



City of Denton

City Hall
215 E. McKinney St.
Denton, Texas 76201
www.cityofdenton.com

Meeting Agenda

Sustainability Framework Advisory Committee

Friday, January 27, 2023

1:00 PM

Council Work Session Room

After determining that a quorum is present, the Sustainability Framework Advisory Committee of the City of Denton, Texas will convene in a Regular Meeting on Friday, January 27, 2023, at 1:00 p.m. in the Council Work Session Room at City Hall, 215 E. McKinney Street, Denton, Texas at which the following items will be considered:

1. ITEMS FOR INDIVIDUAL CONSIDERATION

- A. [SFAC23-003](#) Receive nominations and elect a Chair and Vice-Chair.
Attachments: [Exhibit 1 - Agenda Information Sheet](#)
- B. [SFAC23-001](#) Consider approval of the October 28, 2022 minutes.
Attachments: [10.28.22 MINUTES](#)
- C. [SFAC23-006](#) Receive and discuss proposed meeting calendar for 2023 calendar year.
Attachments: [Exhibit 1 - Agenda Information Sheet](#)
[Exhibit 2 - Draft Calendar](#)
- D. [SFAC23-004](#) Hear a follow up presentation on the current status of the GreenSense Energy Efficiency and Solar Rebate Programs. Discuss and consider various options to bring more effective programs to our DME customers.
Attachments: [Exhibit 1 - Agenda Information Sheet](#)
[Exhibit 2 - Memo](#)
[Exhibit 3 - Presentation](#)
- E. [SFAC23-005](#) Receive a report hold a discussion and provide feedback regarding the Climate Action and Adaptation Plan development.
Attachments: [Exhibit 1 - Agenda Information Sheet](#)
[Exhibit 2 - Presentation](#)
- F. [SFAC23-002](#) Staff Reports
1. February Engagement
2. Matrix
Attachments: [Exhibit 1 - February Engagement](#)
[Exhibit 2 - Matrix](#)

2. CONCLUDING ITEMS

A. Under Section 551.042 of the Texas Open Meetings Act, respond to inquiries from the Sustainability Framework Advisory Committee or the public with specific factual information or recitation of policy, or accept a proposal to place the matter on the agenda for an upcoming meeting AND Under Section 551.0415 of the Texas Open Meetings Act, provide reports about items of community interest regarding which no action will be taken, to include: expressions of thanks, congratulations, or condolence; information regarding holiday schedules; an honorary or salutary recognition of a public official, public employee, or other citizen; a reminder about an upcoming event organized or sponsored by the governing body; information regarding a social, ceremonial, or community event organized or sponsored by an entity other than the governing body that was attended or is scheduled to be attended by a member of the governing body or an official or employee of the municipality; or an announcement involving an imminent threat to the public health and safety of people in the municipality that has arisen after the posting of the agenda.

CERTIFICATE

I certify that the above notice of meeting was posted on the official website (<https://tx-denton.civicplus.com/242/Public-Meetings-Agendas>) and bulletin board at City Hall, 215 E. McKinney Street, Denton, Texas, on January 24, 2023, in advance of the 72-hour posting deadline, as applicable, and in accordance with Chapter 551 of the Texas Government Code.

CITY SECRETARY

NOTE: THE CITY OF DENTON'S DESIGNATED PUBLIC MEETING FACILITIES ARE ACCESSIBLE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT. THE CITY WILL PROVIDE ACCOMMODATION, SUCH AS SIGN LANGUAGE INTERPRETERS FOR THE HEARING IMPAIRED, IF REQUESTED AT LEAST 48 HOURS IN ADVANCE OF THE SCHEDULED MEETING. PLEASE CALL THE CITY SECRETARY'S OFFICE AT 940-349-8309 OR USE TELECOMMUNICATIONS DEVICES FOR THE DEAF (TDD) BY CALLING 1-800-RELAY-TX SO THAT REASONABLE ACCOMMODATION CAN BE ARRANGED.



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Legislation Text

File #: SFAC23-003, **Version:** 1

AGENDA CAPTION

Receive nominations and elect a Chair and Vice-Chair.



City of Denton

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AGENDA INFORMATION SHEET

DEPARTMENT: Environmental Services and Sustainability

ACM: Christine Taylor, Assistant City Manager

DATE: January 27, 2023

SUBJECT

Receive nominations and elect a Chair and Vice-Chair.

DISCUSSION

The Sustainability Framework Advisory Committee (SFAC) will hold a discussion, make nominations, and elect a Chair and Vice Chair of the committee based on the rules and procedures outlined by City Council and the City Secretary's Office. Procedures for the election of officers.

Election of officers for City of Denton council-appointed boards will be as follows:

- The Chair and Vice-Chair will be elected by voting board members.
- Election of officers shall be annually as soon as practicable after the annual appointment process. If, for any reason, the Chair or Vice-Chair vacates their seat, a special election should be held to fill the unexpired term.
- The staff liaison, designated by the City Manager, shall serve as the official secretary to the board or commission to ensure records are maintained in accordance with requirements of the City Secretary's office.

EXHIBITS

Exhibit 1: Agenda Information Sheet

Respectfully submitted:
Katherine Barnett
Sustainability Manager



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Legislation Text

File #: SFAC23-001, **Version:** 1

AGENDA CAPTION

Consider approval of the October 28, 2022 minutes.

**CITY OF DENTON SUSTAINABILITY FRAMEWORK ADVISORY COMMITTEE
MINUTES
October 28, 2022**

After determining that a quorum was present, the Sustainability Framework Advisory Committee of the City of Denton, Texas convened in a Regular Meeting on Friday, October 28, 2022, at 1:00 p.m. in the City Council Work Session Room at 215 E. McKinney St, Denton, Texas.

PRESENT: Chair Keely Briggs, and Members Brand Richter, Ed Soph, and Wendell Stevens

ABSENT: Vice Chair Matthew Fry and Adam Briggie

REGULAR MEETING

1. ITEMS FOR INDIVIDUAL CONSIDERATION

A. SFAC22-030 Consider approval of the September 23, 2022 minutes.

The item was not presented, and discussion followed.

Member Soph moved to approve the item, Member Richter seconded the motion. Motion carried.

AYES (4): Chair Briggs, and Members Richter, Soph, and Stevens

NAYS (0): None

B. SFAC22-031 Receive a report, hold a discussion, and provide staff direction regarding the Fiscal Year 2022 - 2023 Sustainability Framework Fund Workplan.

The item was presented by Katherine Barnett, and discussion followed.

Following discussion, Members voted on the action item.

Member Soph moved to approve the item. Members Richter and Stevens seconded the motion.

Motion carried.

AYES (4): Chair Briggs, and Members Richter, Soph, and Stevens

NAYS (0): None

C. SFAC22- 032 Receive a report, hold a discussion, and give staff feedback on the expanded 2019 Inventory of Community and Government Operations Greenhouse Gas Emissions Report.

The item was presented by JT Douglas, and discussion followed.

Following discussion, Members had questions that staff answered.

D. SFAC22-034 Receive a report and hold a discussion regarding an annual summary of Recycling Education & Outreach for Fiscal Year 2021 – 2022.

The item was presented by Julissa Amador & Kim Jennings and discussion followed.

Following discussion, Members had questions that staff answered.

Member Stevens mentioned he would like to see Recycling become a part of school curriculum.

E. SFAC22-033 Staff Reports

The item was not presented, and discussion followed.

Following discussion, no changes were made to the Matrix.

CONCLUDING ITEMS

- Briggs: Would like a presentation on tree canopy goals.

With no further business, the meeting was adjourned at 2:20 pm.

KEELY BRIGGS
CHAIR
CITY OF DENTON, TEXAS

TASHA STOBAUGH
ADMINISTRATIVE ASSISTANT III
CITY OF DENTON, TEXAS

Minutes approved on: _____



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Legislation Text

File #: SFAC23-006, **Version:** 1

AGENDA CAPTION

Receive and discuss proposed meeting calendar for 2023 calendar year.



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AGENDA INFORMATION SHEET

DEPARTMENT: Environmental Services and Sustainability

ACM: Christine Taylor, Assistant City Manager

DATE: January 27, 2023

SUBJECT

Receive and discuss proposed meeting calendar for 2023 calendar year.

BACKGROUND

Discuss 2023 meeting calendar.

NEXT STEPS

Adopt meeting schedule for 2023.

PURPOSE

Review proposed meeting calendar for the Sustainability Framework Advisory Committee.

EXHIBITS

1. Agenda Information Sheet
2. Draft Calendar

Respectfully submitted:
Katherine Barnett
940-349-8202

Sustainability Framework Advisory Committee Schedule - 2023

January 27, 2023	215 E. McKinney	1pm
February 24, 2023	215 E. McKinney	1pm
March 24, 2023	215 E. McKinney	1pm
April 28, 2023	215 E. McKinney	1pm
May 26, 2023	215 E. McKinney	1pm
June 23, 2023	215 E. McKinney	1pm
July 28, 2023	215 E. McKinney	1pm
August 25, 2023	215 E. McKinney	1pm
September 22, 2023	215 E. McKinney	1pm
October 27, 2023	215 E. McKinney	1pm
November 17, 2023	215 E. McKinney	1pm*
December 22, 2023	215 E. McKinney	1pm

*indicates shift from 4th Friday



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File #: SFAC23-004, **Version:** 1

AGENDA CAPTION

Hear a follow up presentation on the current status of the GreenSense Energy Efficiency and Solar Rebate Programs. Discuss and consider various options to bring more effective programs to our DME customers.



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AGENDA INFORMATION SHEET

DEPARTMENT: Denton Municipal Electric

DCM: Antonio Puente, Jr., DME General Manager

DATE: January 27, 2023

SUBJECT

Hear a follow up presentation on the current status of the GreenSense Energy Efficiency and Solar Rebate Programs. Discuss and consider various options to bring more effective programs to our DME customers.

DISCUSSION

The Sustainability Framework Advisory Committee (SFAC) received a report from Denton Municipal Electric (DME) August 31st, 2022. Staff will provide a follow up presentation on options and a Memo answering the questions SFAC members brought up during the last discussion.

EXHIBITS

- Exhibit 1: Agenda Information Sheet
- Exhibit 2: Memo
- Exhibit 3: Presentation

Respectfully submitted:
Bill Shepherd
Executive Manager of Business Services

MEMORANDUM

DATE: January 17, 2023
TO: Sustainability Framework Advisory Committee
FROM: Bill Shepherd
SUBJECT: Q&A from August Presentation on Solar and GreenSense

On August 31st Staff gave a program update of the DME Solar and the GreenSense programs with results and recommendations. At the conclusion of that meeting members posed questions that needed some written explanation. Below you will see the questions/comments listed and the answers.

- 1. What program provides the biggest bang for the buck?** The presentation highlighted how much more kWh were reduced through the GreenSense program than with Solar. Reducing it down to kWh reduced per dollar spent it would be 19.26 kWh reduced per dollar spent for GreenSense vs. 3.29 kWh reduced per dollar spent for solar rebates. Note, solar amount per dollar spent does not include the additional cost of DME buying back energy from PV customers at a premium. In terms of environmental impact, since all power supplied to DME customers is renewable, adding additional roof-top solar installations has no impact on the carbon footprint while the remaining green sense program have the potential to reduce community wide carbon emissions especially if the home or business is heated with natural gas.
- 2. How can we reduce the most carbon?** DME's entire energy supply is already 100% offset with Carbon Free Renewable Energy. Using sustainability funds to invest in improving energy efficiency in homes and businesses that use natural gas for space heating along with incentivizing the adoption of electric vehicles has the highest potential carbon reduction potential.
- 3. How much of our offsets are needed to balance the DEC plant?** All carbon emissions from the DEC are currently offset through offsetting generation of emission free energy from DME's contracted renewable resources. Each year DME generates all the energy needed to meet the electric demand of DME customer plus sufficient zero emission energy to fully offset the DEC carbon emissions.
- 4. Need to express impacts with units that people understand instead of kWh. Such as \$\$ or Tonnes of Carbon, etc.** From the presentation, the impact of the GreenSense program has been a reduction in purchase power of 41,492,641 kWhs which is expressed as equivalent to removing 3,458 homes off the grid or 22,585 Tonnes of CO₂. In dollars, it's equivalent to saving our customers about \$4.5 million over that time span. The reduced power purchase impact of the Solar program has been 11,479,104 kWh which is expressed as equivalent to removing 957 homes off of the grid or 6,248 Tonnes of CO₂. In dollars, it's equivalent to saving those customers \$1.2 Million over that time span.

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5. **Balance Reliability/Rates/Renewables**
 - a. **Would like to see DME balance rate equity without sacrificing reliability and renewables.** The proposal would provide a positive step towards ensuring rate equity between those with PV systems and those without. PV systems would continue to be allowed to interconnect and DME will continue to enable the offset of the customer's entire load with renewables. Regardless of the policy direction that DME receives from its governing bodies, service reliability will remain one of DME's highest priorities. Allocating DME's fixed costs on a true cost of service basis restores rate equity amongst our customers and enables DME better maintain the high level of reliability we enjoy today.
 - b. **In general this member supports sunsetting the rebates.**
6. **Supports weatherization.** This member believes programs will be expanded with redirection of solar rebate funds to GreenSense programs.
7. **This member likes the concept of recovering the fixed cost from all customers**
 - a. **Fixed minimum bill of \$64 (\$62.55 was actual number).** Can be discussed during presentation.
 - b. **Consider a rate structure that allows the customer with DG to eat into the fixed cost by providing additional solar energy to DME.** This would require the average customer to provide an additional 1834 kWh per month flowing back to DME to offset fixed charges. This not only continues to encourage oversizing of systems, it would not be an economically feasible solution for customers given the added expense. Finally, our current billing system would not be able to track these net flows back in a way as to offset the fixed price component of that customer's bill.
8. **All onboard with Equity, could we put the different ideas side by side to compare?**
Can be discussed during presentation.
9. **Wants to see a breakdown of the number of customers impacted by our recommendations.**
 - a. **Those that would see increases (existing solar DG) and amount of increase.**
Can do this on a per average PV customer basis, but effectively would be the fixed cost recovery that we land on which will be above and beyond their usage.
 - b. **Those that do not have solar DG – the level of savings that they will see.**
Every \$1.5 million in savings to DME results in a potential 1% reduction to upward rate pressure based upon current DME operating costs. This would not be a direct realized savings to non-PV customers, but more so the ability to reduce or delay needed rate increases.

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- 10. Wants to know why a customer that has solar DG would want to be impacted negatively.** The problem with having an overly generous program such as DME's, any change or reduction of incentives will be looked at negatively. DME's existing solar GreenSense program requires all customers that don't have solar PV to fund the incentives and subsidies paid to those that do. The program was developed when such incentives and subsidies were deemed necessary to help customers afford the systems. Now, our community is supplied with 100% renewable energy and staff believe that changes are necessary because the program encourages those customers who can afford the upfront cost or have the credit strength to finance the installation to use funds from those who can't afford solar PV to realize the payback and return on investment. In reality staff's proposal is bringing the level of incentives down to a more reasonable and sustainable level that is more in line with the current PV industry which has made huge strides in efficiency and price reductions. DME needs to keep all 61,000 customers in mind when determining rate equity.
- 11. Consider other structures that would lessen the impact to existing solar DG customers.** Will be included with next presentation
- 12. Can we laser focus to only impact those that are heavy users/abusers instead of impacting others?** The original recommendation would have a larger impact on those heavy users/abusers (oversized systems) than on the customers who have systems that are right sized for their home.
- 13. Savings should be to the DME consumer.** The whole premise of the recommendation is to make rates equitable across all customer categories and make sure customers are paying their fair share of fixed costs.
- 14. Okay with higher fixed charges to recover their fixed costs, but also doesn't want to negatively impact those who already have solar.** Would be very difficult to have it both ways without doing some form of grandfathering of existing systems. Don't recommend as that gets messy and hard to track as time goes on. There are also rate discrimination concerns associated with such a grandfathering approach.
- 15. Believes that legacy solar customers should be effectively held whole based upon the system that was in place when they installed.** This would require a grandfathering of existing systems. See above concerns.
- 16. Believes that there should continue to be rebates offered to new systems as they will help the grid as a whole get to 100% renewable faster than without the rebates.** DME has already demonstrated we are 100% renewable. It was also demonstrated that PV systems continue to be installed well after rebate dollars are exhausted. Most of the other utilities in TX have already discontinued PV rebates, most recently CPS announced last Fall that's its program expires at the end of December 2022. That money can go much further to reduce usage and demand by adding to the GreenSense programs. The greenest kWh is the one that's not used.

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- 17. We should in no way discourage PV in Denton.** Systems will continue to be allowed to interconnect. It's hard to say our proposed changes won't discourage some customers from going solar, but the levels of incentives are currently way too generous based on the current state of solar. However, we have already shown how systems continue to be installed well after rebate dollars are exhausted.

 - a. Especially in low-income neighborhoods.** This is more of a housing stock issue than it is an economic one. PV should be the last thing to consider on a house with a poor building envelope, HVAC, and appliances. If the desire is to channel some of those avoided rebate dollars to a low-income PV program, just remember other efficiency and building envelope issues need to be addressed first as they have the highest potential to reduce monthly utility bills and carbon emissions.
- 18. Still interested in Community Solar.** Staff is still looking at this option.
- 19. Doesn't see how Low-Income are subsidizing PV.** All non-solar DME customers are subsidizing PV. Customers who have proportionately higher usage (which includes a lot of low-income housing stock) subsidize at an even higher level. Low income customers are a subset of all non-solar PV customers that provide the subsidy.
- 20. Maybe rebate can be incrementally reduced as the price of PV comes down.** This has already been done a few times over the years and now it's time to eliminate it all together given the amount of systems that continue to be installed after the rebate dollars are exhausted. System prices have gone down 64% in just the last decade. Providing rebate dollars to customers who would have installed the system anyway is called free ridership and it's not an effective use of rate base supported dollars.
- 21. Wants to keep the rebate but restructure to lower amount or spreading it out to more systems.** Can introduce a flat rate that's much lower and cap the system sizes allowed, but rebates will still be going to a lot of customers who would have installed a system regardless of the rebate. The Federal Tax credit going to 30% for the next 10 years gives us a great opportunity to pull back from our incentive without a net impact to the customer and channel it to more effective and needed programs.
- 22. Not sure that weatherization is as affordable as solar rebates.** The meaning behind this comment is it's easier for a customer to get financing on a PV system and in-turn get a rebate than it is for a customer to get financing on other efficiency improvements. Financing is just as available for HVAC and other higher cost home efficiency measures as it is with solar. But also, Solar should be the last measure implemented if there are other deficiencies in the house such as an inefficient HVAC system, inadequate insulation, leaky windows, etc.
- 23. Would consider limiting the size of new systems.** This should be implemented regardless, but getting rid of the overly generous rate structure we currently have that encourages oversizing will have the same effect.

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- 24. Would consider a connection fee and fixed monthly fee to make it more fair.** Already a \$150 building permit fee, but that doesn't go to DME. It goes to Development Services. The fixed monthly fee is what we're trying to capture. A facility charge of \$60 per month would come close to making it fair.
- 25. Would like to know how other municipalities have resolved the fixed cost recovery and what they have done.** The presentation demonstrated that most other PEER utilities don't have the problem because they only pay an avoided generation cost for everything coming back from the customer. Some go one step further and provide no credit for generation that exceeds the customers usage.
- 26. Interested in comparative bills for other MOU communities.** This was provided in slide 12 of the presentation
- 27. Will it affect our Sol Smart Designation?** Elimination of Rebates and restructuring our net billing rate will not affect Sol Smart Designation.
- 28. Concerned that changes would impact new businesses coming to town wanting to be solar.** This concern is far outweighed by businesses coming to a 100% certified renewable power supply for their entire operation. Not many utilities in the country can provide this benefit to their business customers without an added premium.

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GreenSense Program Follow Up Discussion

Denton Municipal Electric (DME)

January 27th, 2023



1/27/2023

SFAC23-004

Program Cost Comparisons

Energy Efficiency Incentives

- \$2,154,348 Spent
- 5,758 rebates issued
- 41,492,641 kWh reduced
- Equivalent to 3,458 homes
- 22,585 Tonnes CO2
- 19 kWh reduced per dollar spent

Solar Rebates

- \$3,488,237 Spent
- 605 rebates issued
- 11,479,104 kWh “offset”
- Equivalent to 957 homes
- 6,248 Tonnes of CO2
- 3 kWh offset per dollar spent



Electric Billing Components

Base Rates

- **Facility Charge - \$8.67 / Mo**
 - Fixed based on customer category
 - Includes Customer Service, Billing, Meter Reading, Rebates and part of the Distribution system
- **Usage Charge - \$0.0684 / kWh**
 - Collects fixed costs associated with Generation, Transmission, and rest of the Distribution system from non-demand customers
 - Collects some variable costs associated with Purchase Power

Pass Through Rates

- **Energy Cost Adjustment (ECA) - \$0.0341 / kWh**
 - Collects remaining variable costs associated with Purchase Power
- **Renewable Cost Adjustment (RCA) - \$0.0381 / kWh**
 - Premium payment paid for customer generated renewable energy
 - Made sense prior to DME being 100% renewable



DME Bill Breakdown Current

Residential Non-Solar Customer

	1000 kWh Consumption
Facility Charge	\$8.67
Usage Charge	\$68.40
Energy Charge (ECA)	\$34.10
Renewable Credit (RCA)	N/A
Total Bill	\$111.17

Residential Solar Customer

	1000 kWh Consumption	1000 kWh Return
Facility Charge	\$8.67	-
Usage Charge	\$68.40	\$68.40
Energy Charge (ECA)	\$34.10	-
Renewable Energy Credit (RCA)	-	\$38.10
Totals	\$111.17	\$106.50

Net Bill \$4.67

Fixed Cost Contribution: \$62.55 or 56%

Shortage of Fixed Cost: **(\$57.88)**



Option Summary

Option 1 Status Quo

\$500,000 Solar Rebates

\$500,000 Efficiency Rebates

No Changes to Net Billing Structure and Rate

Option 2 Funds Reallocation

Sunset Solar Rebate
No Net Billing Changes

\$500,000 Creating Impactful, Sustainable Programs

\$1,000,000 Efficiency Rebates

Option 3 Sunset Solar

Sunset Solar Rebate

Sunset Net Billing Structure and Rate

\$500,000 Creating Impactful, Sustainable Programs

\$1,000,000 Efficiency Rebates

Option 4 Phased In

Sunset Solar Rebate

\$500,000 Creating Impactful, Sustainable Programs

Excess Generation pd at ECA

Phase in higher Facility Charge '24-'28

RCA equal to ECA

\$1,000,000 Efficiency Rebates



1/27/2023

SFAC23-004

5

Staff Recommendation – Option 4

- Discontinue PV Rebate and redirect \$500,000 to other GreenSense Programs for a total of \$1,000,000
- Replace RCA with ECA
- Phase in higher facility charge in 5 steps, FY24-FY28
 - FY24 - \$19.45
 - FY25 - \$30.23
 - FY26 - \$41.01
 - FY27 - \$51.79
 - FY28 – \$62.55



Direction from Committee?

- Option 1 – Status Quo
- Option 2 – Discontinue Rebate redirect Dollars
- Option 3 – Discontinue Rebate and Restructure Net Billing
- **Option 4 – Phased In (Alternative Approach) Staff**

Recommendation



Questions?





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Legislation Text

File #: SFAC23-005, **Version:** 1

AGENDA CAPTION

Receive a report hold a discussion and provide feedback regarding the Climate Action and Adaptation Plan development.



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AGENDA INFORMATION SHEET

DEPARTMENT: Environmental Services and Sustainability

ACM: Christine Taylor, Assistant City Manager

DATE: January 27, 2023

SUBJECT

Receive a report hold a discussion and provide feedback regarding the Climate Action and Adaptation Plan development.

DISCUSSION

Committee will receive a report from Sustainability Solutions Group (SSG) regarding Climate Action and Adaptation Plan progress to date, including a 2019 inventory comparison, the Business-as-Planned Projections, and initial low carbon ideas. In addition, SSG will also discuss an updated project timeline and next steps including public engagement, and upcoming meeting topics.

EXHIBITS

Exhibit 1: Agenda Information Sheet

Exhibit 2: Presentation

Respectfully submitted:
Katherine Barnett
Sustainability Manager



City of Denton:

Climate Action Adaptation Plan

GHG Inventory and Business-as-Planned Results
SFAC Workshop

January 27th, 2023



1/27/2023

SFAC23-005

SSG



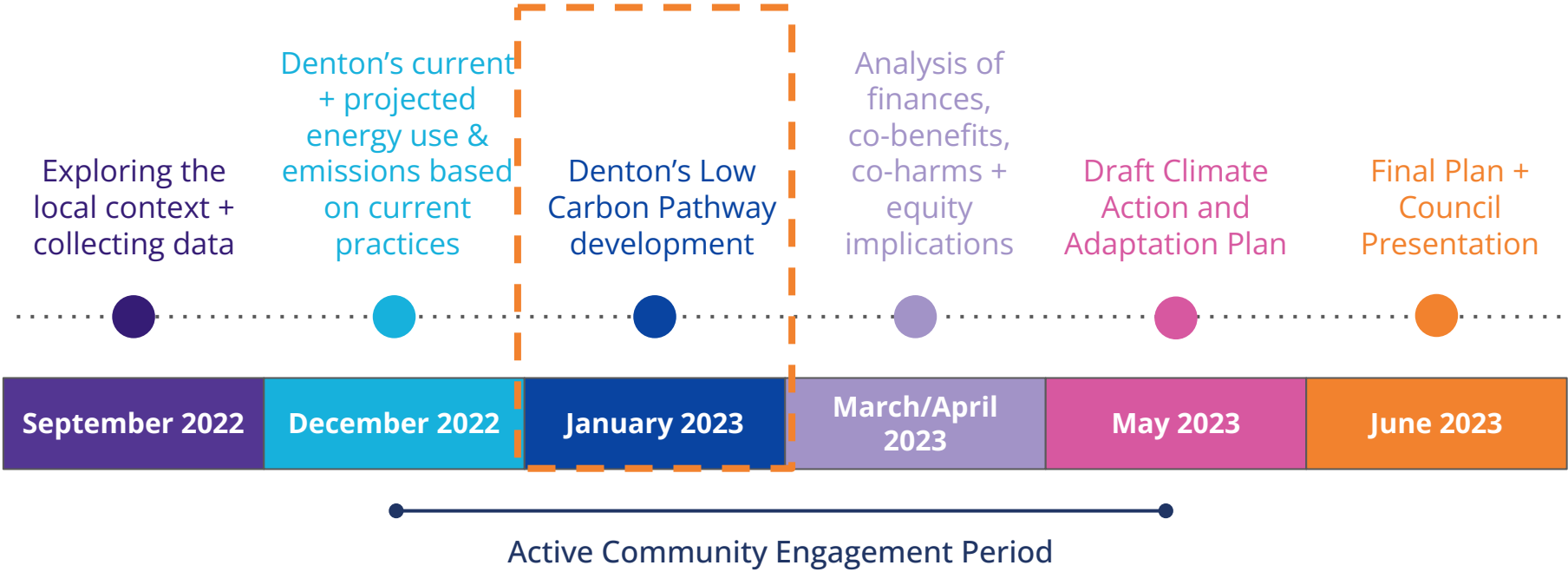
Agenda

Agenda

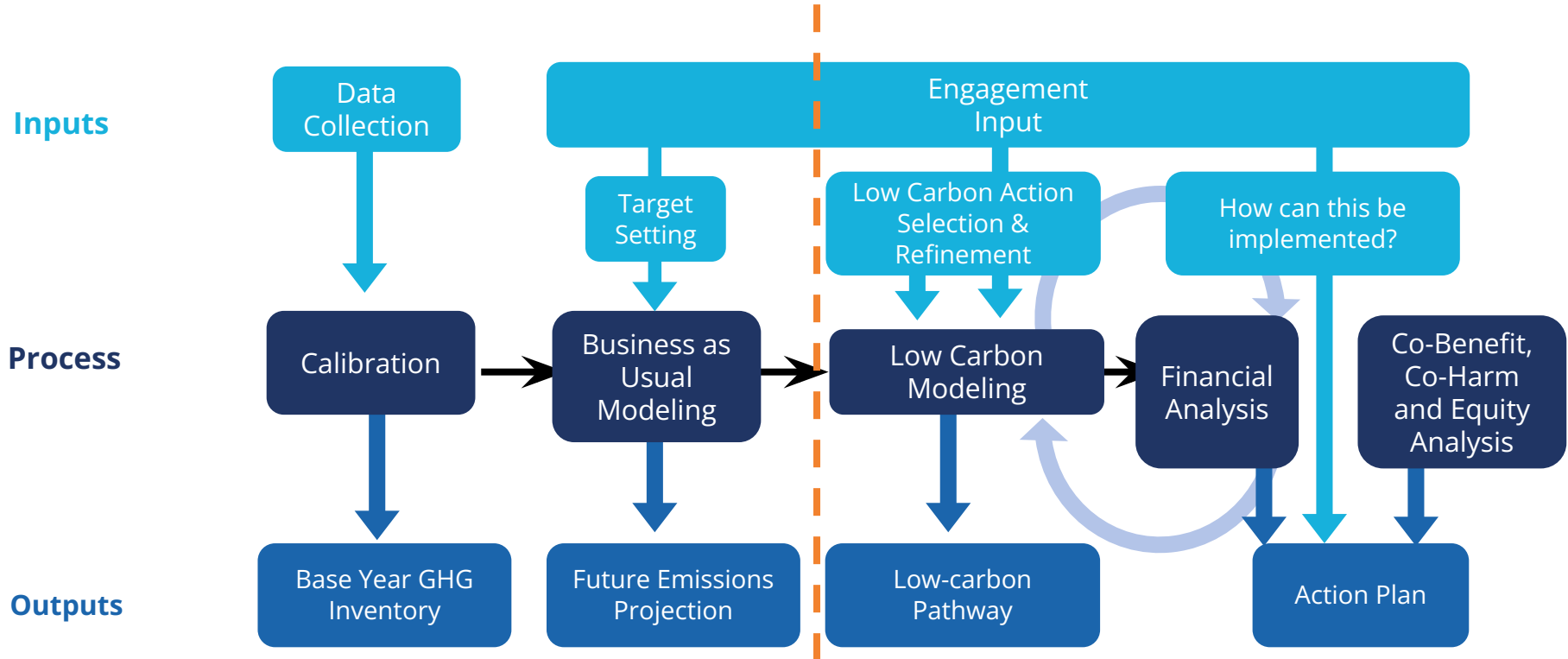
- Project Overview
- 2019 Updated Inventory Report
- Business-as-Planned Projections
- Significant Results
- Initial Low-Carbon Ideas
- Discussion
- Next Steps

Project Overview

Denton's CAAP Project Timeline



Approach: Iterative Feedback + Analysis



SFAC Input

January:

Inventory and Business-as-Usual Workshop



Identify key opportunities and challenges

March:

Targets and Actions Workshop



Review and recommend targets and actions

April:

Actions Prioritization Workshop



Prioritize recommended low-carbon actions

May:

Draft Plan Review



Provide feedback prior to finalization

Project Outputs

- ✓ Baseline greenhouse gas inventory for Denton
- ✓ Denton's forecast of energy use and emissions up to 2050 under business-as-usual scenario
- Recommended low-carbon pathway to a net-zero Denton by 2050
 - Catalog of actions and policies
 - Financial and economic analysis
 - Co-benefits, co-harms and equity analysis
 - Implementation and progress monitoring framework

1/27/2023

SFAC23-005



Inventory Report

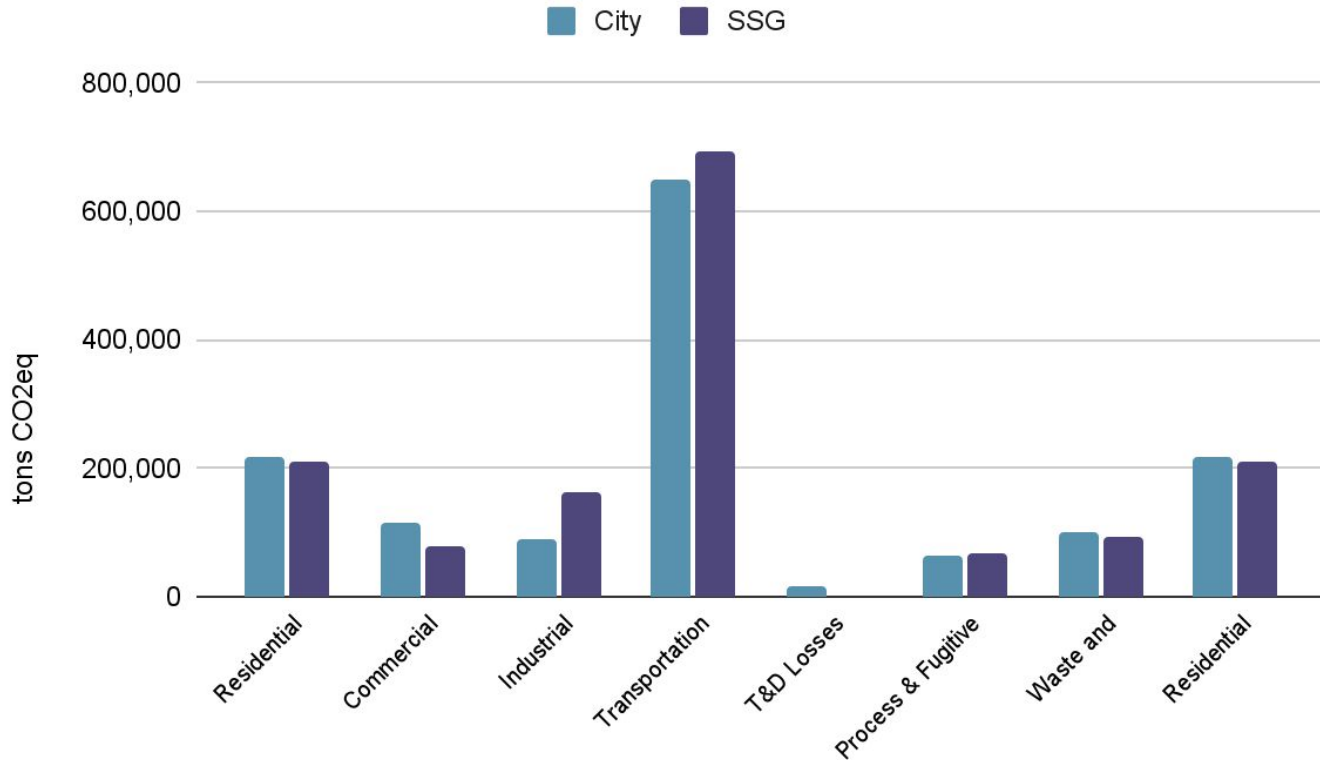
- This greenhouse gas inventory measures emissions generated by key activities within City of Denton's territorial boundaries.
- Provides a snapshot of baseline emissions and identifies opportunities to efficiently use energy, reduce emissions and manage waste.

2019 Modelled Greenhouse Gas Inventory

Sector		Total by Scope (tCO2e)				Total	Total by city-induced reporting level (tCO2e)	
		Scope 1	Scope 2	Scope 3	Other Scope 3		BASIC	BASIC+
Stationary Energy	Energy use (all I emissions except I.4.4)	213,918	284,006	26,754		524,678	497,924	524,678
	<i>Energy generation supplied to the grid (I.4.4) *</i>	0						
Transportation (all II emissions)		466,217	145	210,519		678,881	466,362	676,881
Waste	Generated in the city (all III.X.1 and III.X.2)	95,182		0		95,182	95,182	95,182
	<i>Generated outside city (all III.X.3)</i>							
IPPU (all IV emissions)								
AFOLU (all V emissions)								
Total		775,317	284,151	237,273	0	1,296,741	1,059,468	1,296,741

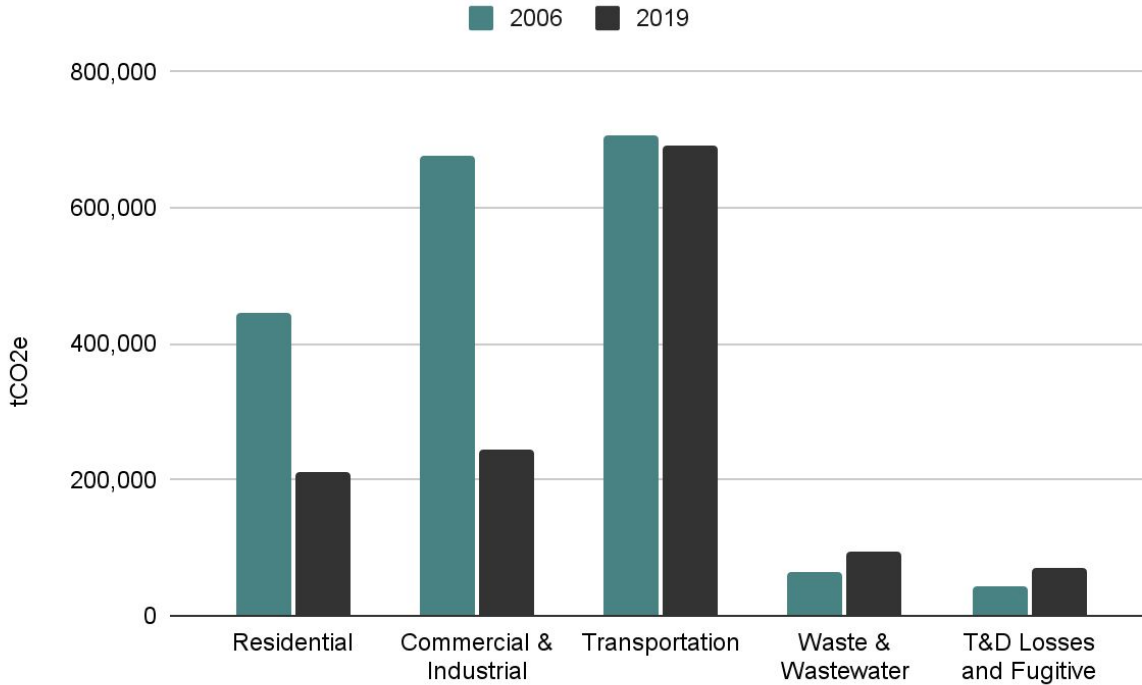
Inventory Comparison:

2019 **City** Inventory to 2019 **Modelled** Emissions Inventory



Inventory Comparison:

2006 City Inventory to 2019 Modelled Emissions Inventory



2006

Population (2008): 115,022
Emissions per capita: 16.8 tCO₂eq
Total emissions: 1,938,057 tCO₂eq

2019

Population: 136,195 + student population
Emissions per capita: 6.8 tCO₂eq
Total emissions: 1,311,636 tCO₂eq

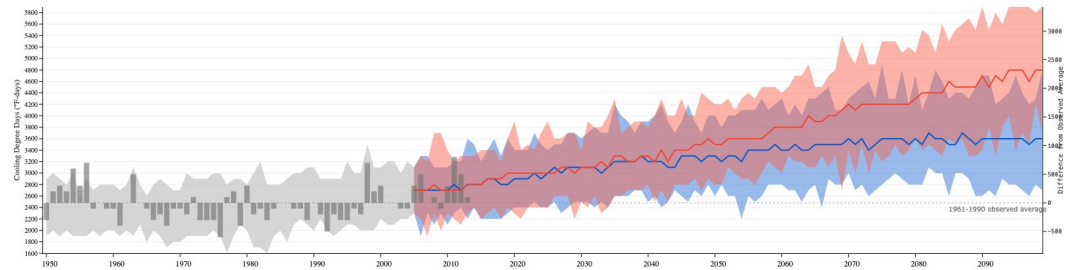
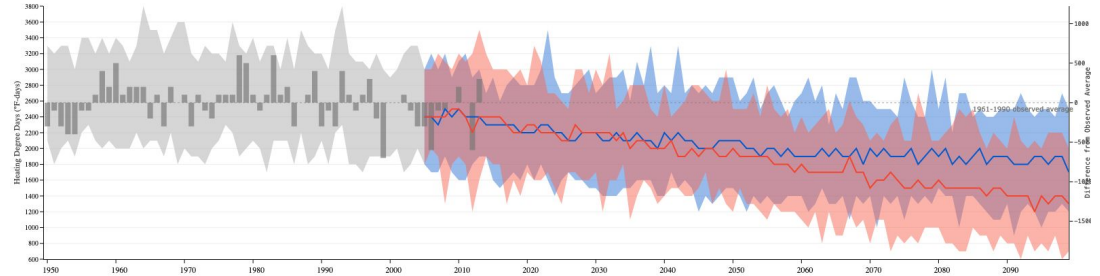
Business-As-Planned Projections

- A business-as-planned scenario incorporates demographic trends with approved and funded plans, policies, and programs to project annual energy use and emissions in the long-term.

Business-as-Planned Key Assumptions

Changes in climate by 2050:

- Heating degree days decrease by 13%, from 2333 to 2033
- Cooling degree days increase by 14%, from 2983 to 3400



Business-as-Planned Key Assumptions

Demographic growth by 2050:

- 67% population growth
- 200+% employment growth



Business-as-Planned Key Assumptions

Energy switch:

- DME's 100% renewable electricity = 91% of electricity used by Denton residents
- Natural gas growth use offset by 9.4% increase in heat pumps by 2030
- Rooftop solar increases 2% annually.



Business-as-Planned Key Assumptions

Buildings:

- Total residences increase to ~90,000,
- Avg home size remains 2000 ft²
- 2.6 million ft² additional, non-residential, building space
- Space and water heating = 45% natural gas and 55% electricity for heat
- 87% of households have air conditioning units, rest have heat pumps



Business-as-Planned Key Assumptions

Transportation:

- Minor mode shift
- National fuel efficiency improvements
- Municipal vehicles produce 25% less emissions by 2025
- Personal vehicles gradually electrify

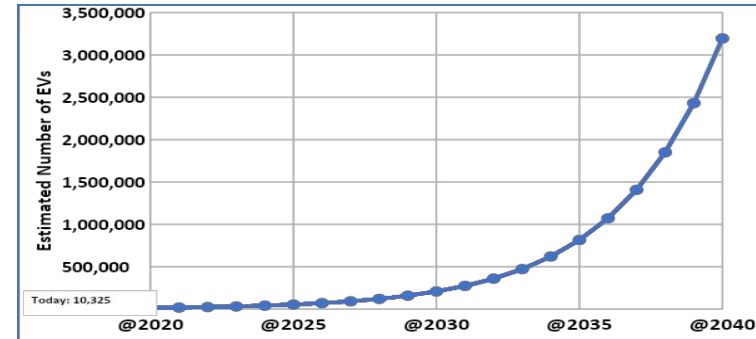
Waste:

- 24% diversion remains constant
- Total waste increases with population

Water and Wastewater:

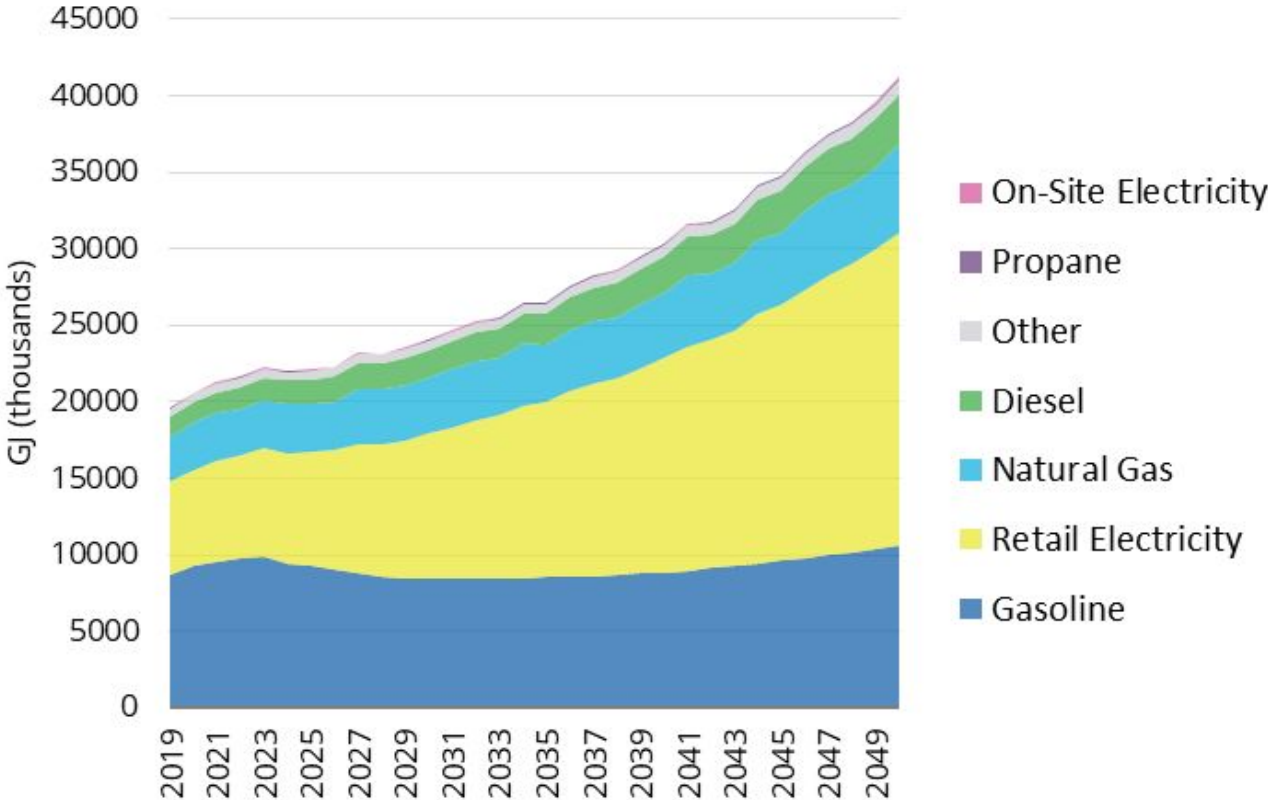
- Water use decreases by 5% per person by 2024
- Wastewater emissions grow with population

Projected growth of EVs in North Texas

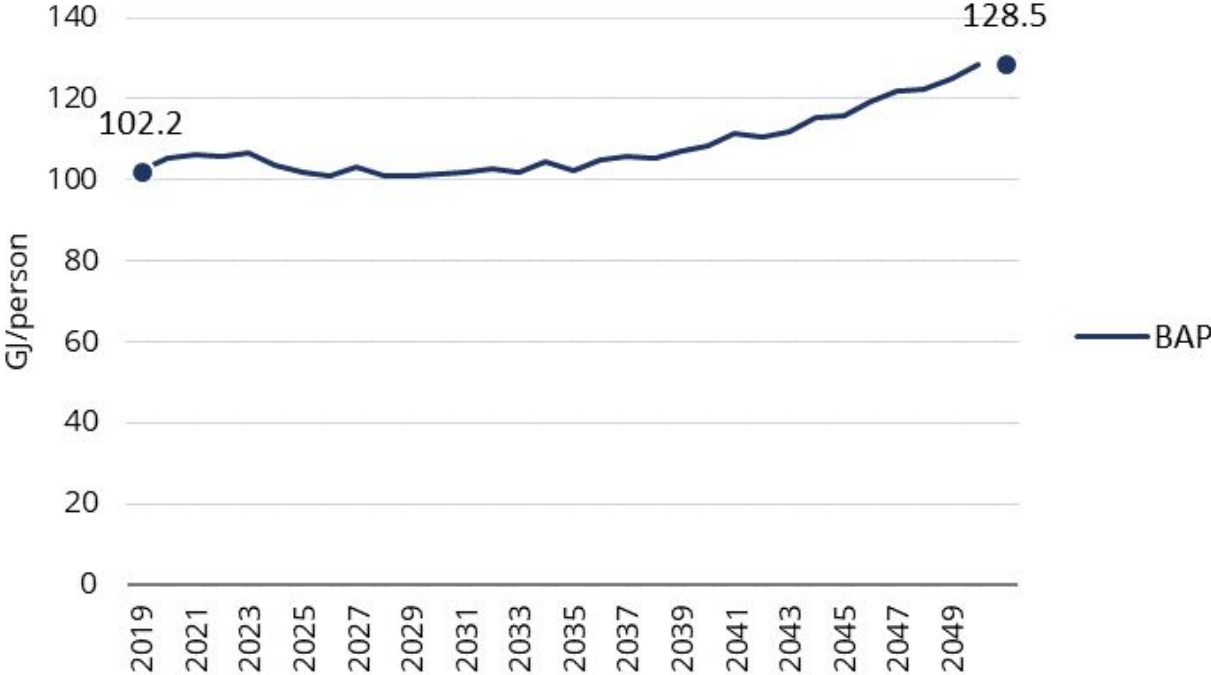


Source: North Central Texas COG

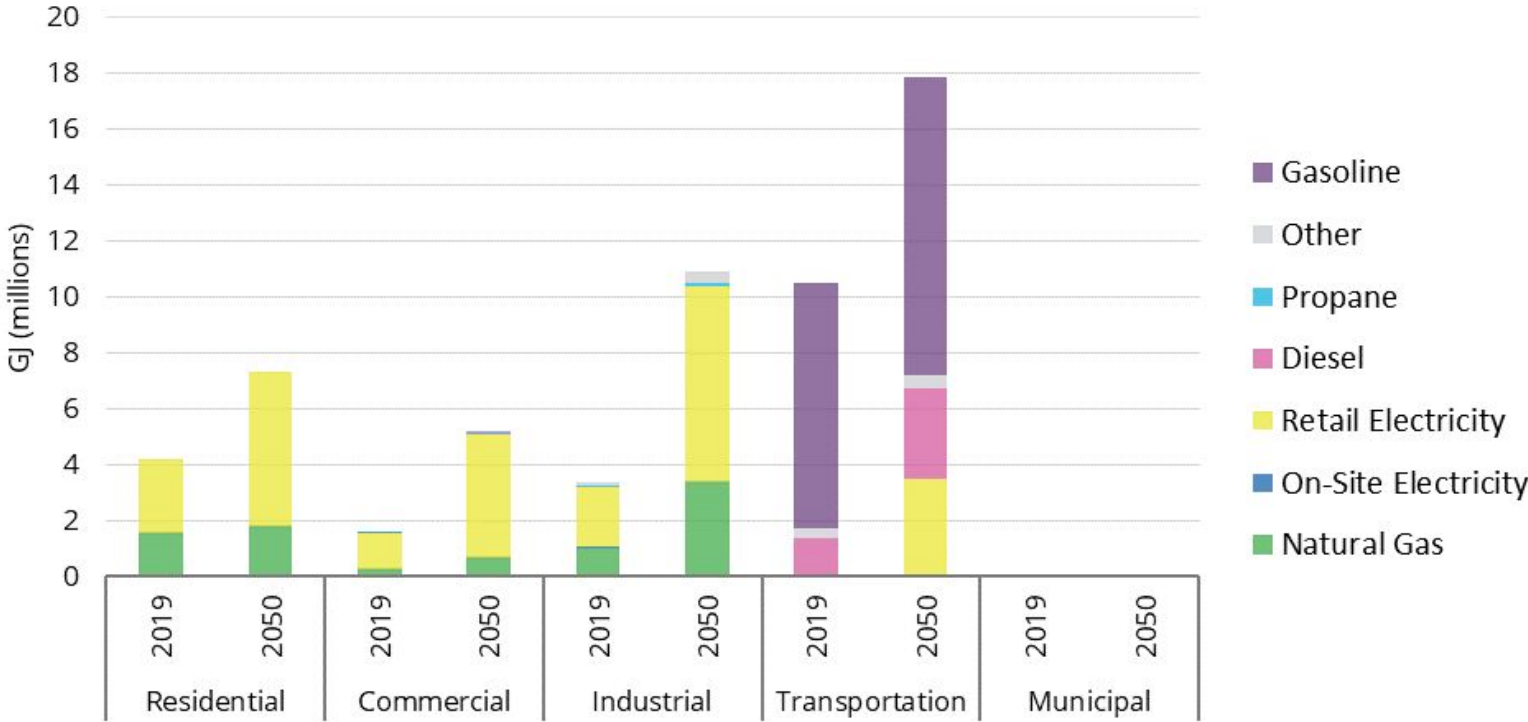
Business-as-Planned: Total Energy Use by Fuel



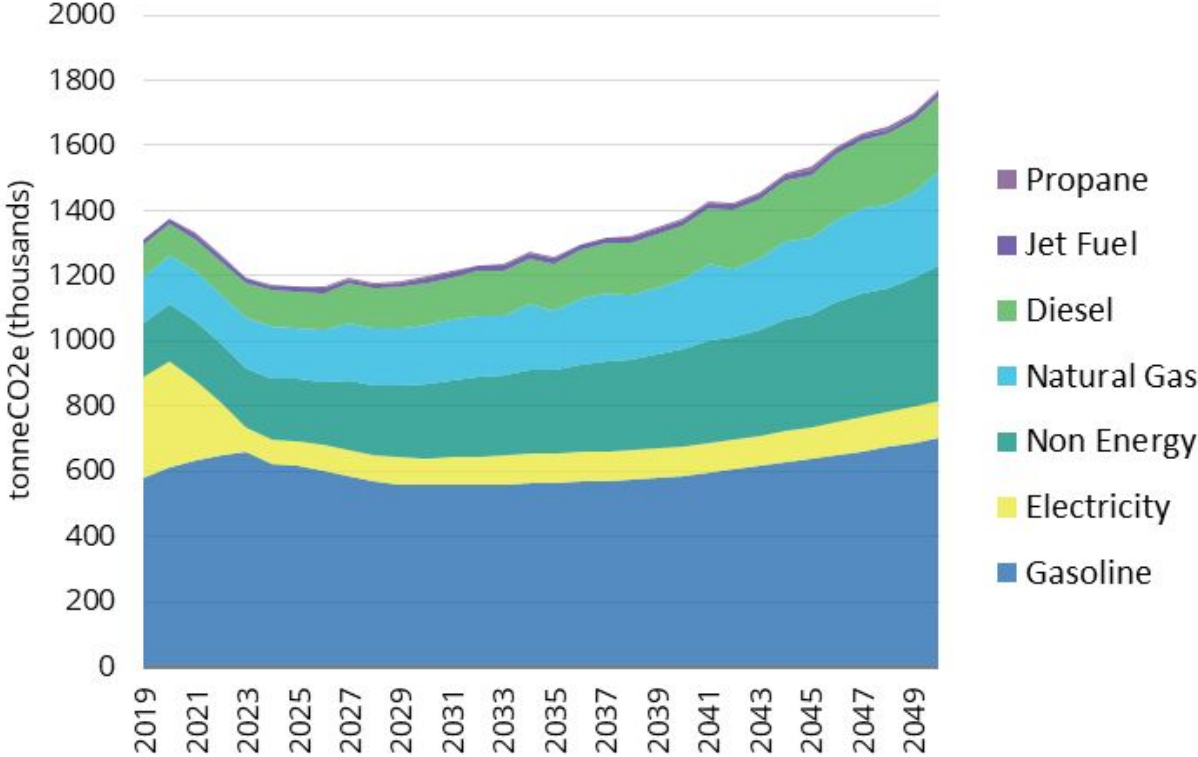
Business-as-Planned: Per Capita Energy Use



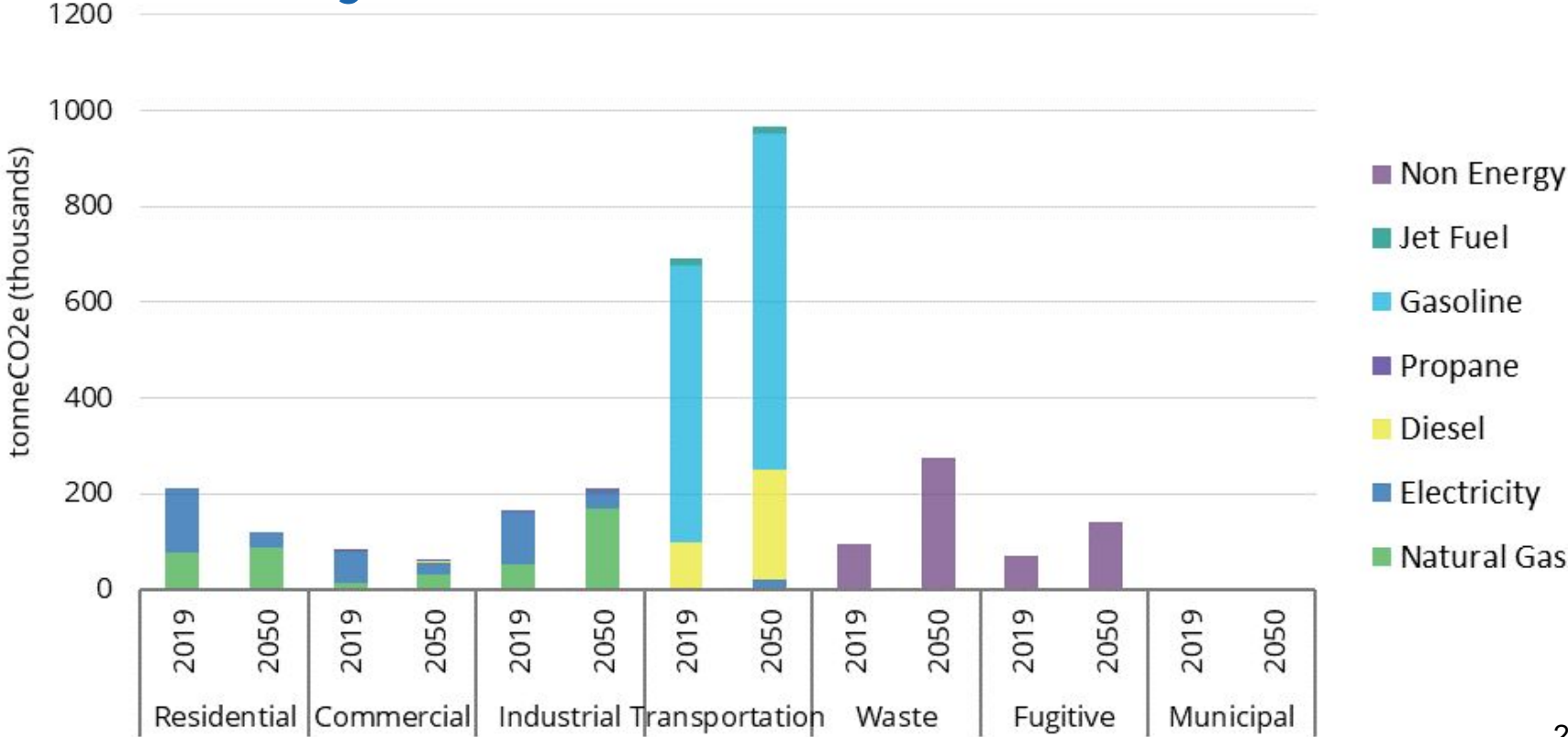
Business-as-Planned: Energy Use by Sector and Fuel



Business-as-Planned: Total Emissions by Fuel

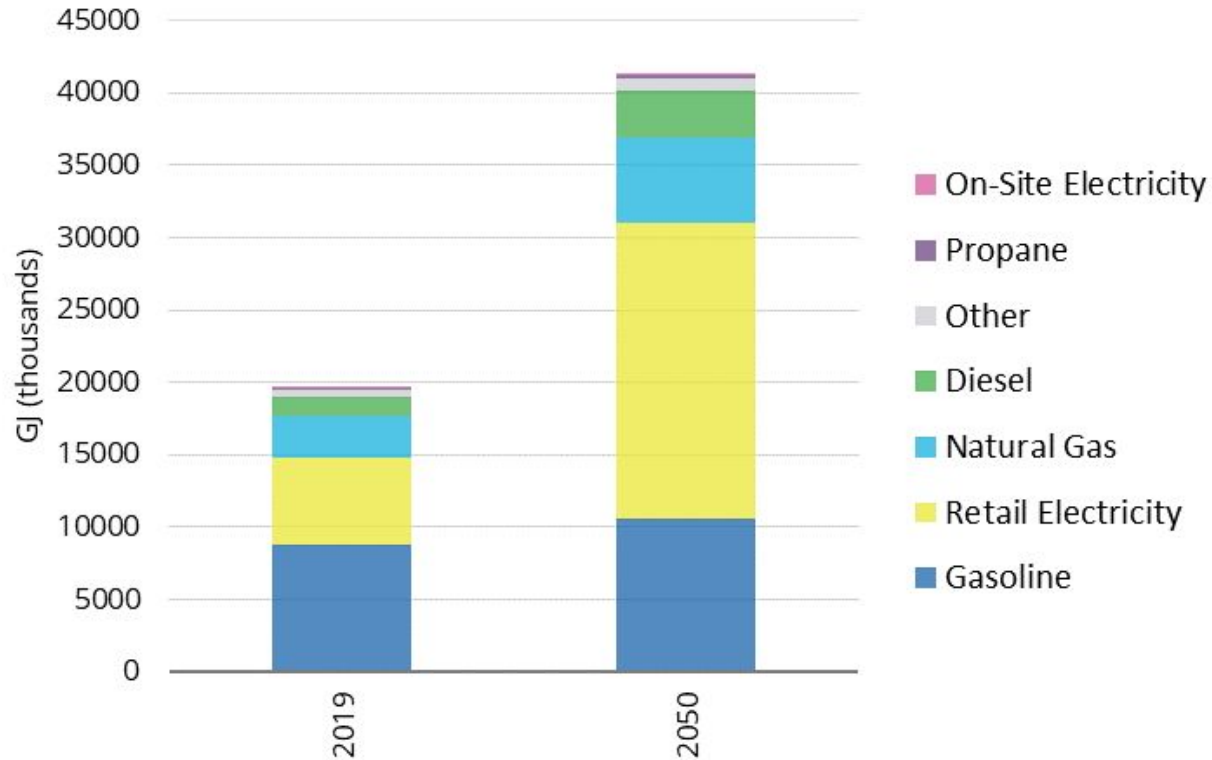


Business-as-Planned: Emissions by Sector and Fuel

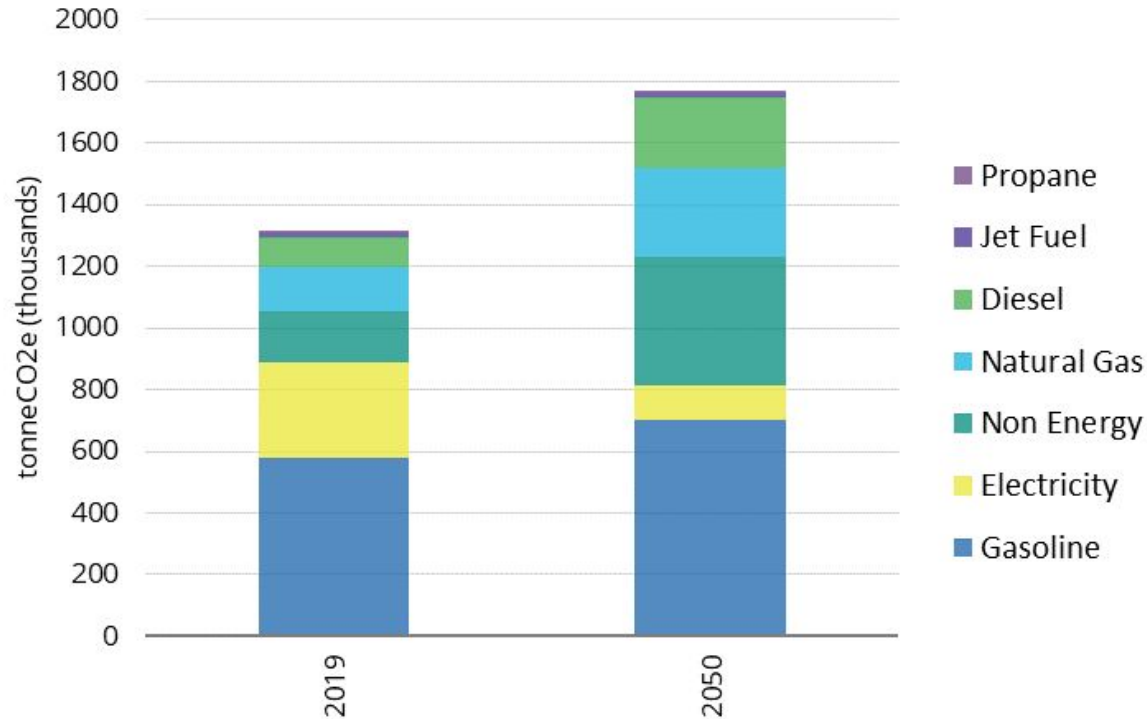


Significant Results

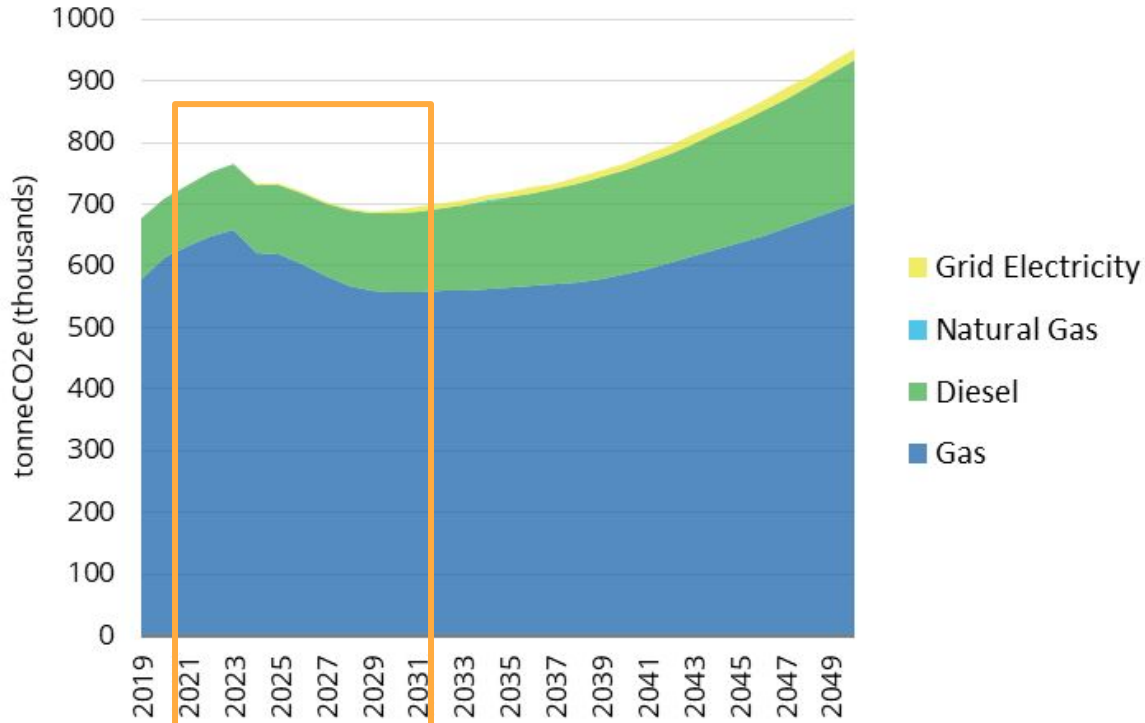
1. Electricity: From 31% to 50% of all energy used



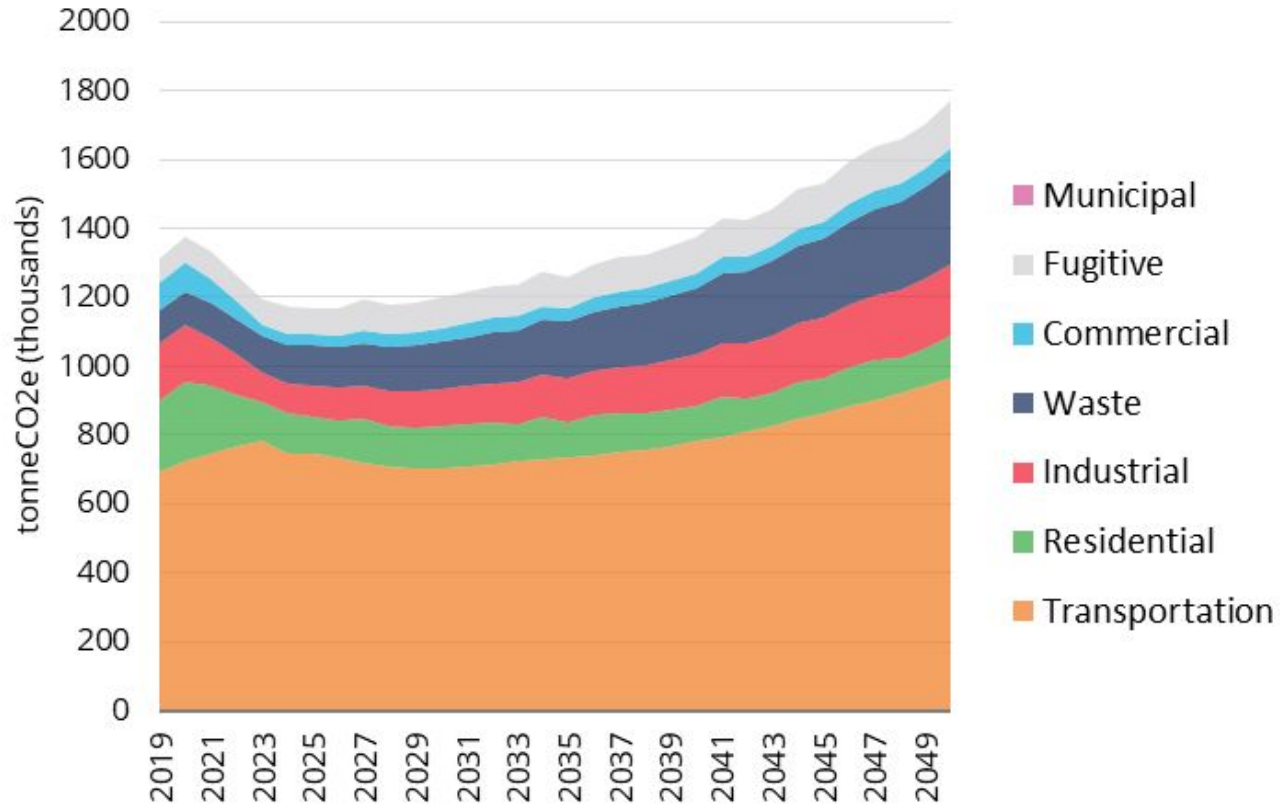
1. Electricity: from 24% to 6% of all emissions



2. Vehicles: Fuel efficiency improvements

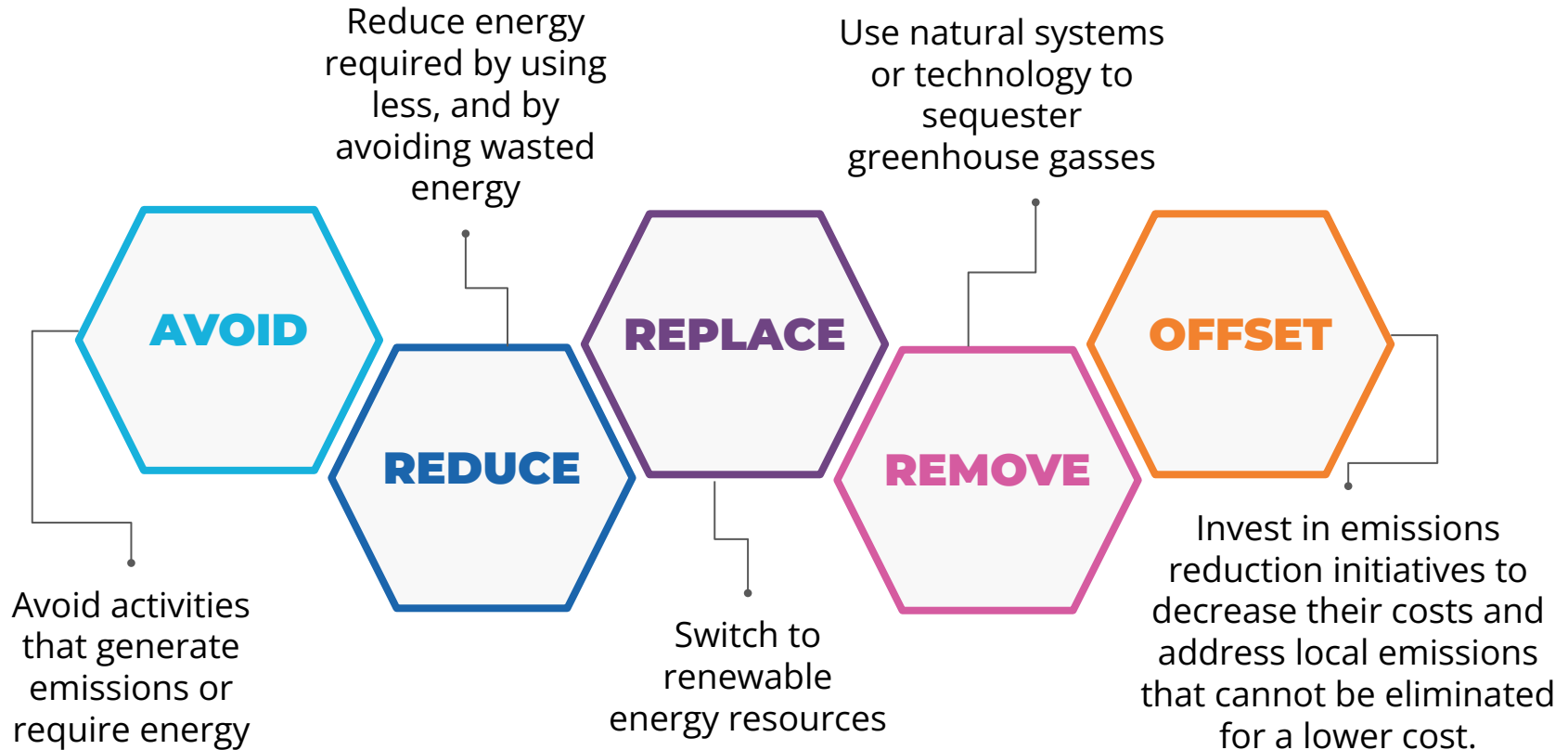


3. Transportation: Emissions continue to rise



Initial Low-Carbon Action Ideas

The Planning Philosophy



15-minute neighborhoods

- Increase opportunities for residents to meet their daily needs within a 20-minute roundtrip walk
- Co-benefits: physical and mental health, support local businesses, reduce air pollution



Low-carbon and healthy streets

- Low- or no-emissions zones
 - Ex., University campuses, Downtown, Master Planned Communities



- Slow / Healthy Streets

Low-carbon transportation

- Leverage Denton's location and existing economy to become a low-carbon transportation hub
 - Ex., EV and e-bike manufacturing
 - Low-carbon shipping and distribution

- Create a Bikes for Business program for in-town deliveries

Sources: Peterbilt, Bunch Bikes, Team London Bridge

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ELECTRIC VEHICLES



Pickup & Delivery

Designed for driver comfort and productivity, the Model 220EV is ideal for pickup & delivery, regional haul and food & beverage applications. The 220EV provides customers with a clean, efficient operation and a range of up to 200 miles.



Renewable energy

- Add significantly more renewable energy and battery storage.
- Increases resilience to blackouts and extreme weather
- Projected large increase in energy consumption creates opportunities for local economic development around renewable energy.



Sources: Blue Green Tomorrow,
Sunverge energy



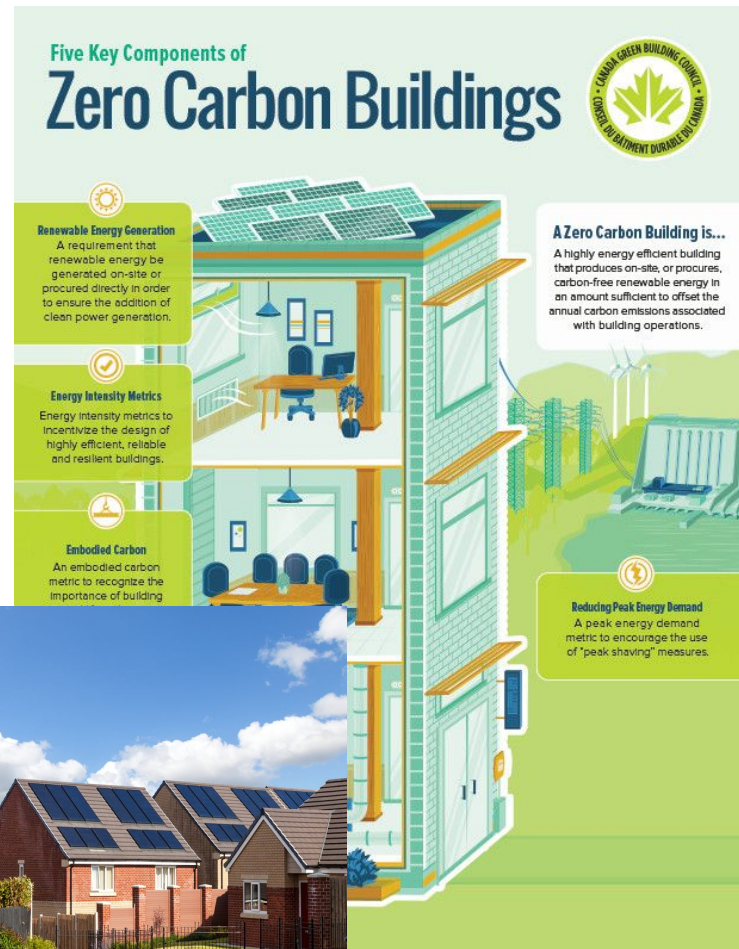
Low-carbon buildings

- Green Building Standards for new construction
- Expand low income weatherization programs
- Increase incentives for heat pumps and efficient appliances
- Energy benchmarking programs for large commercial and multifamily buildings

1/27/2023



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Reducing waste and wastewater emissions

- Educational campaigns to reduce food waste
- Residential and commercial compost collection
- Expand landfill gas to electricity production program
- Energy efficiency improvements at WWTP



Next Steps

Public Engagement Opportunities

Public Workshops



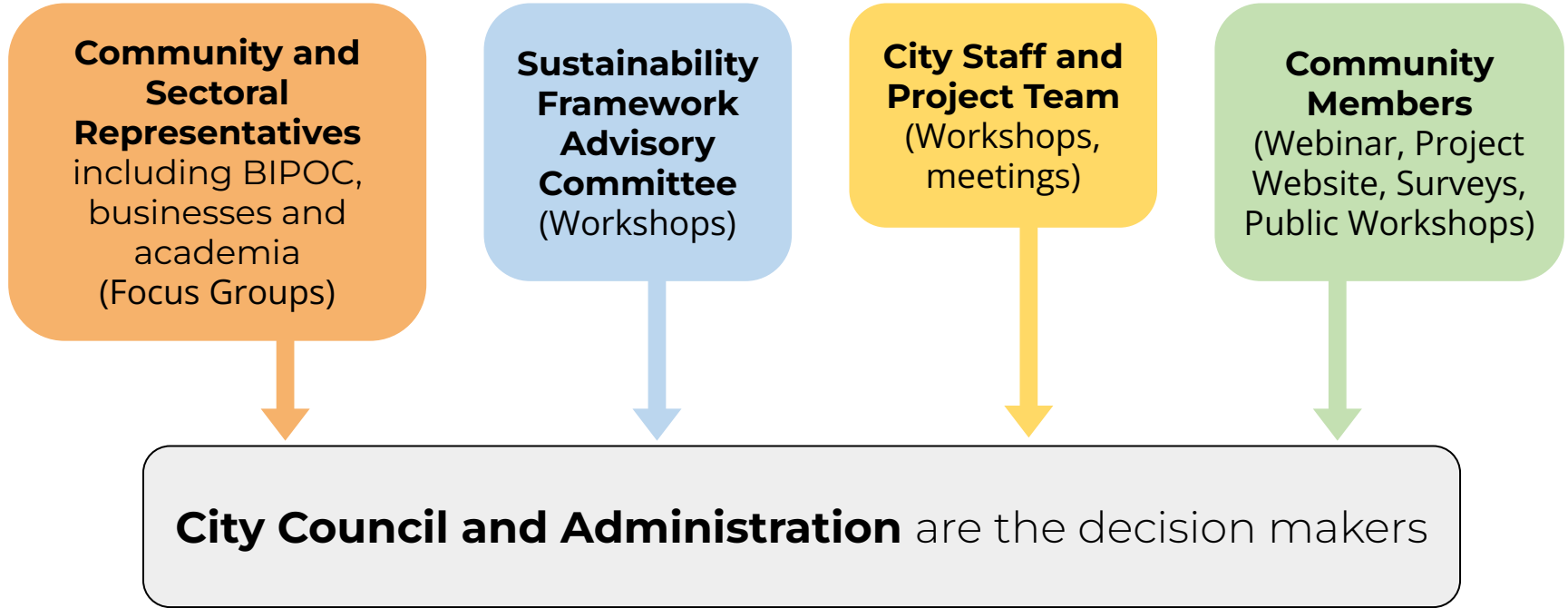
Meeting in a box/
Pop-up kiosks

Crowdsourcing
Actions Survey

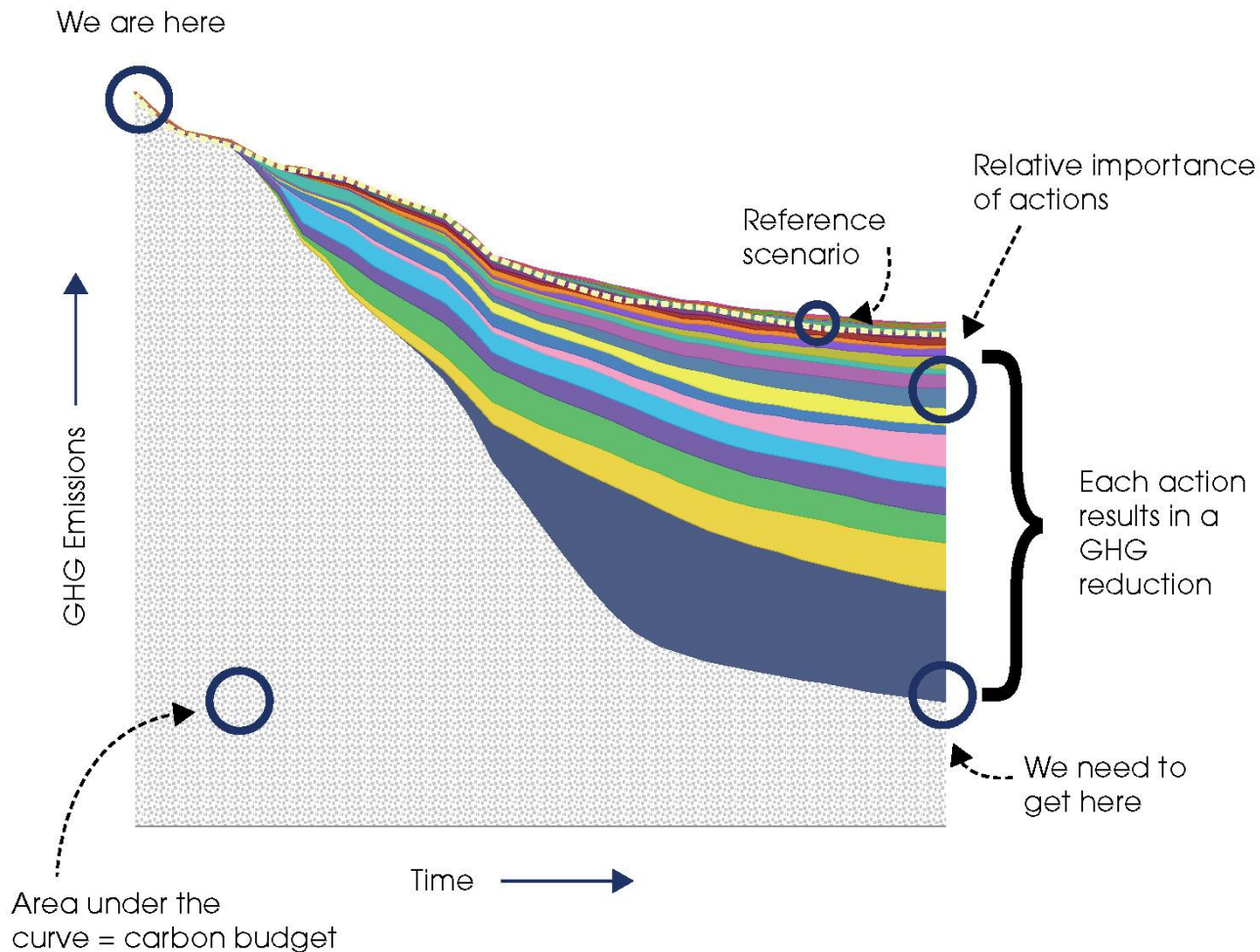
Focus Groups

sustainabledenton.com

Interested and Affected Parties

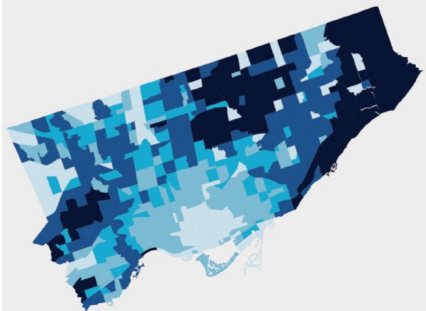


Anatomy of a Roadmap

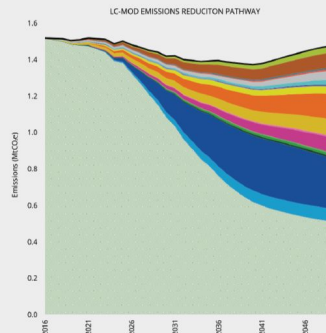


Outputs from the model

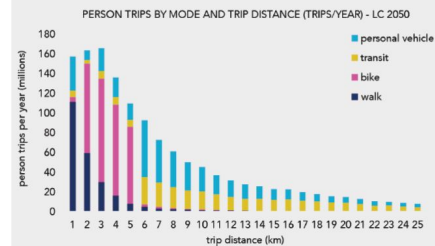
MAPS



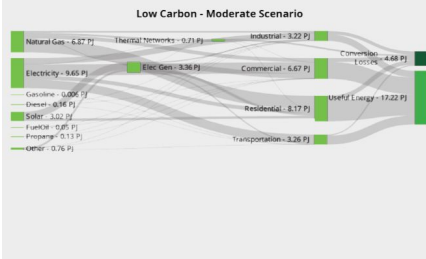
WEDGES



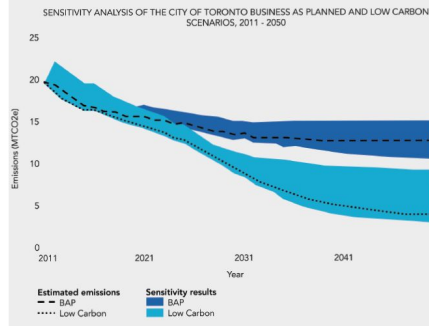
MODE SHARE



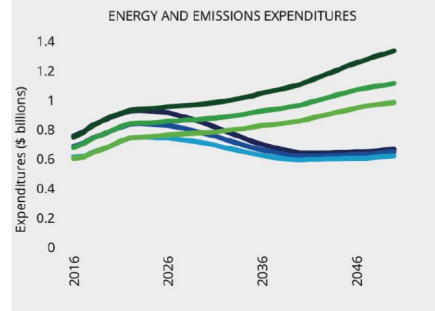
SANKEY



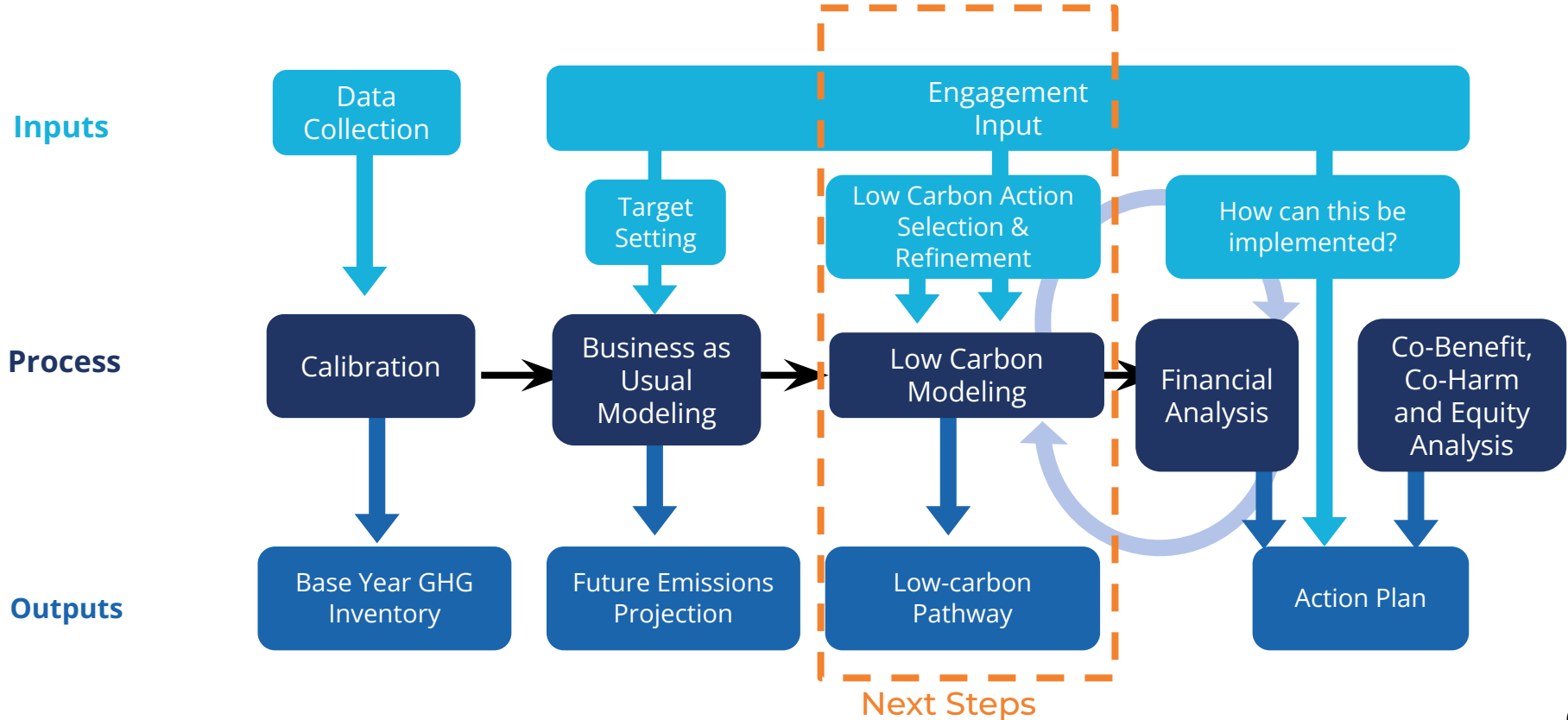
SENSITIVITY



FINANCE



Approach: Iterative Feedback + Analysis



Discussion



Thank you

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SSC





City of Denton

City Hall
215 E. McKinney St.
Denton, Texas 76201
www.cityofdenton.com

Legislation Text

File #: SFAC23-002, Version: 1

AGENDA CAPTION

Staff Reports

1. February Engagement
2. Matrix



MEMORANDUM

DATE: January 27th, 2023
TO: Sustainability Framework Advisory Committee
FROM: Dan Friedman, Sustainability Coordinator
SUBJECT: February engagement opportunities

February will provide a variety of opportunities for citizens to engage with our forthcoming Climate Action and Adaptation Plan. We will have materials ready to hold a series of Meetings in a Box with community groups in March and April and will be offering a sign-up link for groups to request a meeting on our Sustainable Denton website. We will also hold our second Town Hall in late February/early March, with another opportunity for residents to learn about the Climate Action and Adaptation plan and provide their feedback.

On February 18th, we will host activities at the Clear Creek Natural Heritage Center for the Great Backyard Bird Count, a worldwide citizen science event focused on surveying bird populations. We are partnering with Master Naturalists and Parks and Recreation to provide a bird identification hike, a bird migration class, and family-friendly activities. Data from the hike will be entered into the Great Backyard Bird Count's database for research purposes.

We also have opportunities for citizens to engage with recycling activities and education in February. On February 23rd, we will hold a Recycling Class for children at South Branch Library. On February 25th, we will offer a tour of where the City of Denton's recycling facility, along with activities to promote our new [Ready, Set, Recycle!](#) sorting game for all ages.

OUR CORE VALUES

Integrity • Fiscal Responsibility • Inclusion • Transparency • Outstanding Customer Service

#	Date Requested	REQUESTOR	SUPPORTERS	ITEM	DEPARTMENT	STAFF TIME	STATUS	COUNCIL STATUS
1	11/19/2021	Richter		Report on direct power purchases; projections for future usage.	DME		TBD	
2	2/25/2022	Fry		Transportation Overview/ New transportation standards/ broader mobility plan, bike program, vehicle idling standard, sidewalks, infrastructure.	Transportation/ Capital		Future Presentation / Include in CAAP review	
3	2/25/2022	Stevens		Plan with greenhouse gas/ what will be produced under proposed process LFG SW project.	SW		Staff Report	
4	2/25/2022	Briggs/ Richter		Requesting a review of current development codes, parking minimums and on-street parking, tree code and coordination of Sustainability Framework with other plans	Dev. Serv. / CIP		Parking TBD - Tree code complete 6/22	
5	3/25/2022	Briggs		Would like presentation on data center	DME		TBD	
6	6/29/2022	Briggle		Information about Solar Generation with context	DME		January	

#	Date Requested	REQUESTOR	SUPPORTERS	ITEM	DEPARTMENT	STAFF TIME	STATUS	COUNCIL STATUS
7	6/29/2022	Soph		How is Water Utilities planning for growth and climate change in long range plans	Water/ESS		23-Mar	
8	8/26/2022	Soph		Carbon Sequestration potential of current tree canopy	Sust/Parks		TBD	
9	9/23/2022	Fry		Presentation on what other cities are doing on setbacks of wells	ESS		Staff Report	
10	9/23/2022	Briggs		Would like Economic Dev to speak w/ us about preservation, sustainability & economic development	Economic Dev.		Future Presentation	
11	9/23/2022	Soph		Community solar microgrid/ Future worksession	DME		Future Presentation	
12	10/28/2022	Briggs		Tree Canopy- Presentation on tree canopy goals			Future Presentation / Include in CAAP review	