Sustainability Plan	Dec 2023



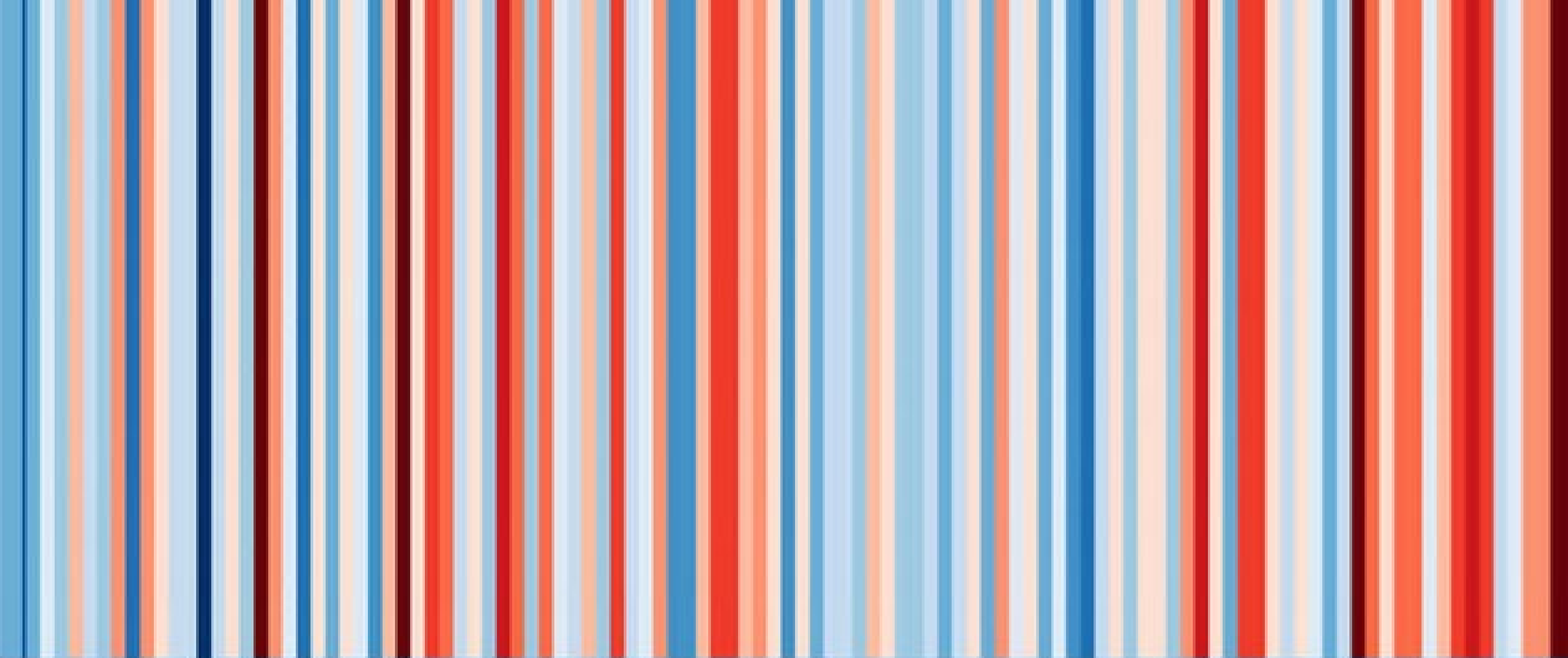


Climate Action Baseline

Vulnerability Assessment



Climate Action Baseline

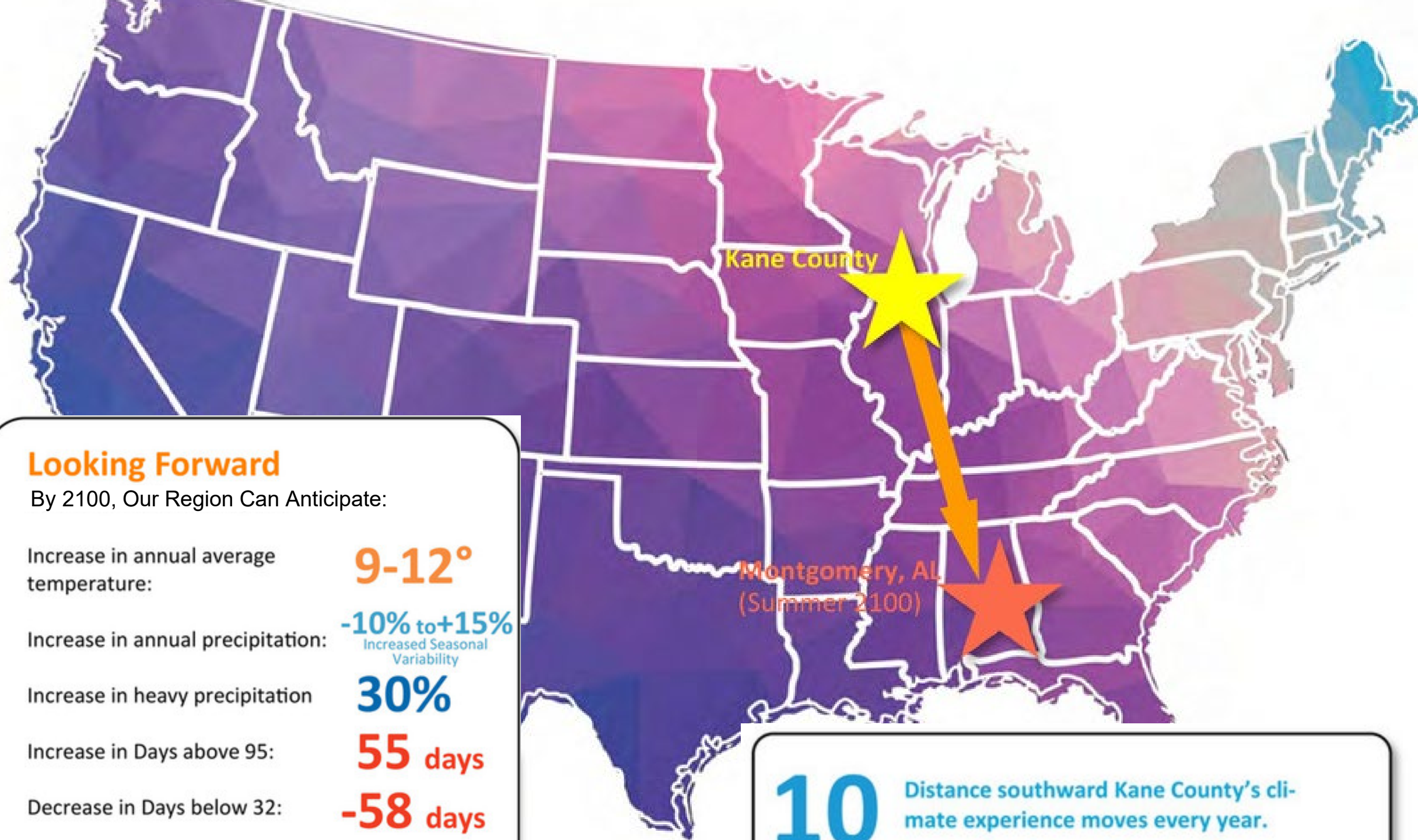


← 1895

Illinois's Annual Temperature Trends

2021 →

Each stripe represents the temperature Illinois averaged over a year. Blue = Below Average Red = Above Average



Looking Forward

By 2100, Our Region Can Anticipate:

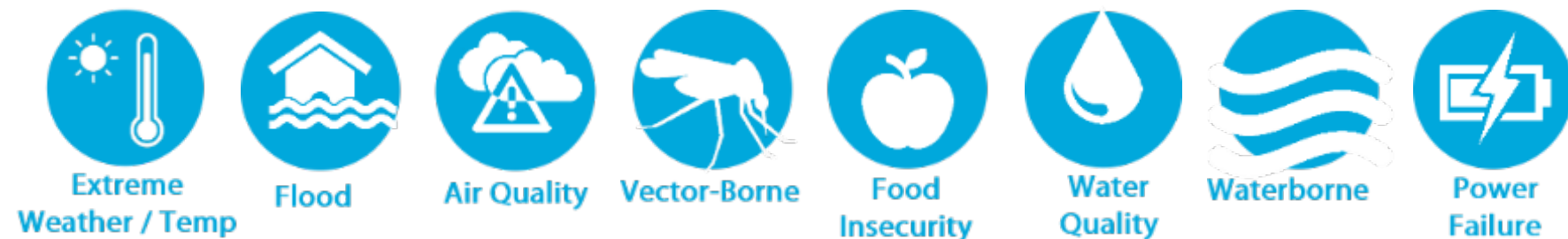
Increase in annual average temperature:	9-12°
Increase in annual precipitation:	-10% to +15% <small>Increased Seasonal Variability</small>
Increase in heavy precipitation	30%
Increase in Days above 95:	55 days
Decrease in Days below 32:	-58 days
Increase in growing, allergy, and insect season:	59 days
Increase in Air Conditioning Demand:	160%

10 Miles Distance southward Kane County's climate experience moves every year.

Which is equal to moving **145 Feet** every day



Primary Climate Risks



Climate Related Economic Risks



Community Groups Most Vulnerable



Primary Climate Risks



Climate Related Economic Risks



Community Groups Most Vulnerable



Projected Economic Impacts of Climate Change

Climate Related Economic Risks



Crop Yield



Mortality



Energy Costs



Property
Crime



Violent Crime

Total Projected Economic Impacts Through 2100

According to research completed for “Estimating economic damage from climate change in the United States”, the total annual economic costs for Counties in Kane County by 2100 will be:

\$408,000,00 annually (2019 dollars)*

* Value does not include potential increased property damage nor increased healthcare costs due to extreme weather events.

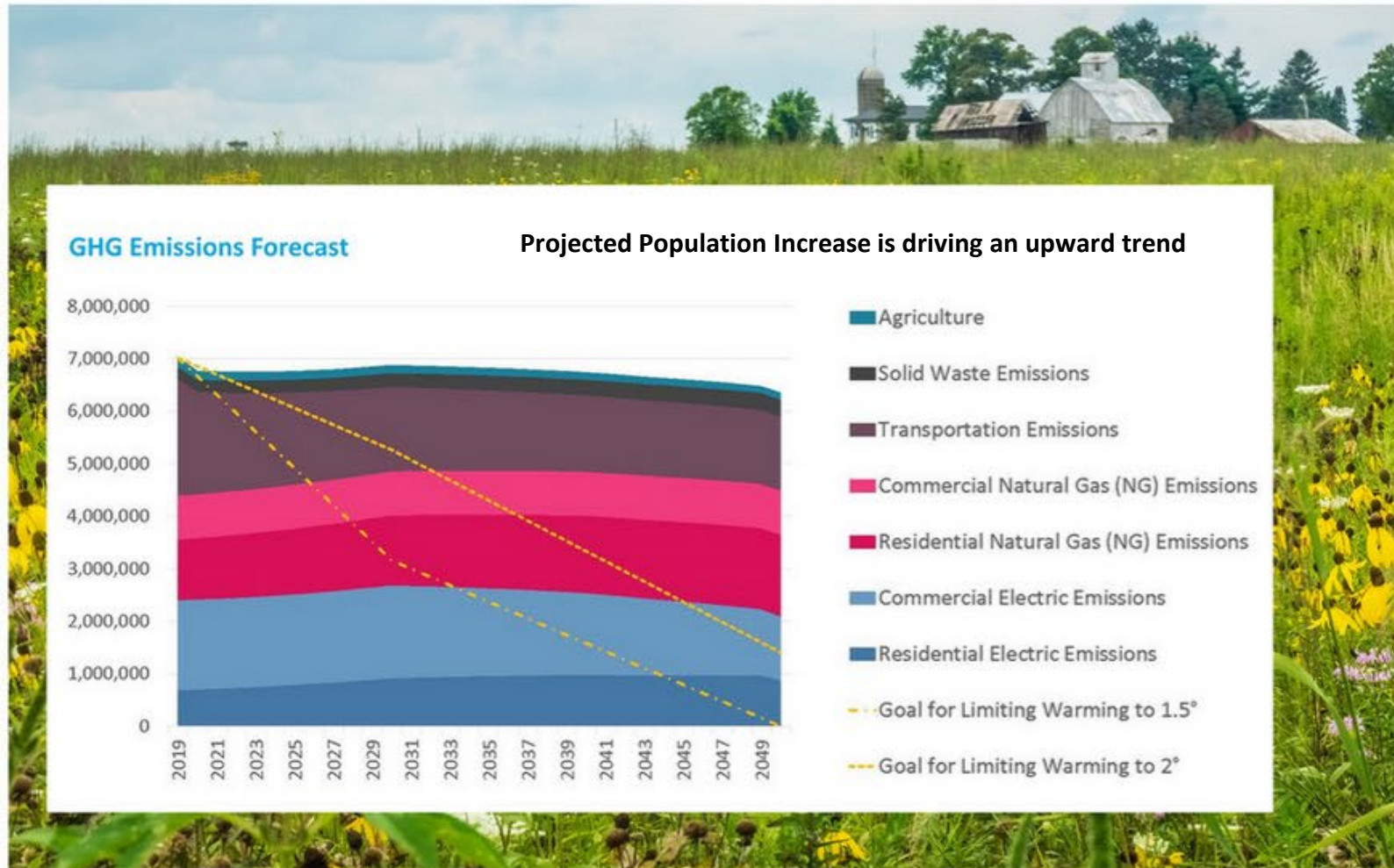


Climate Action Baseline

GHG Inventory and Forecast



Climate Action Baseline



Where BAU Projections Are Aiming

	1.5°C	2°C	2°C IMPACTS	3.8°C / (6.84°F)
EXTREME HEAT Global population exposed to severe heat at least once every five years	14%	37%	2.6x WORSE	46%+
SEA-ICE-FREE ARCTIC Number of ice-free summers	AT LEAST 1 EVERY 100 YEARS	AT LEAST 1 EVERY 10 YEARS	10x WORSE	Annually
SEA LEVEL RISE Amount of sea level rise by 2100	0.40 METERS	0.46 METERS	.06M MORE	1m+
SPECIES LOSS: VERTEBRATES Vertebrates that lose at least half of their range	4%	8%	2x WORSE	16%
SPECIES LOSS: PLANTS Plants that lose at least half of their range	8%	16%	2x WORSE	33%
SPECIES LOSS: INSECTS Insects that lose at least half of their range	6%	18%	3x WORSE	28%
ECOSYSTEMS Amount of Earth's land area where ecosystems will shift to a new biome	7%	13%	1.86x WORSE	28%+
PERMAFROST Amount of Arctic permafrost that will thaw	4.8 MILLION KM ²	6.6 MILLION KM ²	38% WORSE	Unknown
CROP YIELDS Reduction in maize harvests in tropics	3%	7%	2.3x WORSE	10%+

GHG Emissions Forecast

Understanding Impacts of BAU Forecast

Understanding what the BAU forecast means for Kane County may be best achieved by placing emissions forecasts within a global perspective of climate change impacts. Global impacts can be viewed through understanding difference between 1.5°C, 2°C, and 4.6°C degree global warming.

The International Panel on Climate Change (IPCC) is the United Nations Environment Programme (UNEP) body for assessing the science related to climate change and providing support in climate action policy making. The scientific consensus of the international IPCC working groups is to reduce global GHG emissions as needed in order to limit global warming to 1.5°C. In addition, the Paris Agreement aims to limit global warming to 1.5 to 2 degrees C above pre-industrial levels, considered to be the threshold for dangerous climate change.

The UNEP Emissions Gap Report published in November 2019 calculates that by 2030, global emissions will need to be 25% lower than 2018, and then reaching 80% reductions by 2050 to put the world on the least-cost pathway to limiting global warming to below 2°C. To limit global warming to 1.5°C, the same report finds emissions would need to be 55% lower than in 2018 and then achieving 90% or greater reductions by 2050.

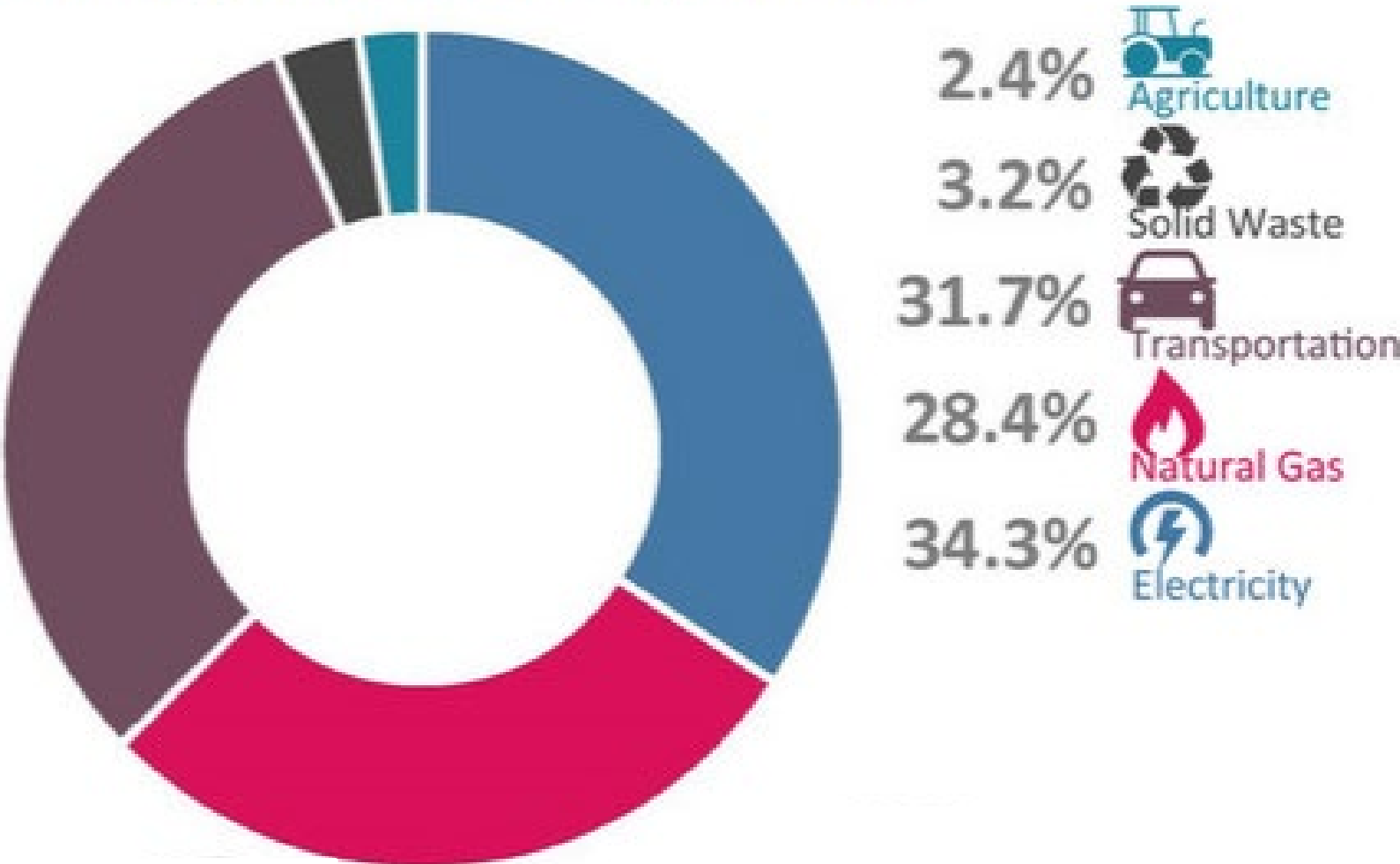
The infographic to the left, created by the World Resources Institute summarizes some of the global climate change impact differences between reducing global emissions to cap global warming at 1.5°C vs capping global warming to 2°C. We've added an illustration of the impacts related to a 3.8°C warming - which is where current Kane County Business-as-Usual projections point.

Source and Graphic: World Resources Institute

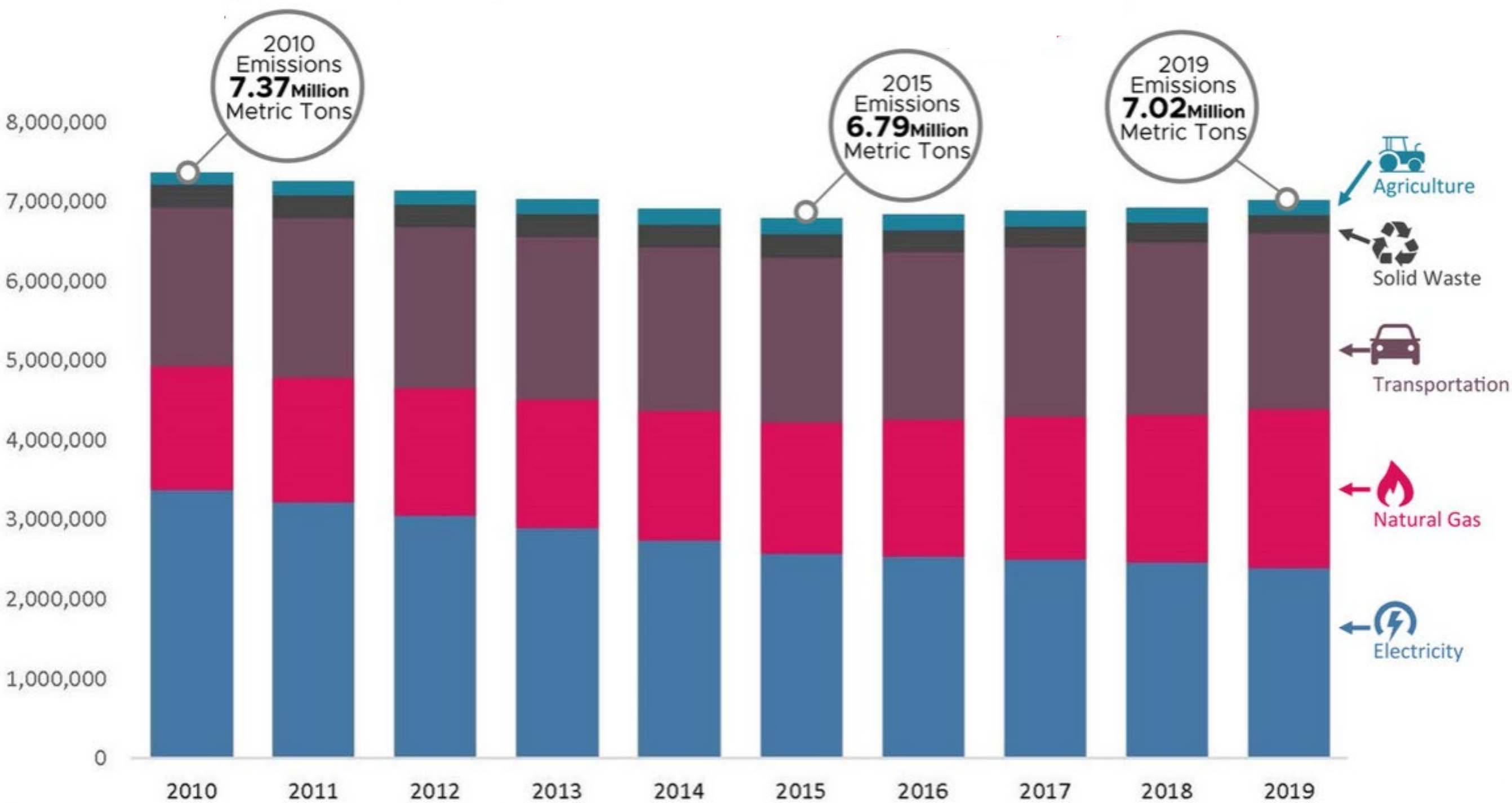


Climate Action Baseline

County-Wide GHG by Sector



Climate Action Baseline

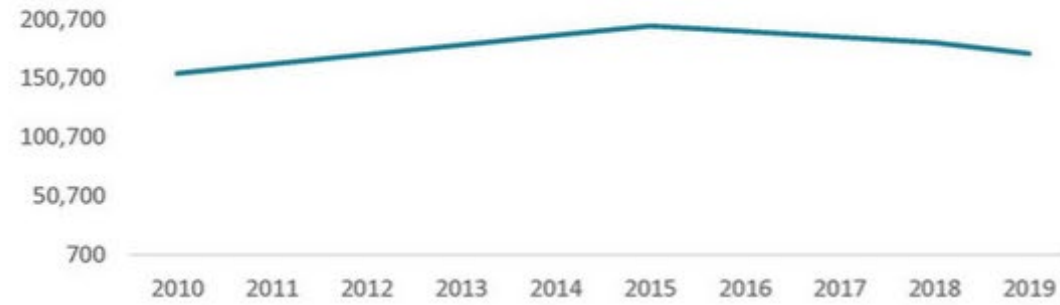


Climate Action Baseline



Agriculture

County-Wide Sector GHG Trend Lines



2010

154,812
Metric Tons

2019

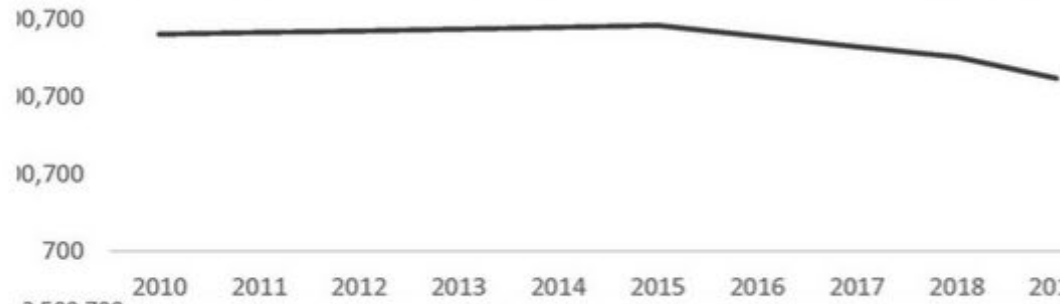
171,729
Metric Tons

Change

+10.9%



Solid Waste



281,628
Metric Tons

224,522
Metric Tons

-20.3%



Transportation



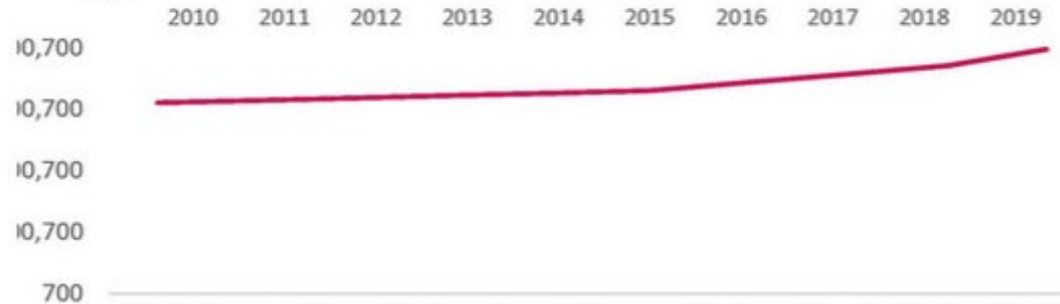
1.99 million
Metric Tons

2.2 million
Metric Tons

+11.2%



Natural Gas



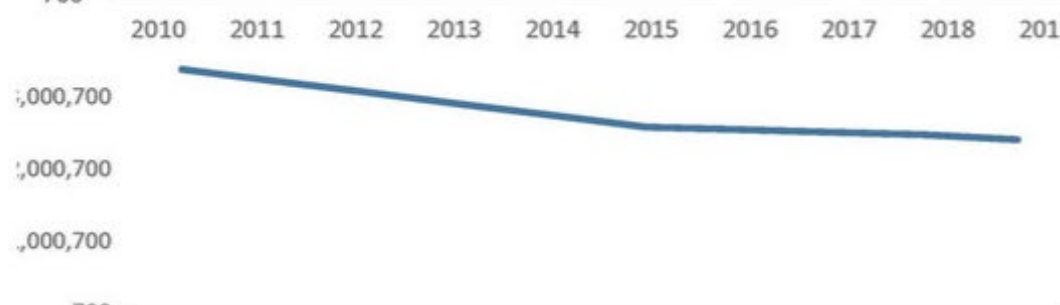
1.55 million
Metric Tons

1.99 million
Metric Tons

+28.0%



Electricity



3.38 million
Metric Tons

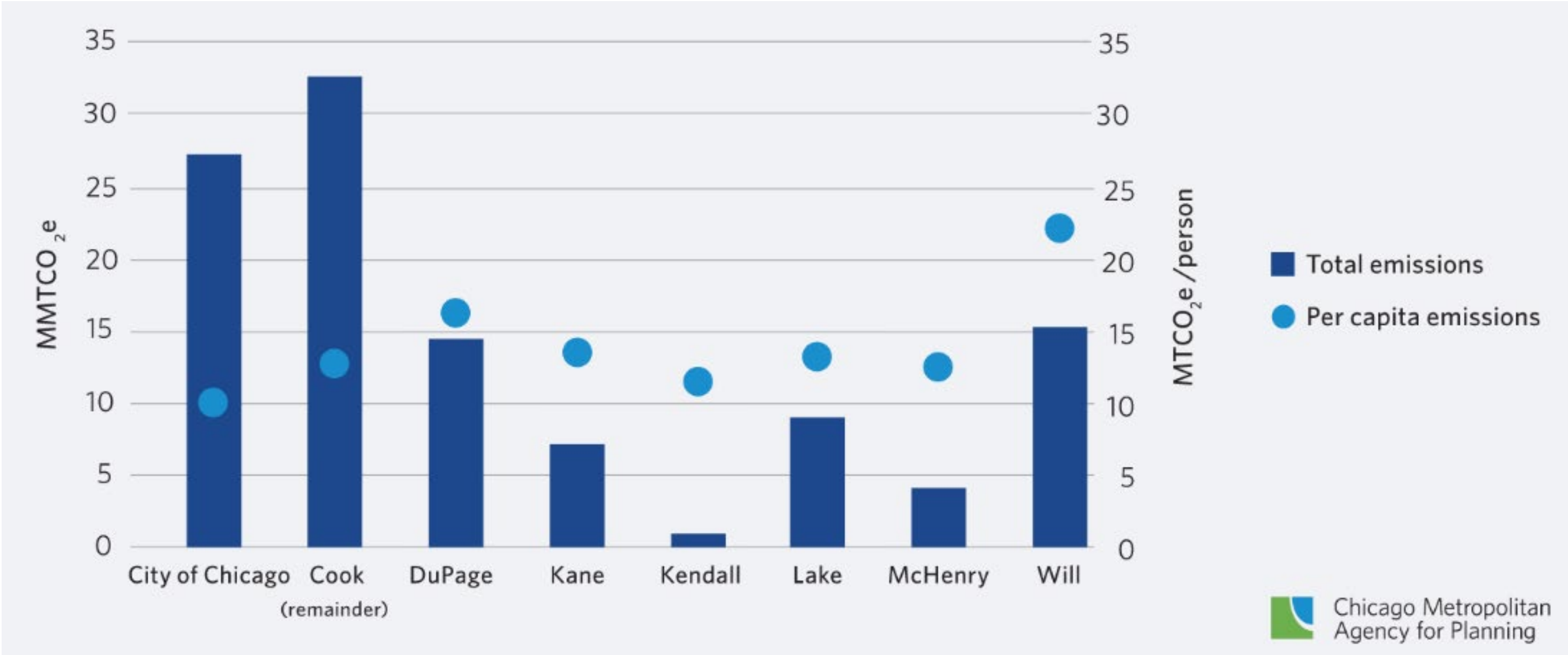
2.41 million
Metric Tons

-28.8%



Climate Action Baseline

Per Capita Comparison - Chicago Metropolitan Area



Climate Action Baseline

Global Comparison

Top Ten Countries: Based on Absolute (Total) GHG Emissions

	Total GHG Emissions
	'000 metric tons
China	10,707,219.73
United States	4,817,720.21
India	2,456,300.05
Russian Federation	1,703,589.97
Japan	1,081,569.95
Germany	657,400.02
Iran, Islamic Rep.	630,010.01
Indonesia	619,840.03
Korea, Rep.	610,789.98
Canada	580,210.02

Top Ten Countries: Based on Per Capita GHG Emissions

	Per Capita Emissions
	metric tons
Qatar	32.76
Bahrain	22.26
Kuwait	20.86
United Arab Emirates	20.50
Oman	16.52
Brunei Darussalam	15.96
Canada	15.43
Luxembourg	15.31
Australia	15.25
United States	14.67



Climate Action Baseline

Global Comparison

Top Ten Countries: Based on Absolute (Total) GHG Emissions

Top Ten Countries: Based on Per Capita GHG Emissions

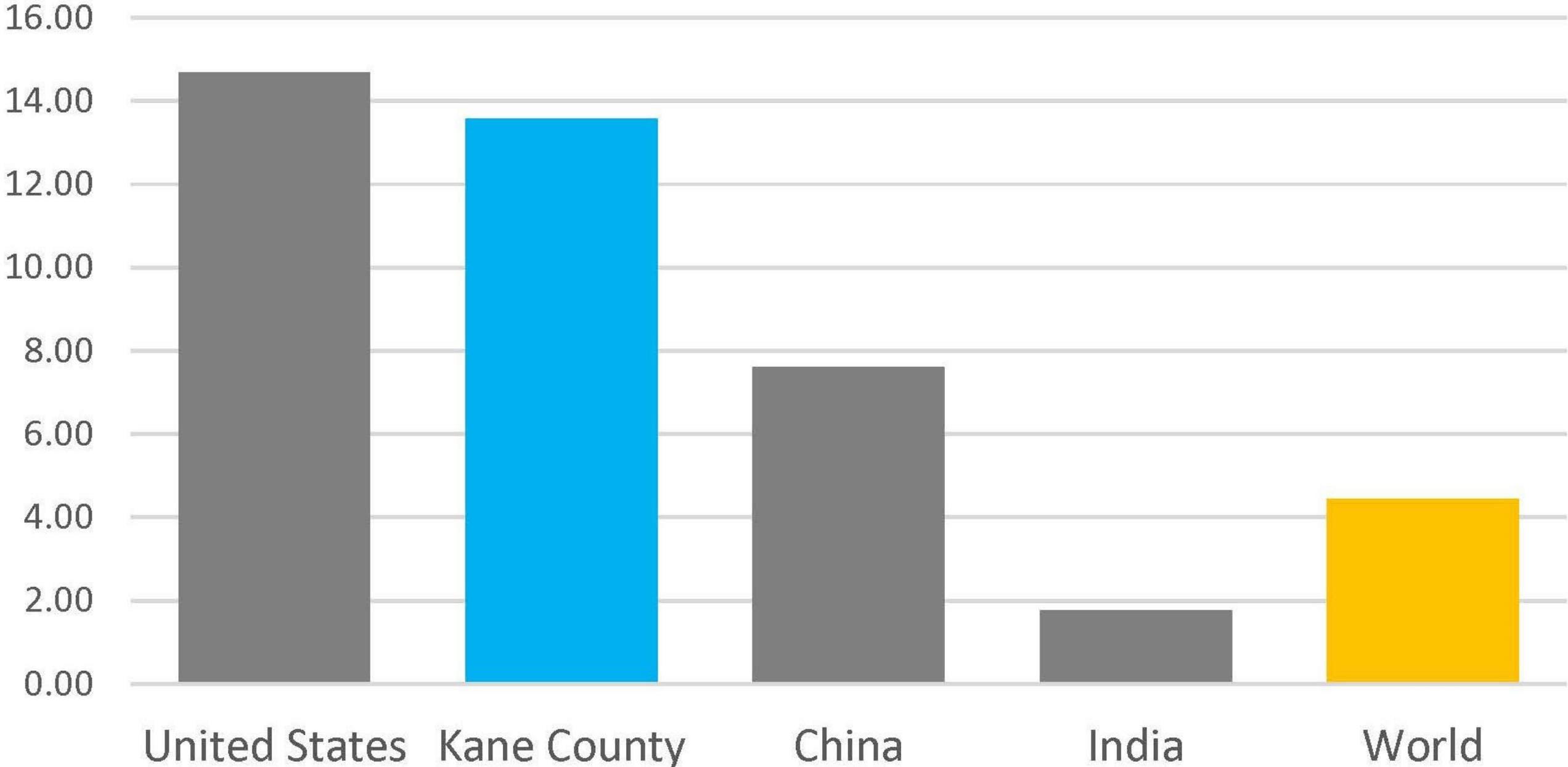
		Total GHG Emissions		Per Capita Emissions
		'000 metric tons		metric tons
	China	10,707,219.73	Qatar	32.76
	United States	4,817,720.21	Bahrain	22.26
	India	2,456,300.05	Kuwait	20.86
	Russian Federation	1,703,589.97	United Arab Emirates	20.50
	Japan	1,081,569.95	Oman	16.52
	Germany	657,400.02	Brunei Darussalam	15.96
	Iran, Islamic Rep.	630,010.01	Canada	15.43
	Indonesia	619,840.03	Luxembourg	15.31
	Korea, Rep.	610,789.98	Australia	15.25
	Canada	580,210.02	United States	14.67
121st	Cyprus	7,190.00	Saudi Arabia	14.62
122nd	Kane County	7,015.10	Palau	13.95
123rd	Brunei Darussalam	6,990.00	Kane County	13.58



Climate Action Baseline

Global Comparison

Kane County Per Capita On World Stage

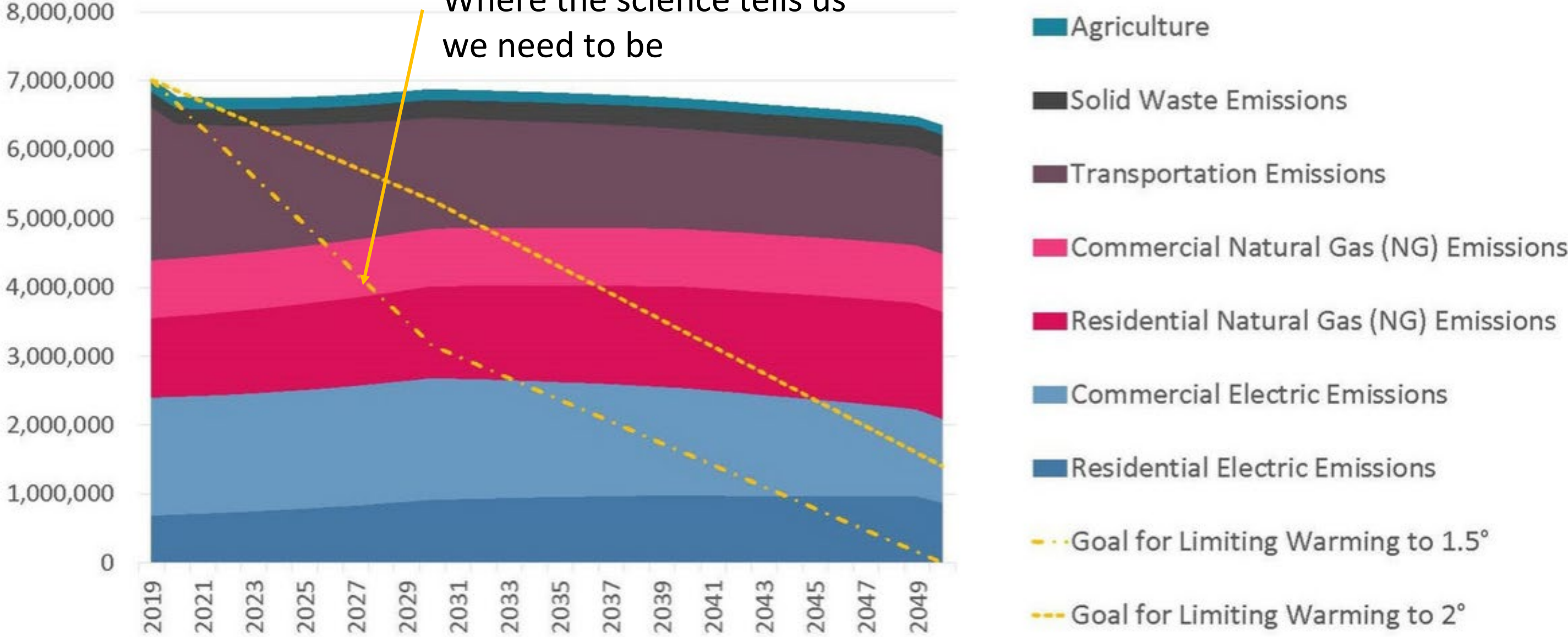


Climate Action Baseline

GHG Emissions Forecast

Forecast driven largely by projected population changes

Where the science tells us we need to be



Climate Action Baseline

Ground Cover Survey

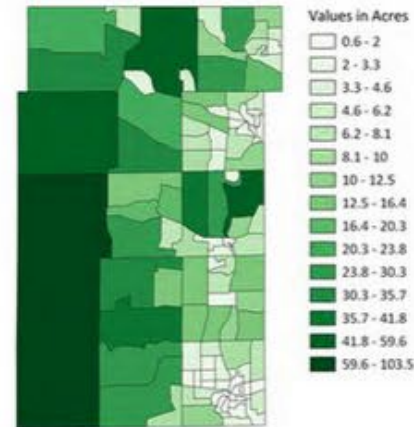


Climate Action Baseline

Calculating Potential Goals

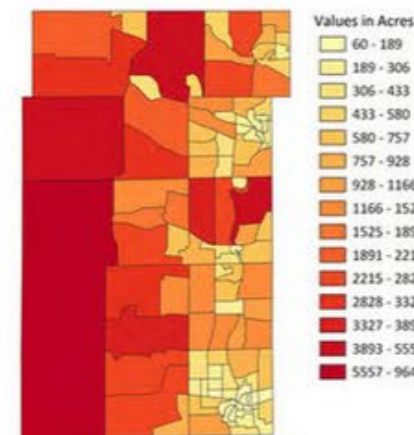
Translating Tree Canopy Coverage Goal To New Tree Planting - Growth Rates (CG)

Consideration of tree canopy growth rate is important in anticipating long-range tree canopy goals and annual new planting needs. According to a 2014 USDA report, the average growth rate for non-managed forests is 2% while the average growth rate for managed forests is 2.5% annually.



Translating Tree Canopy Coverage Goal To New Tree Planting - Mortality Rates (CM)

As with growth rate, consideration of tree canopy mortality is necessary for long-range Tree Canopy planning. According to the 2014 USDA report, the average mortality rate for non-managed forests is 1.86% while the average mortality rate for managed forests is 1.5% annual. There are few studies exploring mortality rates for trees in urban and suburban settings, those studies that exist indicate a range from 2.7% for general suburban trees and 3.5% to 14% for street trees*. As many trees in the Village exist in forest type setting on publicly owned land and much of the balance are general suburban trees observed regularly and likely seen as having value, we recommend using a mortality rate of 1.8%.



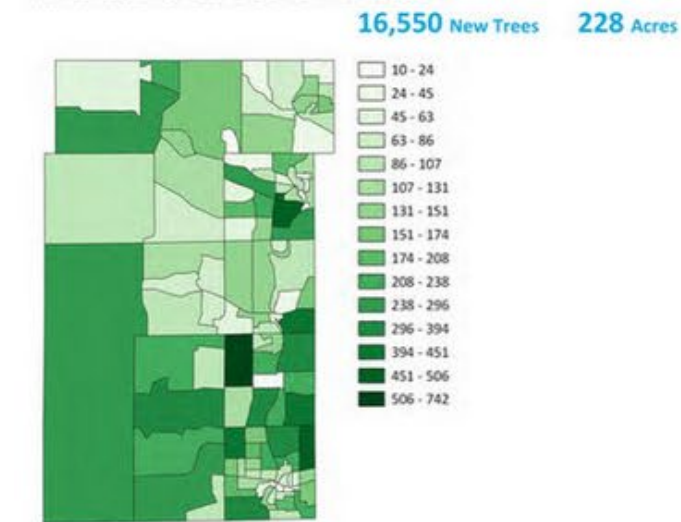
*How Many Trees Are Enough? Tree Death and the Urban Canopy <https://scenariojournal.com/article/how-many-trees-are-enough/>

Translating Tree Canopy Coverage Goal To New Tree Planting - New Tree Planting Annual Target (CN)

Using the new planting requirement calculation method (CB + CG - CM + CN = CT) with the previously defined values for existing tree canopy (CB), growth rates (CG), mortality rates (CM), and the 2040 Tree Canopy (CT) goals by neighborhood the required number of new trees to be planted to meet that goal can be identified. The map below shows the annual new tree count required to meet the 2040 tree canopy goals for each neighborhood.

New Tree Planting Annual Target to Meet 2040 Tree Canopy Goal (CN)

Community-Wide Total:
Note, Acreage represents the canopy coverage at year of planting, with an assumed new tree crown radius of 5':



Calculating Potential Goals

Annual Path to 2040 Tree Canopy Cover Goal

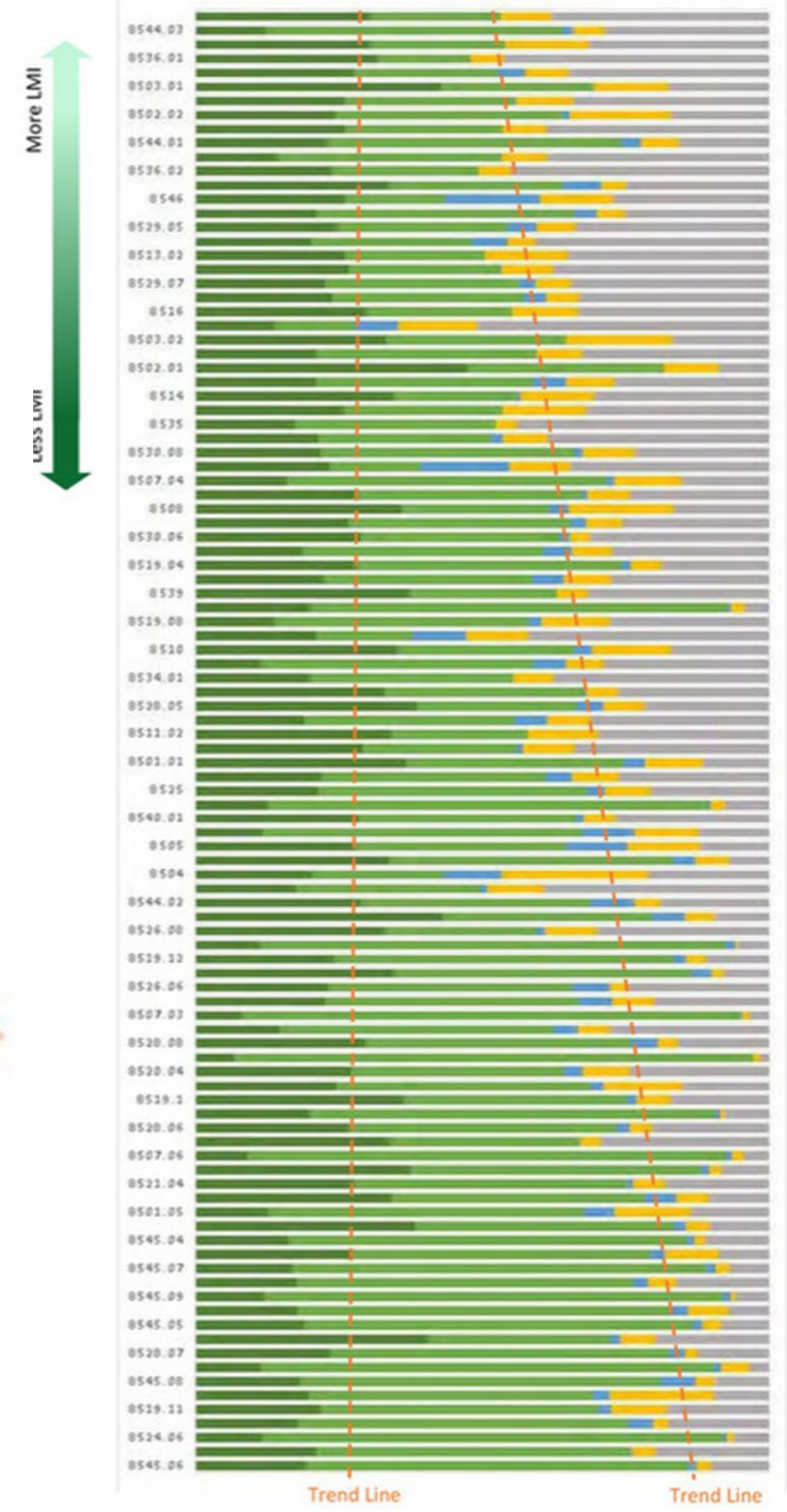
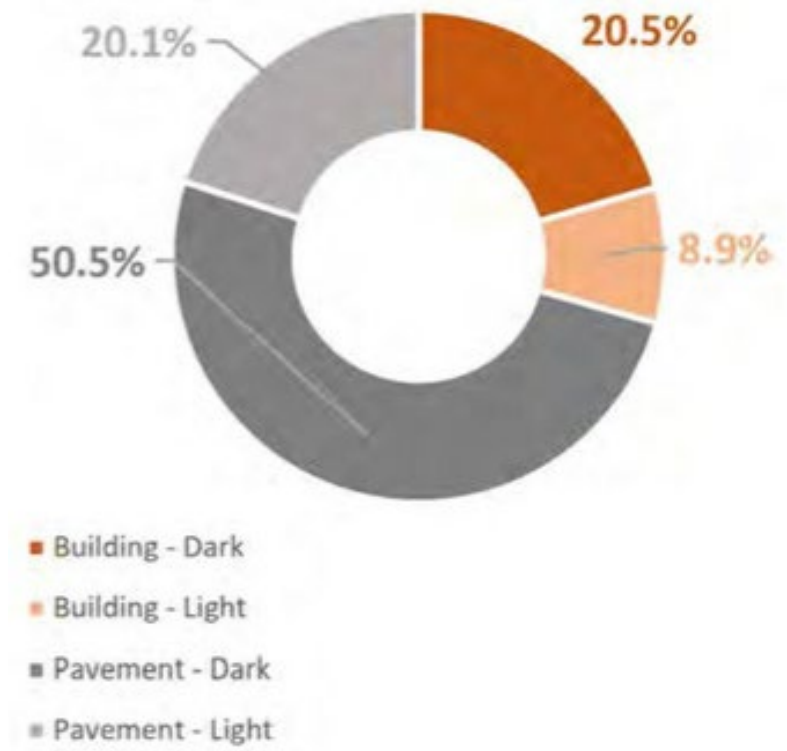
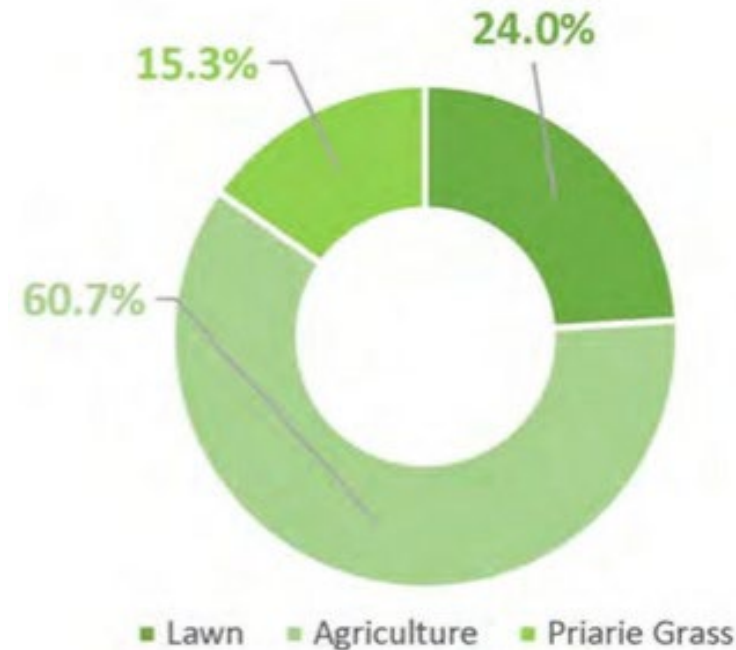
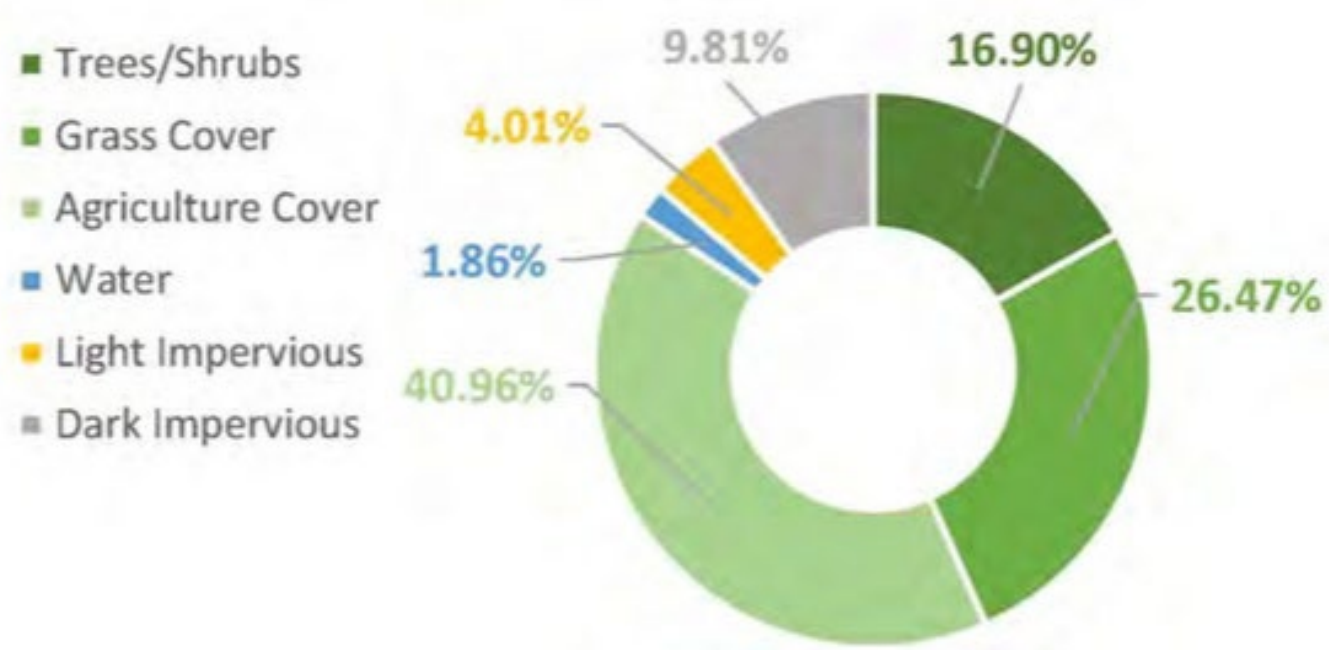
The chart below shows the community wide average values for year beginning canopy cover (CB), annual growth rate (CG), mortality rate (CM), the new tree planting targets (CN) and the year end tree canopy goal (CT) for each year through the 2040 goal.

	CB (existing)	CG (growth)	CM (loss)	CN (new)	CT (year goal)	UTC (year end coverage %)
2024	56171 +	1236 -	-1152+	228 =	56484	17.0%
2025	56484 +	1243 -	-1158+	228 =	56796	17.1%
2026	56796 +	1250 -	-1164+	227 =	57109	17.2%
2027	57109 +	1256 -	-1171+	227 =	57421	17.3%
2028	57421 +	1263 -	-1177+	227 =	57734	17.4%
2029	57734 +	1270 -	-1184+	226 =	58047	17.5%
2030	58047 +	1277 -	-1190+	226 =	58359	17.6%
2031	58359 +	1284 -	-1196+	225 =	58672	17.7%
2032	58672 +	1291 -	-1203+	225 =	58985	17.7%
2033	58985 +	1298 -	-1209+	224 =	59297	17.8%
2034	59297 +	1305 -	-1216+	224 =	59610	17.9%
2035	59610 +	1311 -	-1222+	223 =	59923	18.0%
2036	59923 +	1318 -	-1228+	223 =	60235	18.1%
2037	60235 +	1325 -	-1235+	222 =	60548	18.2%
2038	60548 +	1332 -	-1241+	222 =	60860	18.3%
2039	60860 +	1339 -	-1248+	221 =	61173	18.4%
2040	61173 +	1346 -	-1254+	221 =	61486	18.5%



Climate Action Baseline

Ground Cover Breakdown by Type



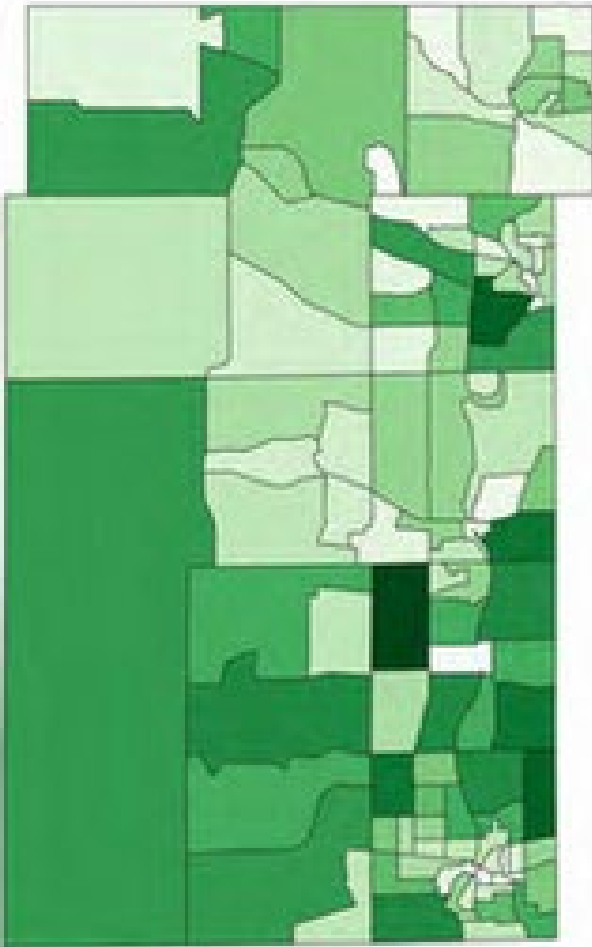
Climate Action Baseline

New Tree Planting Annual Target to Meet 2040 Tree Canopy Goal (CN)

Community-Wide Total:

Note, Acreage represents the canopy coverage at year of planting, with an assumed new tree crown radius of 5':

16,550 New Trees **228 Acres**

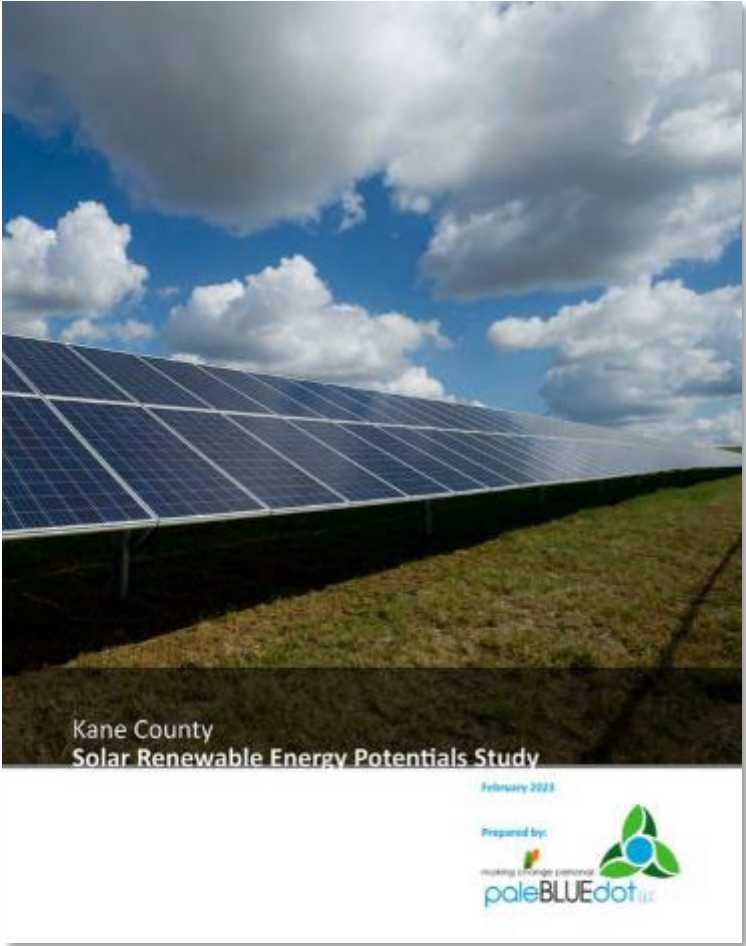


	CB (existing)	CG (growth)	CM (loss)	CN (new)	CT (year goal)	UTC (year end coverage %)
2024	56171 +	1236 -	-1152+	228 =	56484	17.0%
2025	56484 +	1243 -	-1158+	228 =	56796	17.1%
2026	56796 +	1250 -	-1164+	227 =	57109	17.2%
2027	57109 +	1256 -	-1171+	227 =	57421	17.3%
2028	57421 +	1263 -	-1177+	227 =	57734	17.4%
2029	57734 +	1270 -	-1184+	226 =	58047	17.5%
2030	58047 +	1277 -	-1190+	226 =	58359	17.6%
2031	58359 +	1284 -	-1196+	225 =	58672	17.7%
2032	58672 +	1291 -	-1203+	225 =	58985	17.7%
2033	58985 +	1298 -	-1209+	224 =	59297	17.8%
2034	59297 +	1305 -	-1216+	224 =	59610	17.9%
2035	59610 +	1311 -	-1222+	223 =	59923	18.0%
2036	59923 +	1318 -	-1228+	223 =	60235	18.1%
2037	60235 +	1325 -	-1235+	222 =	60548	18.2%
2038	60548 +	1332 -	-1241+	222 =	60860	18.3%
2039	60860 +	1339 -	-1248+	221 =	61173	18.4%
2040	61173 +	1346 -	-1254+	221 =	61486	18.5%



Climate Action Baseline

Renewable Energy Potential



Climate Action Baseline

Solar in Illinois

As of December 2015, there are a total of 12,500 solar installations in Illinois.

The State's solar capacity comes from 1,500 MW. Current solar capacity ranks 12th nationally.

Costs for solar are decreasing rapidly, with a current rate of 21% annually.

Buildings: 81% solar-viable

2.5K existing solar installations

Roofs: 2.1M

Capacity: 41.1 MW DC

TOP METROPO: 4,275 Chicago-Naperville-Joliet

(sources: Solar SEIA, Solar Foundation)

2-2

Solar in Kane County

Based on information from Kane County, the total solar capacity is approximately 1,500 MW.

The total solar power is 1,500 MW. The Kane County solar business is growing.

Kane County

Population: 13,395,829

2.1M

41.1 MW DC

4,275 Chicago-Naperville-Joliet

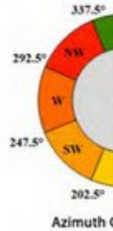
(sources: Solar SEIA, Solar Foundation)

3-2

Region Wide Solar

Methodology: This section covers the methodology for the region-wide solar analysis.

Input Data: Roof plane solar potential data from NREL. NREL data obtained from the Home Insulation Level sure are based on NREL.

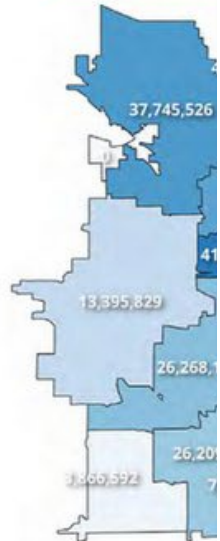


Zip Codes Included:

- 60109
- 60110
- 60118
- 60119
- 60120
- 60123
- 60124
- 60134
- 60136
- 60140
- 60151
- 60174

4-2

Region Wide Solar Estimated Generation



4-6

Region Wide Solar Kane County Market A Growth Scenario: Share of Project

This scenario anticipates a statewide annual rate of installed capacity resulting in a total of 29,200 MW by 2040.

As the market continues to grow, new installed capacity assumptions outlined in the scenario.

Share of Project: (29,200 MW)

Year	Cumulative Capacity (MW)
2025	27,280
2030	98,020
2040	491,200



4-8

County Wide Municipal Solid Waste Plasma Gasification Potential

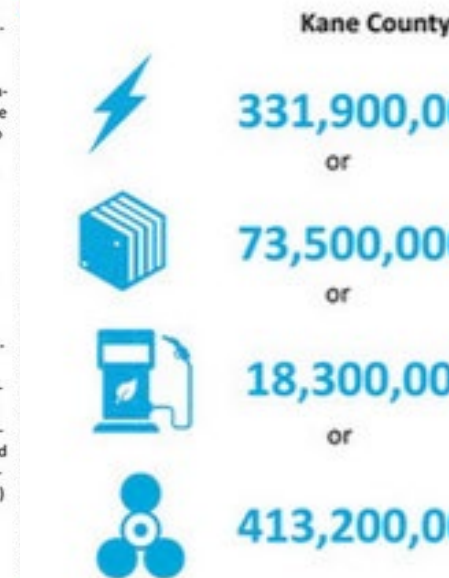
Exploration of gasification of Municipal Solid Waste for energy and beneficial use bi-products should not be instituted in competition with traditional goals of waste reduction, reuse, and recycling efforts. Gasification works in conjunction with this established waste hierarchy - even after efforts to reduce, reuse, recycle and compost, there is still residual waste generated. Rather than send this residual waste to a landfill where harmful greenhouse gas emissions are released, capture the energy value of the waste through plasma gasification energy recovery facilities. This approach to energy generation may be a potential for any community that generates solid waste, regardless of whether or not that solid waste is currently landfilled within the community's boundaries. For communities that currently export their solid waste to locations outside of the community, it may be possible to create a gasification plant within the community, or to explore partnering with the existing site handling the community's solid waste.

What is Gasification?
Gasification can be defined as a thermochemical process that uses heat and a low-oxygen environment to transform carbonaceous feedstock such as biomass or MSW through partial oxidation to release other forms of energy. This means that oxygen is injected but not enough to cause complete combustion as it does in waste incinerators. Unlike incineration, gasification converts solid or liquid waste feedstock into gaseous product by exposing it to a range of high temperatures in a controlled supply of oxygen without actually burning it. At such elevated temperatures, bonds in solid and liquid wastes are broken, releasing simple gaseous molecules, which are mainly a mixture of carbon monoxide (CO) and hydrogen (H₂) known as synthesis gas (syngas), which has energy content and can be used to generate electrical power in fuel cells or as a fuel in gas engines and turbines after cleaning.

How Does a Gasification System Work?
Waste is fed into the top of the gasifier vessel through an airlock. Purified oxygen and steam are injected into the base. The gasification reaction occurs at temperatures around 2,200°C (4,000°F). As the waste descends within the gasifier, it passes through several reaction zones reaching the hottest area at the base. In each zone, different materials are driven off. At the lowest point of the gasifier, the waste is reduced to carbon char, inorganic materials, and metals. Injected oxygen and steam react with the carbon char to produce a synthesis gas (syngas), comprised predominately of carbon monoxide and hydrogen. This reaction is highly exothermic, meaning that it releases a large amount of energy in the form of heat. The syngas and heat rise through the gasifier, interacting with the waste as it descends through the vessel.

7-2

Syngas then exits the top of the gasifier vessel. At the base of the gasifier, inorganic materials and metals collect in a molten state. This molten liquid is periodically tapped out and cools into a vitrified stone that is very similar in appearance to volcanic rock and suitable for use in landscaping or as construction material aggregate. Systems which use ultra high temperatures and purified oxygen (as opposed to nitrogen-rich ambient air) avoids greenhouse gas emissions because it eliminates nitrogen from the process and preventing the formation of harmful substances such as nitrogen oxides.



electricity, and solids including biochar, and vitrified stone that is very similar in appearance to volcanic rock and suitable for use in landscaping or as construction material aggregate. To generate electricity, syngas must be cleaned to the degree at which it can be used to power an electrical generation engine. The production of diesel, hydrogen fuel, and other end products, requires additional syngas cleaning efforts, as their purity requirements are more stringent than that of electricity production. As a result, each desired end-product may require a unique syngas cleaning and conditioning process.

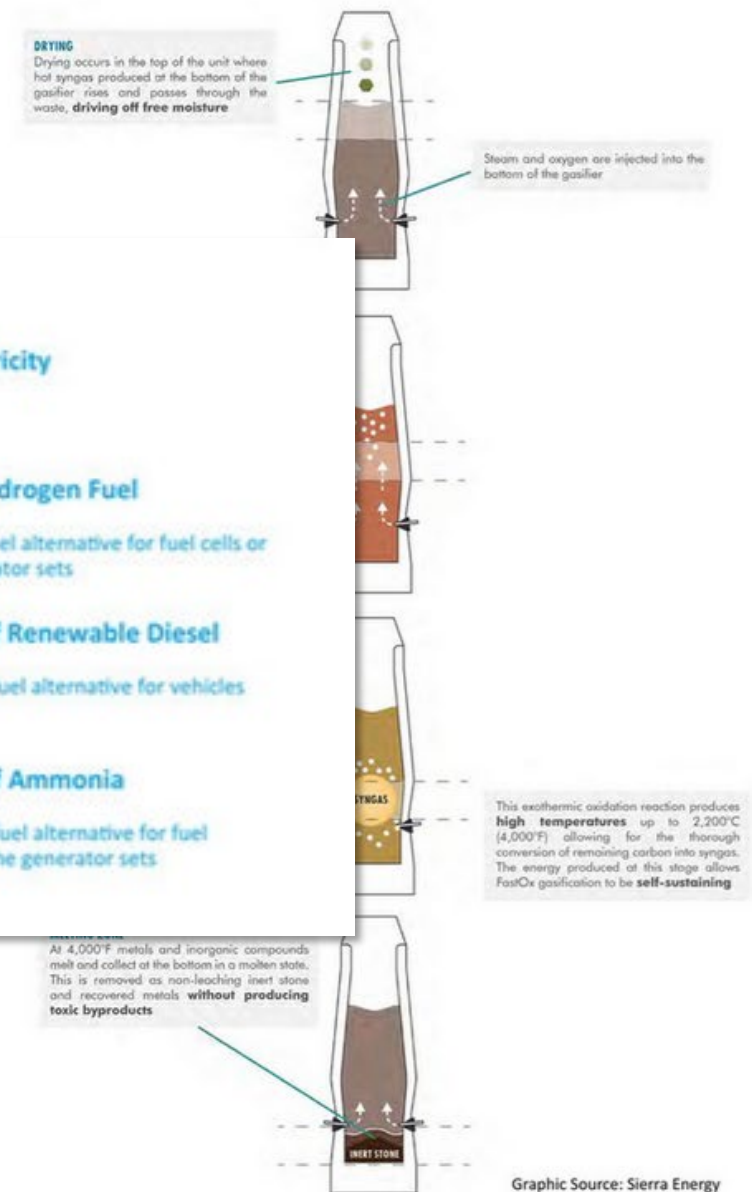
Kane County Renewable Energy Potentials Study



paleBLUEDot LLC

Kane County Renewable Energy Potentials Study

7-3



Climate Action Baseline

Transportation Equipment and Mobility

Potential Climate Change Impacts by Sector

paleBLUEDot compiled a list of climate vulnerabilities for each of the sectors of interest included in this Baseline Assessment. The vulnerabilities were based on existing resources and our experience with other communities as well as regional planning documents and studies. The list of vulnerabilities generated for each sector included both direct impacts of climate change as well as ways that existing stressors in the community might interact with climate changes, either by exacerbating the impacts of climate change or being exacerbated by climate change (see Climate Vulnerability Assessment for more information). The following are the vulnerabilities identified as being of particular concern for this sector:

Vulnerability: Increased Car Use

Reduced interest in walking/biking or using public transportation on hot days, increasing dependence on cars with air conditioning.

Likelihood	Consequence	Capacity	Vulnerability
High	Moderate	High	Moderate

Vulnerability: Flood Damage to Infrastructure

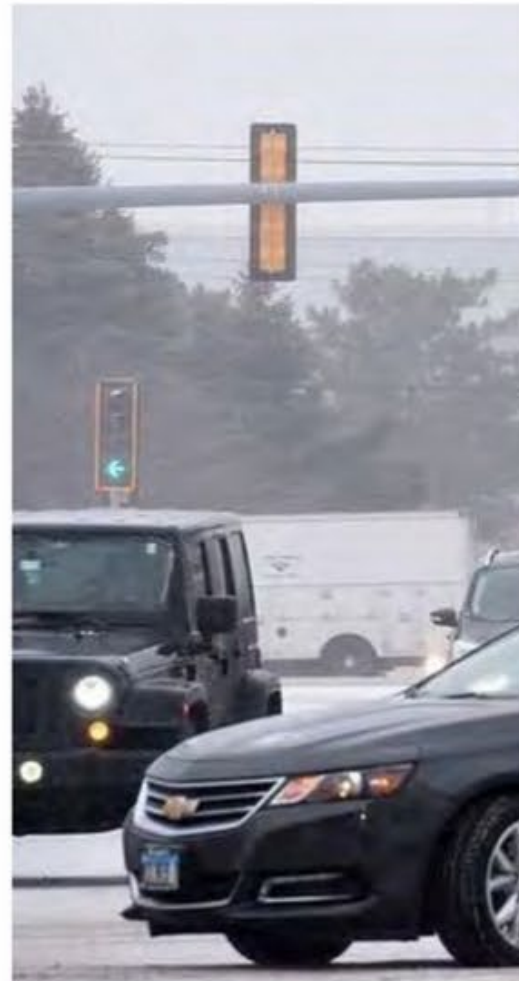
Increased flooding and associated damage to streets, sidewalks/trails, and parking lots during heavy rain events, particularly in low-lying areas or where stormwater infrastructure is inadequate

Likelihood	Consequence	Capacity	Vulnerability
Moderate	Very High	Moderate	High

Vulnerability: Resistance to Change

Historical investment in car-focused and lower density development resulting in reduced walkability, complicating future changes to increase the use of public and alternative mobility.

Likelihood	Consequence	Capacity	Vulnerability
Moderate	High	Moderate	Moderate



Transportation and Land Use

Strategic Goal Recommendations

Community Wide

Based on the reviews outlined in this section, we recommend the Kane County explore establishing the following Transportation and Land Use Strategic Goals:

Pathway 1—Reduction

TL 1: Decrease community wide VMT by 5% by 2030.

Mitigation Objective 6

TL 2: Increase public transit commuter ridership from 2.24% to 4.48% by 2030.

Mitigation Objective 6

TL 3: Increase average population per developed acre by 4.5% by 2030 (from 6.07 to 6.35 ppl/acre).

Mitigation Objective 6

Fuel Switching

TL 4: Increase battery electric vehicle (BEV) utilization to 15% of community-wide rolling stock (from approximately 2,550 vehicles to 99,000 vehicles community-wide).

Mitigation Objective 5

TL 5: Establish viable renewable diesel and/or biodiesel sources to serve community by 2027. Achieve 20% diesel consumption replacement by 2030

Strategic Goal Recommendations

Government Operations

Based on the reviews outlined in this section, we recommend the Kane County explore establishing the following Transportation and Land Use Strategic Goals:

Fuel Switching

TL 6: Achieve 25% conversion of county/municipal operations gasoline and e10 gasoline vehicles and equipment within municipal fleet to EV's by 2030. Achieve 100% conversion by 2040.

Mitigation Objectives 1, 5

TL 7: Convert all county/municipal operations diesel fuel utilization to renewable diesel and/or biodiesel fuel by 2028.

Mitigation Objectives 1, 5

TL 8: Increase fuel efficiency of remaining combustion engine fleet by 5% by 2030.

Mitigation Objectives 1, 5

Projected Sector Emission Reductions Achieved by Draft Strategies

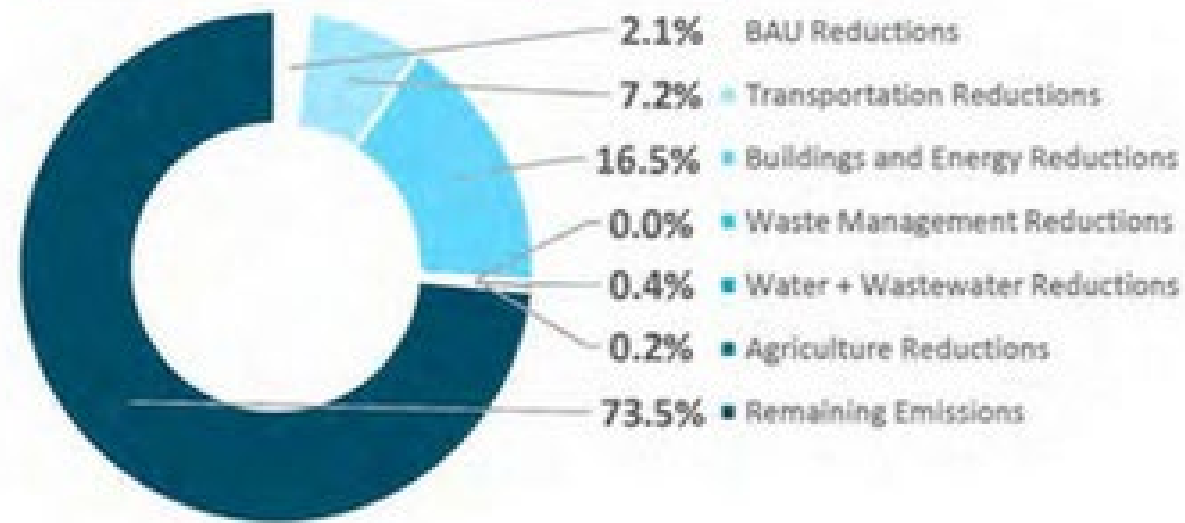


Introduction

Projected Emission Reductions Achieved by Draft Strategies

The following sections of this Baseline Assessment document include preliminary strategic goal recommendations for consideration by the planning team. These recommendations are based on the summary research presented in each section and are intended as preliminary statements for the purpose of supporting a collaborative team process which will result in the final strategic goal statements. These preliminary strategical goals generally align with current State of Illinois and IPCC recommended emission reduction goals.

Share of Total Projected Potential Emission Reductions by Sector by 2030 from 2019 Baseline (preliminary estimate):



Based on the illustrated potential reductions included in this document, we recommend the following as a preliminary Climate Mitigation goal statement for consideration by the planning team:

Recommended Kane County GHG Reduction Goal:



“To reduce county-wide GHG emissions by 25% below 2019 levels by 2030, and achieve carbon neutrality by 2050”





What Are Your Thoughts



Other Ways to be involved:

Preliminary Draft Strategic Goal

feedback through shared files located here:

<https://drive.google.com/drive/folders/1by4APpps1LVUfdUNrqqvB6lypwsAtSzs?usp=sharing>

- 1) Click on the document for the topic you want to review
- 2) Once in a document just make sure you are in "editing" mode by selecting the button on top right:

On-Line Survey:

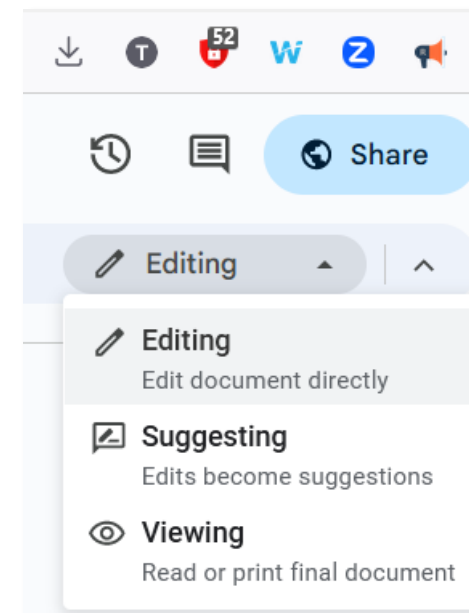
<https://palebluedot.llc/kane-climate-action-survey>

Interested in Participating on the Planning Team?

<https://forms.gle/xSg5Ei3iAfw3LA2D8>

Follow Along on Project Webpage:

<https://palebluedot.llc/kane-climate-action>



Kane County
CLIMATE ACTION PLAN

Kane County is creating its first Climate Action Implementation Plan for the community. The plan will help Kane County municipalities as well as those who live and work in the county imagine and achieve a future where the earth and all who live on it thrive.

WE WANT TO HEAR FROM YOU!

HOW TO GET INVOLVED NOW:

PLEASE TAKE OUR CLIMATE ACTION SURVEY
Take Kane County's Climate Action Survey and help shape our sustainability priorities. Please share the survey with your family, neighbors, friends and co-workers.

Find the survey here:
<https://palebluedot.llc/kane-climate-action>

STAY INFORMED!
Follow progress on Kane County's Climate Action Plan effort here:
<https://palebluedot.llc/kane-climate-action>

KANE COUNTY, ILLINOIS
ESTABLISHED JANUARY 16, 1836

