



# Climate Action Planning Institute Task Force - Village of Tarrytown Presentation to Board of Trustees & Public

April 2024

*Westchester CAPI is a project of the Hudson Valley Regional Council and is funded by the DEC Climate Smart Communities Grant Program.*

# Presentation Agenda

1. CAPI: Background and Overview
2. Purpose of Presentation
3. Vision Statement for Climate Action Plan
4. GHG Inventory Summary
5. Emissions Reduction Target for Tarrytown
6. Recommended Strategies
7. Questions and Feedback
8. Next Steps: Community Engagement Schedule

# 1. CAPI: Background

- On July 18, 2019, New York State (NYS) enacted the Climate Leadership and Community Protection Act (CLPCA).
- The CLPCA, also called the Climate Act, requires NYS to reduce Green House Gas (GHG) emissions from 1990 levels by 40% by 2030 (“40 by 30”) and by 85% by 2050 (“85 by 50”).
- The NYS Department of Environmental Conservation (DEC) created the Climate Smart Communities Program to help local governments take action to reduce GHG emissions.
- In 2019, our Village was selected as one of eight Westchester County municipalities to participate in the Climate Action Planning Institute (CAPI) which is sponsored by the DEC.
- The Hudson Valley Regional Council is coordinating with CAPI for Westchester County and with consultants from the International Council for Local Environmental Initiatives (ICLEI) – Local Governments for Sustainability.

# 1. CAPI: Background

- In September 2023, the Village completed the GHG Inventory Report for Tarrytown Municipal Operations.
- In November 2023, the following volunteer members were appointed to the CAPI Task Force: Dean Gallea, Chair; Peter Gaito; Josh Halickman; Jia Sun; Karen Bernstein.
- The purpose of the CAPI Task Force is to make recommendations to the Village and the Public to address climate change.
- The goal is to reduce the Village's GHG emissions by creating and implementing a Climate Action Plan (CAP).

# 1. What is CAPI?

The Climate Action Planning Institute assists with the following steps in helping municipalities develop a Climate Action Plan for Municipal Operations:

- ✓ Analyze operations through a GHG inventory for the baseline year (2019).
- ✓ Develop a “business as usual” (BAU) forecast showing how emissions will change over time without any mitigation efforts.
- ✓ Identify “low-hanging fruit” in our Village operations that could make significant improvements.
- ✓ Make revised forecasts of the effects to prioritize practical actions to achieve significant and cost-effective reductions.
  - Present recommendations to the Village departments and receive feedback.
  - Conduct outreach: present findings and recommendations to Village residents, explain how these might affect costs in the short- and long-term, and receive feedback.
  - Produce a final Climate Action Plan (CAP) and manage staged implementation.

# 1. Why Develop a Climate Action Plan (CAP) for Municipal Operations?

- Take a leadership role in the community to help mitigate the effects of climate change, and in so doing, protect health, safety, and resources for our Village.
- Additional benefits to taking action:



**Cost savings**



**Resource security**

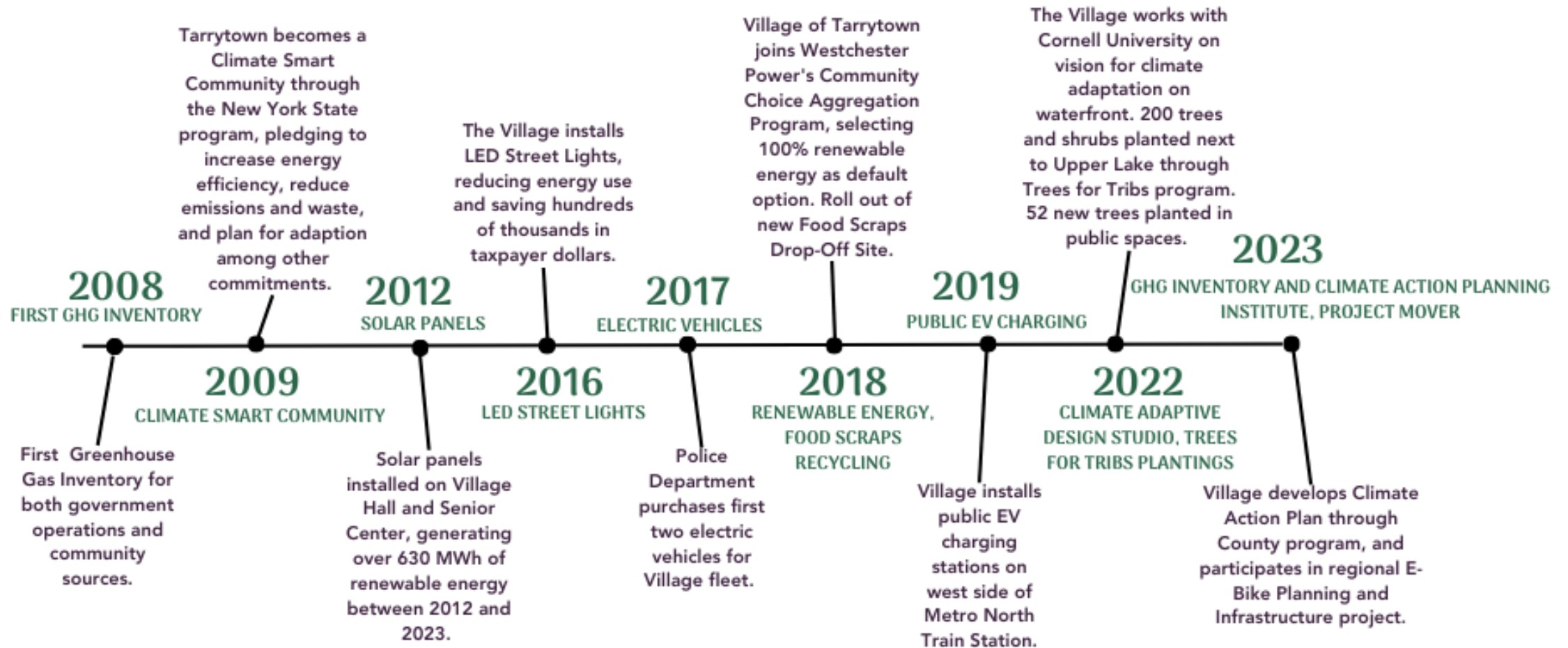


**Public health**



**Social equity**

# 1. The Village Has Already Taken Action to Mitigate Climate Change



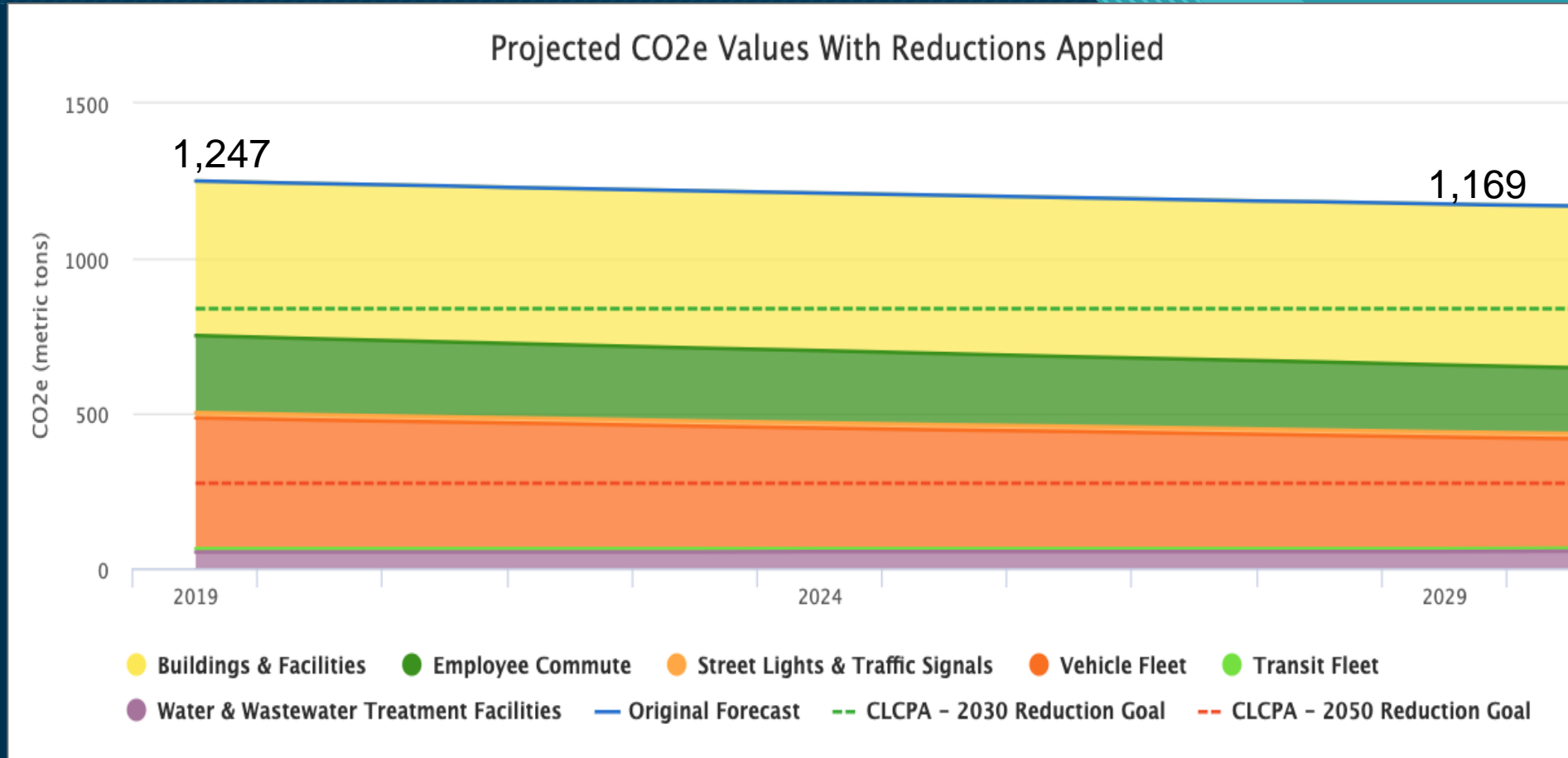
Note: This is an overview and not all-inclusive

# 1. How We Measure Greenhouse Gas (GHG) Emissions

- As you may know, there are several GHG's, such as carbon dioxide and methane.
- GHG's other than carbon dioxide can be converted to the equivalent detrimental effect of carbon dioxide.
- That measurement is the “carbon dioxide equivalent” (CO<sub>2</sub>e) and is used to account for the detrimental effect of all types of GHG's in one number.
- For example, methane has a larger detrimental effect than carbon dioxide. 1 Metric Ton (MT) of methane has the equivalent detrimental effect of 29.8 MT of carbon dioxide.



# 1. We Have A Long Way to Go



- Impacts on the forecast include:
  - Grid decarbonization (no change by 2030).
  - Westchester County population projections.
  - Federal vehicle efficiency standards.

## 2. Purpose of Presentation

- This CAPI Task Force presentation to stakeholders is to seek input on three items in order to complete the Climate Action Plan for Municipal Operations.
  1. Draft Vision Statement
  2. Establish Emissions Reduction Target for Tarrytown Municipal Operations
  3. Climate Action Strategies and Prioritization

### 3. Vision Statement for Climate Action Plan (CAP)

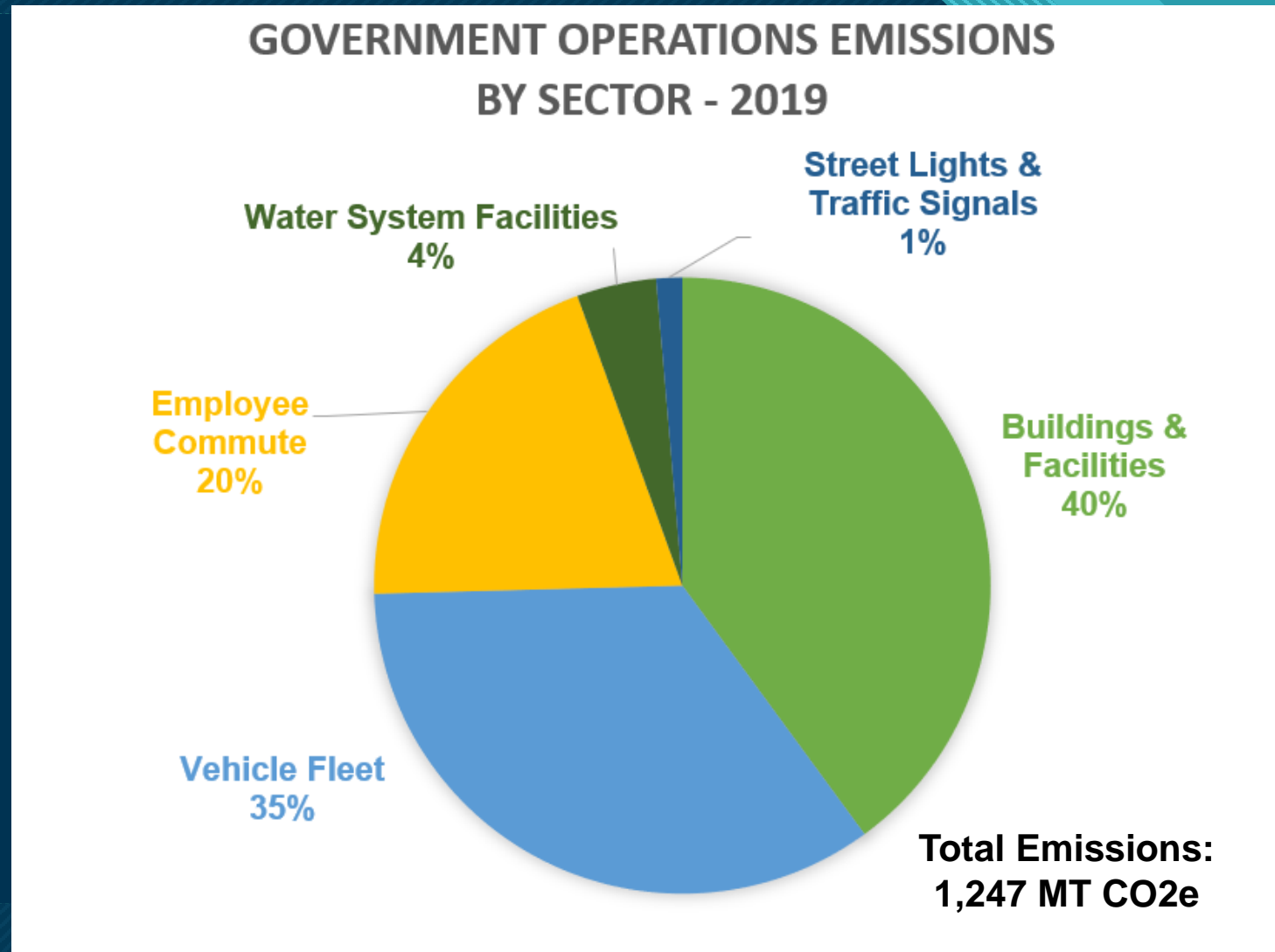
- A Vision Statement is a **brief, inspirational statement** that creates a mental image of the ideal state that a community wants to achieve.
- The CAPI Task Force has drafted the following Vision Statement for the Village of Tarrytown and would like your feedback:

*Reduce our Village carbon footprint and utility costs through the incorporation of energy-efficient, cost-saving mitigation measures in our buildings and in our operations, to improve the resiliency of our infrastructure in response to the impacts of climate change and improve the health and quality of life of our residents.*

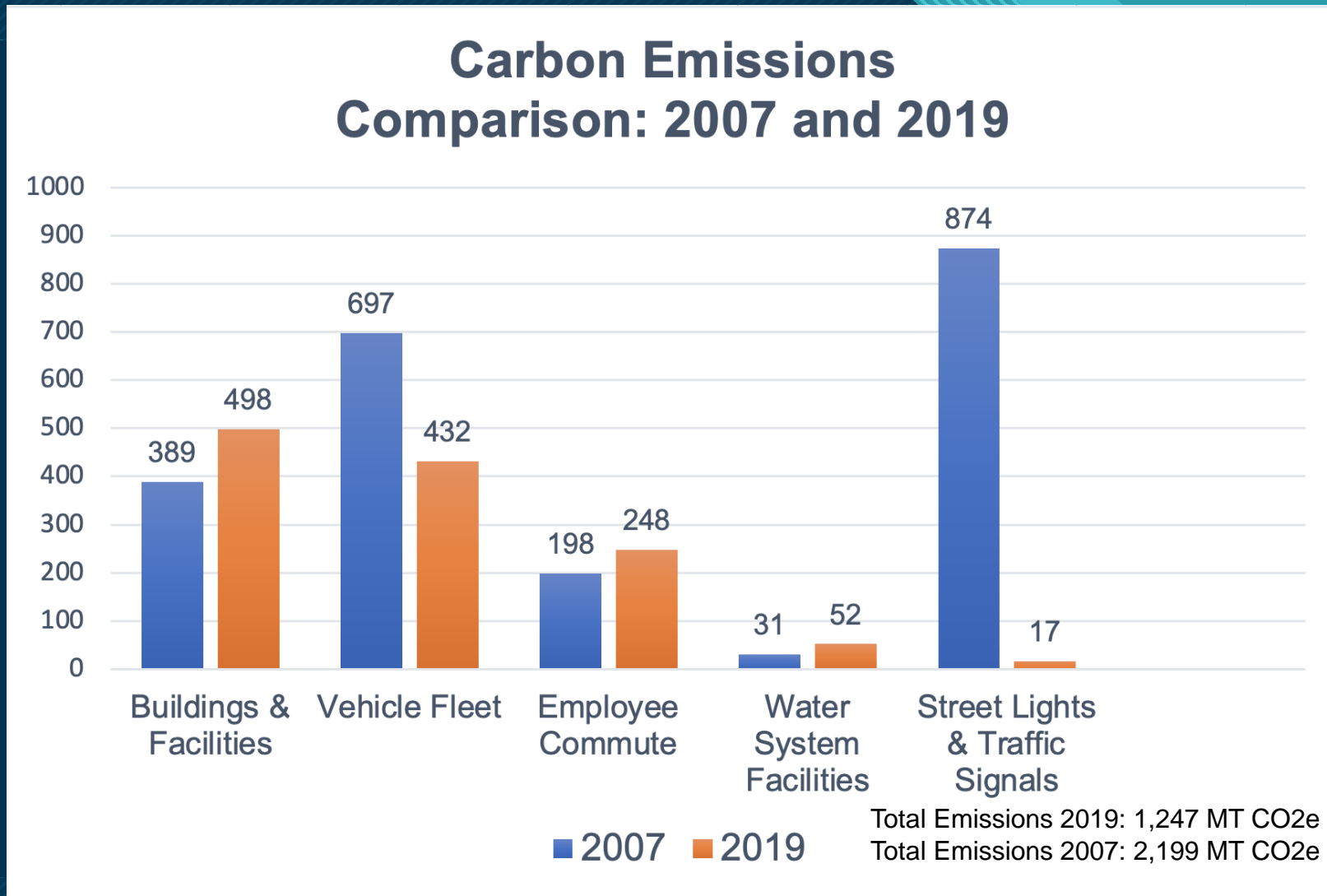
## 4. Greenhouse Gas Emissions (GHG) Inventory: Summary

- Baseline Year: 2019 (Chosen to utilize more accurate pre-COVID baseline).
- **Sectors included:**
  - Buildings and Facilities
  - Vehicle Fleet (including Senior Bus)
  - Employee Commute
  - Water System
  - Street Lighting
- Sectors not included: Solid Waste, Wastewater Treatment, Refrigerants
- Used 2007 GHG Inventory for comparison, which was also an ICLEI-based inventory. Tried to follow similar methodology for data collection, acknowledging differences between datasets in report.

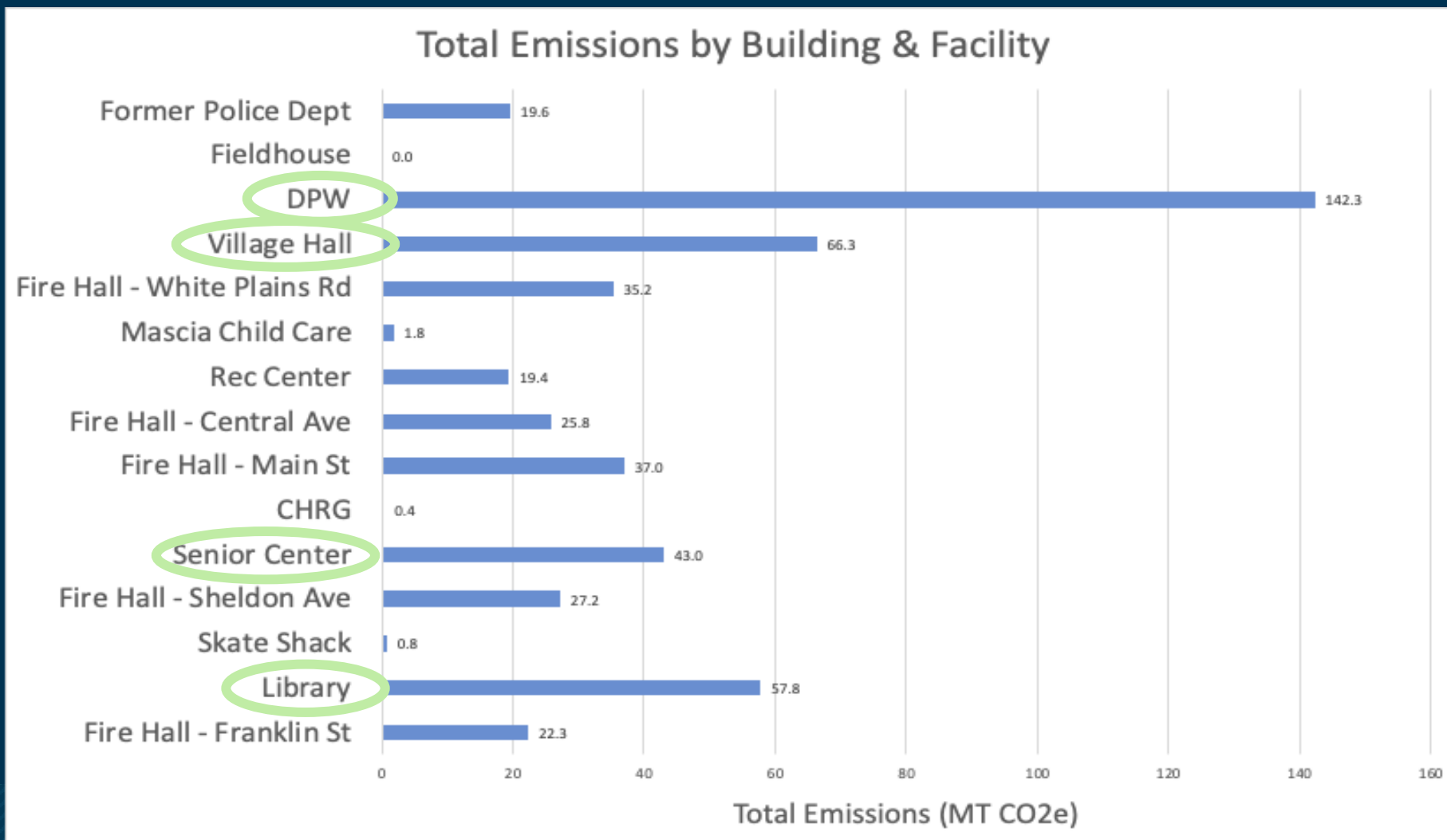
## 4. GHG Emissions By Sector (2019)



## 4. GHG Emissions By Sector (2007 vs. 2019)



## 4. GHG Emissions by Sector - Buildings and Facilities

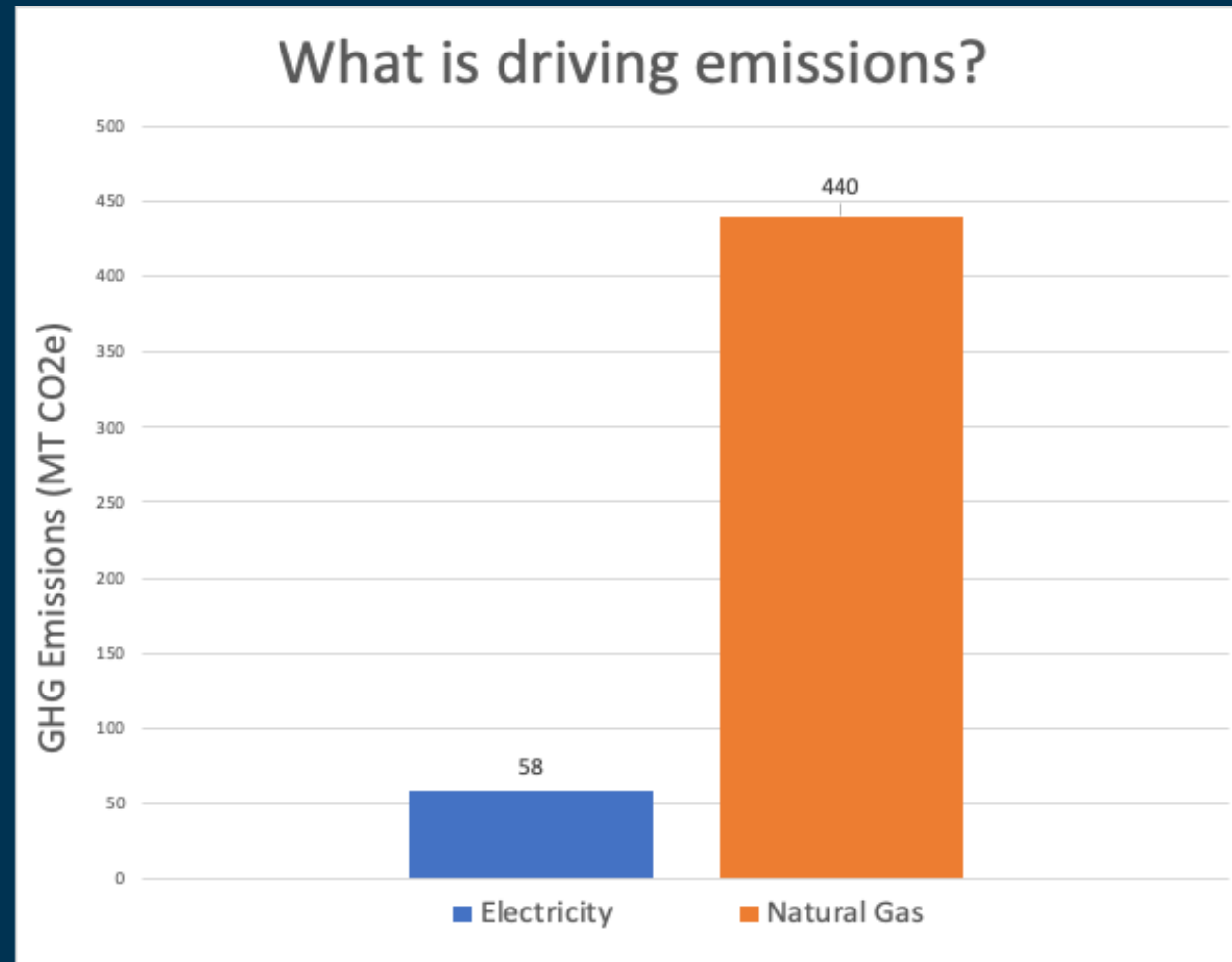


# 4. GHG Emissions by Sector - Buildings and Facilities



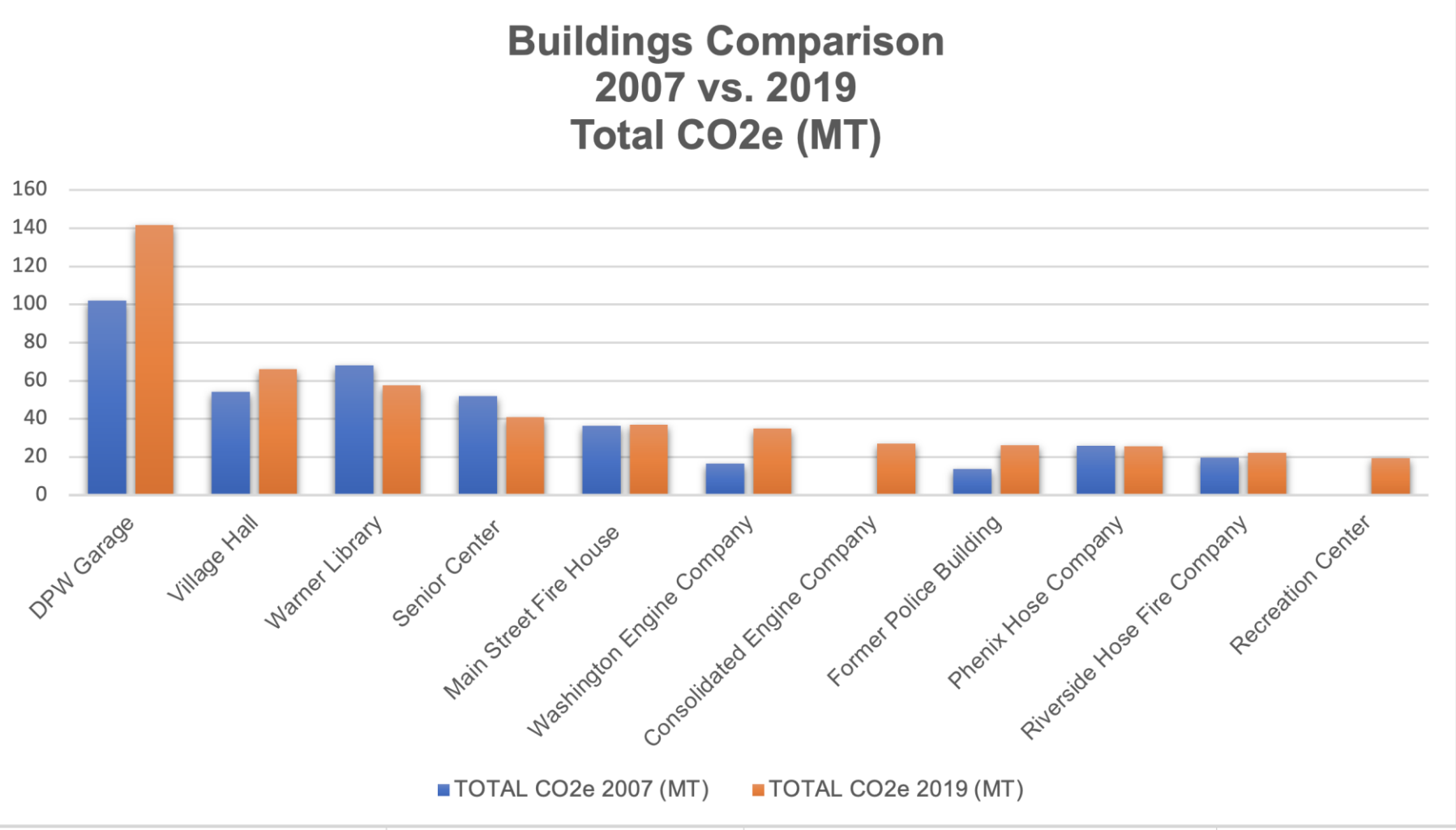


## 4. GHG Emissions by Sector - Buildings and Facilities

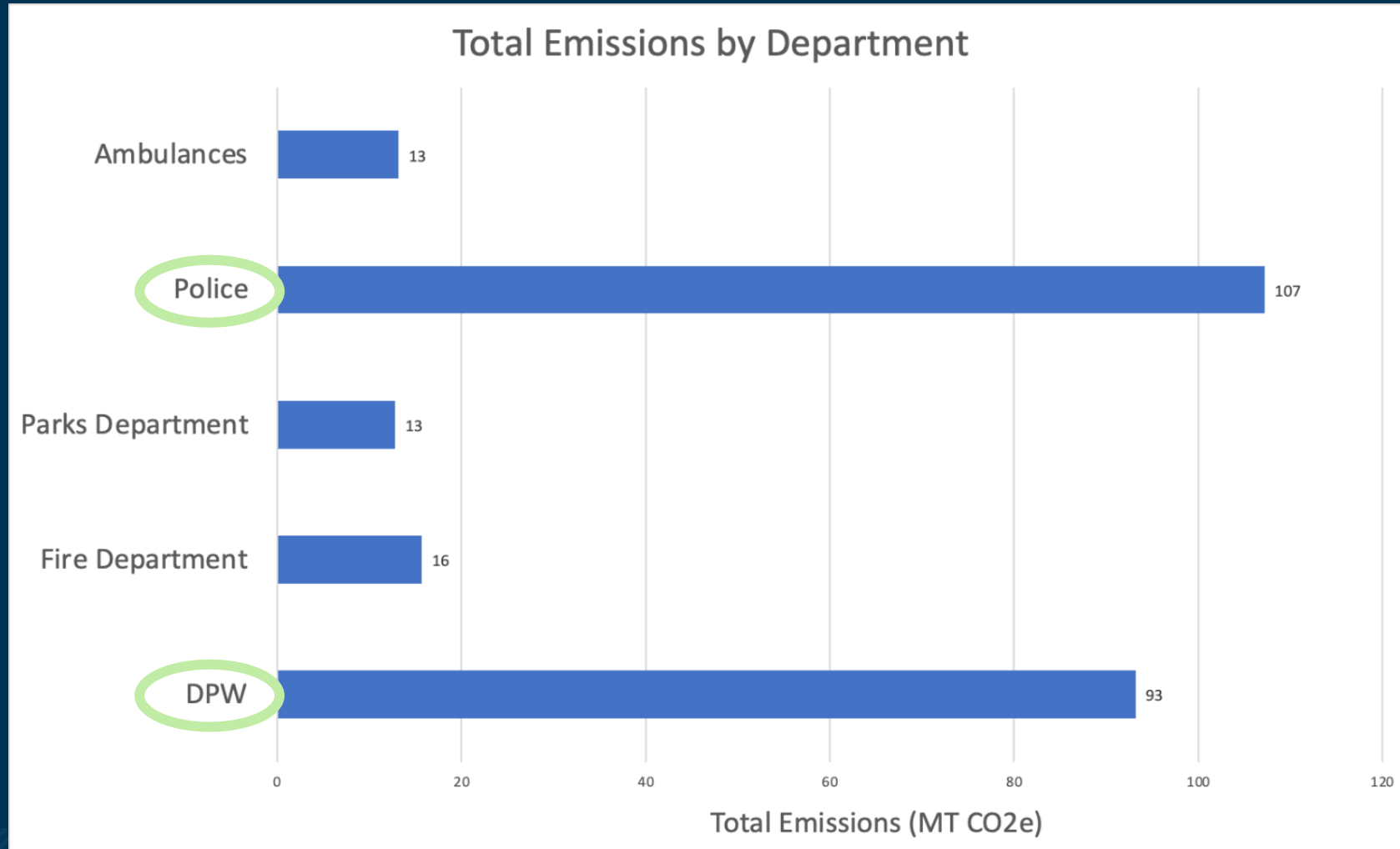


Natural gas in this sector alone accounts for 35% of emissions (total of 1,247 MTCO<sub>2</sub>e)

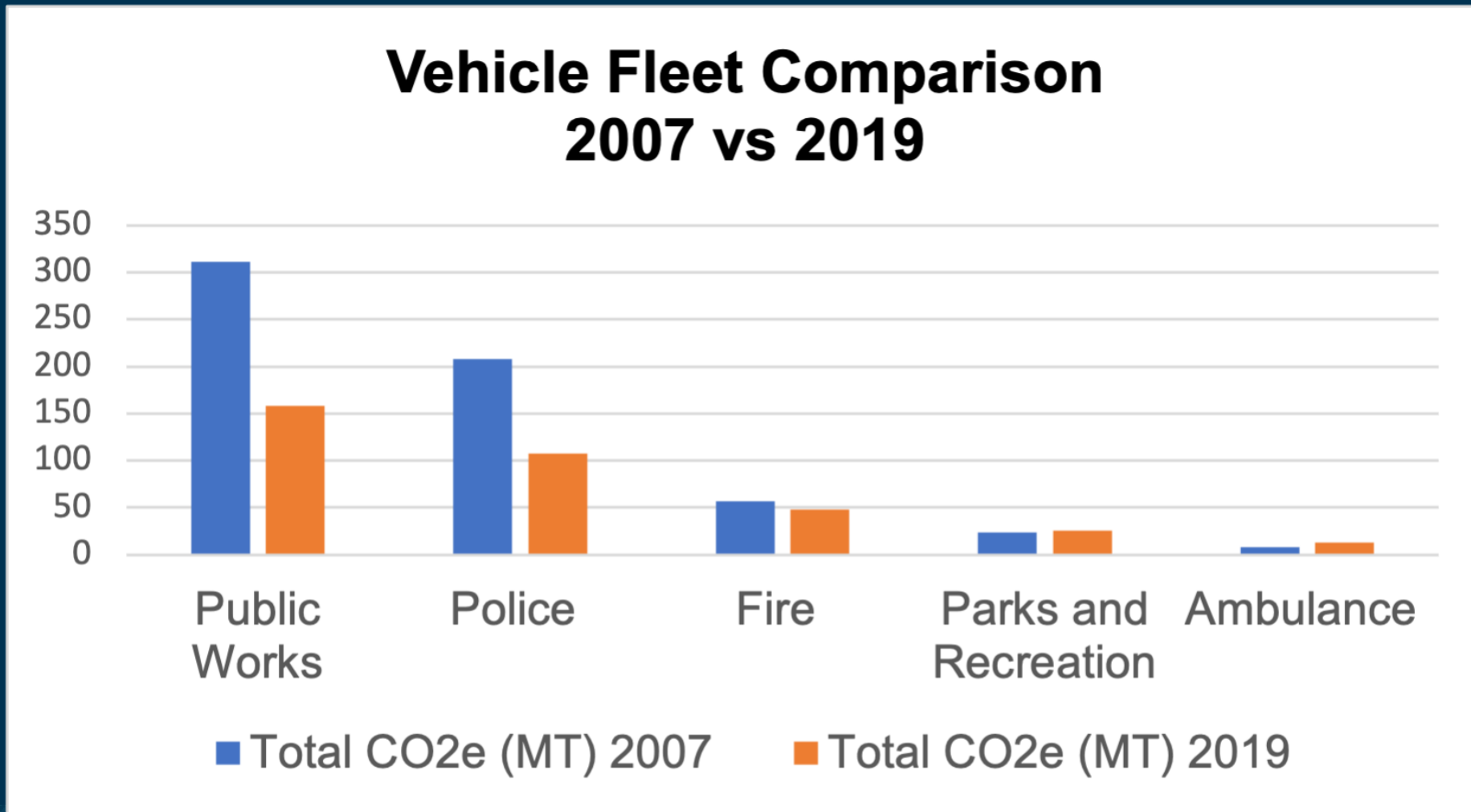
# 4. GHG Emissions by Sector - Buildings and Facilities (2007 vs. 2019)



# 4. GHG Emissions by Sector - Vehicle Fleet Emissions (2019)



## 4. GHG Emissions by Sector - Vehicle Fleet Emissions (2007 vs. 2019)



# 4. GHG Emissions by Sector - Employee Commute Emissions

- Employee Commute emissions increased from 198 MTCO<sub>2</sub>e to 248 MTCO<sub>2</sub>e between 2007 and 2019 even though the Village had 99 employees in 2007 versus 93 employees in 2019.
- The number of Light Trucks and SUVs used for commuting increased, but more significantly, annual vehicle miles traveled more than tripled, increasing from 164,964 miles traveled annually to 556,477.
- 36% of respondents demonstrated openness to considering alternative forms of transportation.

Employee transit mode the majority of the time:

87% 10% 2% 2%

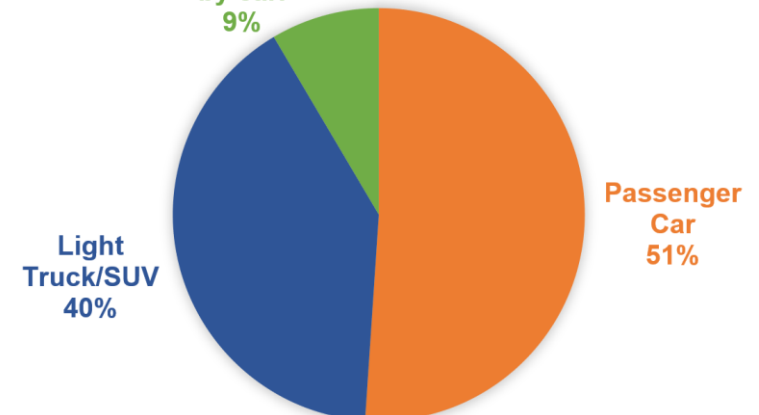


Employee transit mode at least once per month:

4% 2%



I do not regularly commute by car. 9%



## 5. Emissions Reduction Target for Tarrytown

- New York State emissions reduction targets were set in 2019 by the Climate Leadership and Community Protection Act (CLCPA).
  - 40% cuts from 1990 levels by 2030.
  - 85% cuts from 1990 levels by 2050.
- According to the 2022 Statewide GHG Emissions Report, NY has already reduced emissions by 7% from 1990 levels. Therefore, if we wish to align ourselves with NY State:
  - 2030: 33% reduction or reduce by **412** MT CO<sub>2</sub>e.
  - 2050: 78% reduction or reduce by **972** MT CO<sub>2</sub>e.

## 6. Recommended Strategies

Q: How do we reach our emissions reduction targets?

A: By prioritizing high-impact, practical strategies.

### Considerations for Prioritization

- GHG inventory results – target highest emitters.
- Implementation feasibility.
- Implementation timeline (short term vs. long term).
- GHG emissions reduction potential.
- Cost and funding availability.
- Co-benefits: public health, cost savings, resource security, social equality, workplace comfort or efficiency, quality of life improvements, etc.
- Municipal priorities.
- Related or overlapping plans.

# 6. Tarrytown Priority Matrix

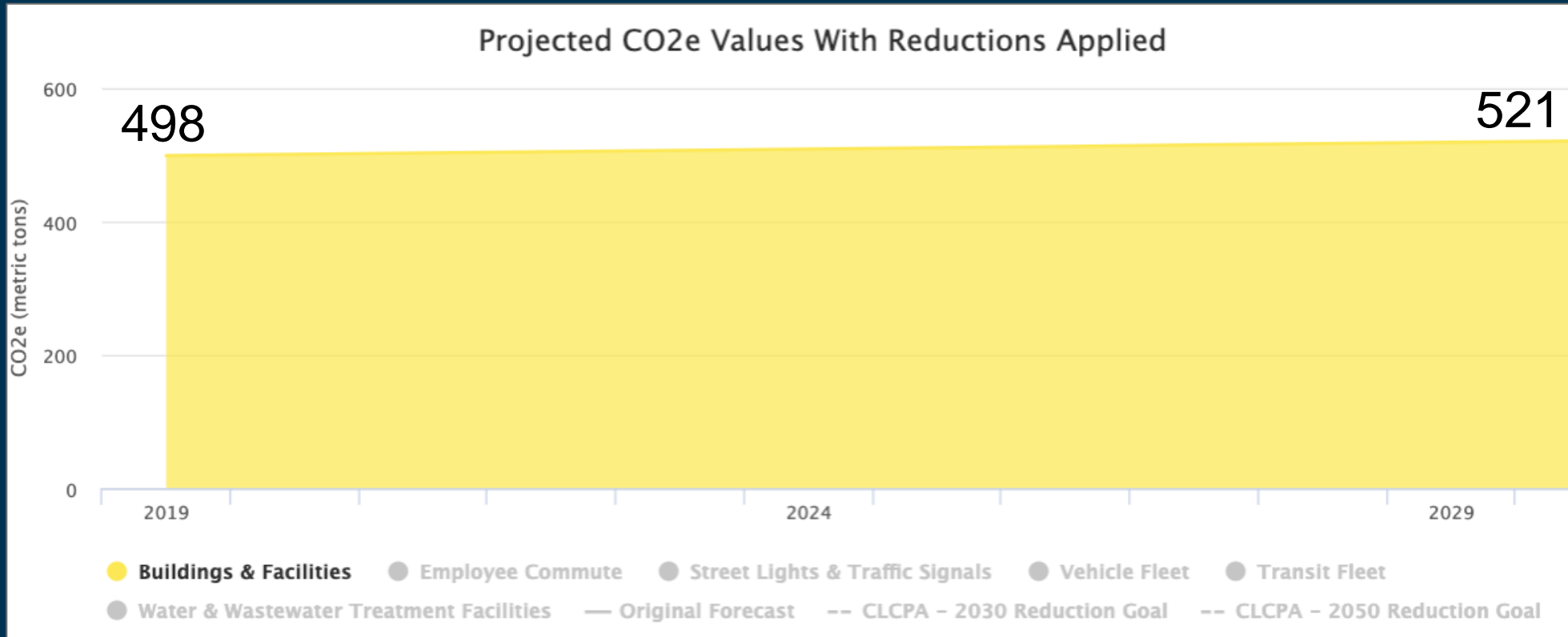
- The CAPI Task Force established a matrix for prioritization of strategy recommendations.
- Link to online spreadsheet:

<https://docs.google.com/spreadsheets/d/1TI92aYlhbyPRPi8UWJY7HybZdx6vMVdQmczFNJH1uTE/edit?pli=1#gid=1754956815>

Implementation Feasibility	Implementation Timeline	GHG Reduction Potential	Co-Benefits	Cost
<p>Initiative is both financially &amp; logistically feasible.</p> <p><b>High</b> (5 points): Initiative has examples of successful implementation that can be applied to implementing and/or there is a clearly detailed implementation plan in place.</p> <p><b>Medium</b> (3 points): Some examples exist for general implementation framework but with some areas of uncertainty.</p> <p><b>Low</b> (1 point): Vague or non-existent understanding of how strategy can be implemented.</p>	<p>Timeframe for implementation.</p> <p><b>High</b> (5 points): Short-term; less than 1 year.</p> <p><b>Medium</b> (3 points): 1-5 years.</p> <p><b>Low</b> (1 point): Long-term; more than 5 years.</p>	<p>GHG emissions reduction potential.</p> <p><b>High</b> (5 points): Direct, quantifiable reduction.</p> <p><b>Medium</b> (3 points): Some GHG emissions reduction may occur but it cannot be quantified.</p> <p><b>Low</b> (1 point): GHG reduction is very indirect, unlikely to occur, or unknown.</p>	<p>Initiative benefits other areas such as public health, cost savings, resource security, social equity, workplace comfort or efficiency, quality of life improvement, etc.</p> <p><b>High</b> (5 points): Benefits 3 or more other focus areas.</p> <p><b>Medium</b> (3 points): Benefits 1 or 2 other areas.</p> <p><b>Low</b> (1 point): Does not benefit other areas.</p>	<p>The cost of the strategy.</p> <p><b>High</b> (5 points): \$0-\$35k.</p> <p><b>Medium</b> (3 points): \$35k-\$100k.</p> <p><b>Low</b> (1 point): Over \$100k.</p>



## 6. Buildings and Facilities: Business As Usual

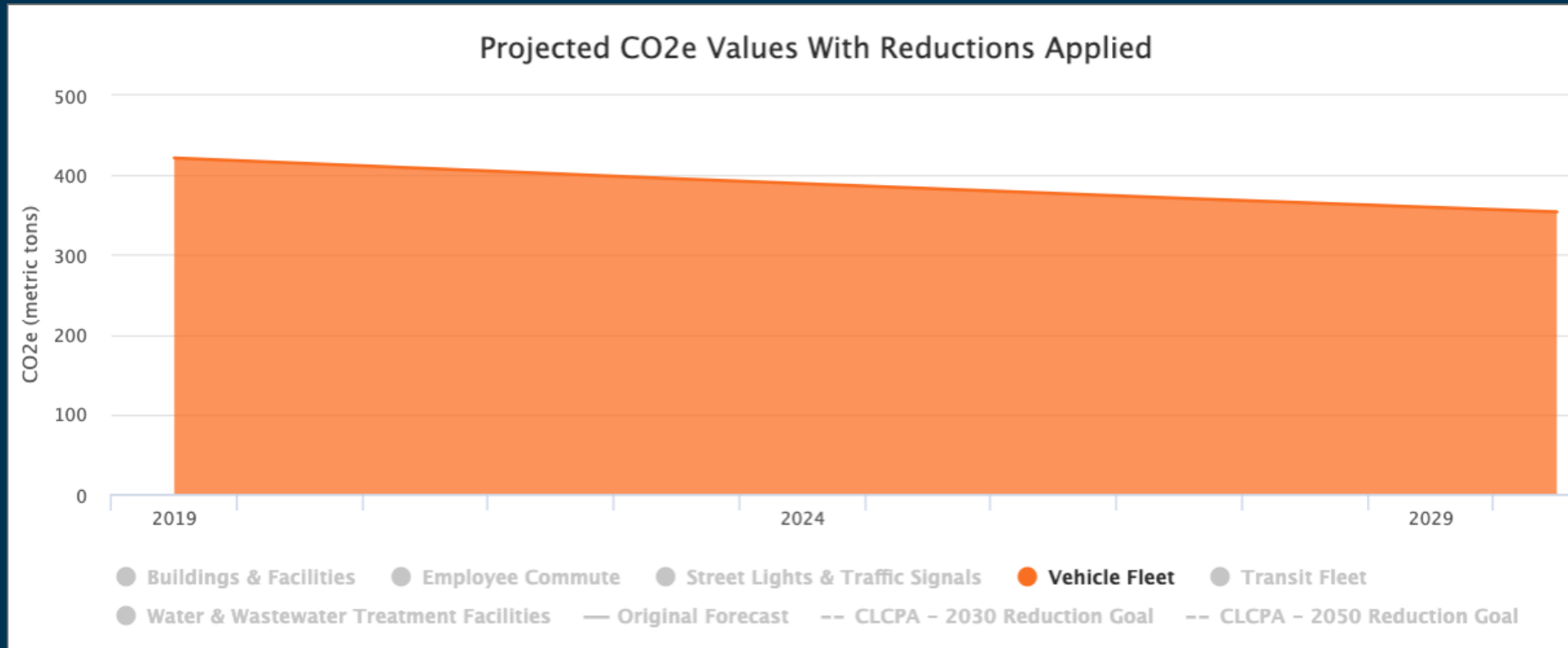


- Growth rates impacting this forecast include:
  - Westchester County population projection as a proxy for employee count.
  - Grid decarbonization - little to no change expected by 2030 considering that NYPA is already ahead of CLCPA's 2030 clean electricity goal.

## 6. Buildings and Facilities: Recommended Strategies:

	Implementation Feasibility (high=feasible; low=vague)	Implementation Timeline (high=short-term; low=long-term)	GHG Reduction Potential (high=direct & quantifiable; low=indirect or unknown)	Co-Benefits (high=3 or more; low=0)	Cost (high=low cost; low=high cost)
<b>Project: Conduct energy audits of government facilities.</b>	High	High	Medium	Medium	High
<b>Project: Upgrade HVAC at pump station.</b>	High	High	High	Medium	Medium
<b>Project: Upgrade Building Management System at Village Hall.</b>	High	Medium	High	Medium	Low
<b>Project: Solar panels on Rec Center and Library.</b>	Medium	High	Medium	Medium	Low
<b>Policy: Green Building Standards for Village facilities including mandatory electrification when opportunity arises and is feasible.</b>	Medium	High	Medium	Medium	High
<b>Practice: Establish DPW protocols to reduce energy usage.</b>	Medium	High	Medium	Medium	High

## 6. Vehicle Fleet: Business as Usual



- Growth rates impacting this forecast include:
  - No growth for diesel vehicles.
  - Federal vehicle efficiency standards.
  - Westchester County population projection as a proxy for employee count.

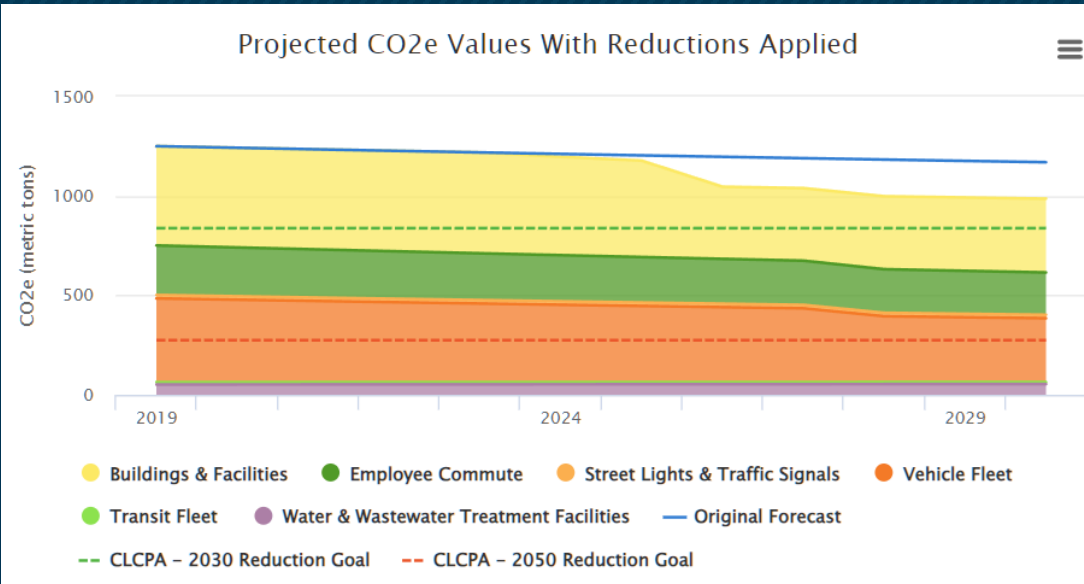
# 6. Vehicle Fleet: Recommended Strategies

	Implementation Feasibility (high=feasible; low=vague)	Implementation Timeline (high=short-term; low=long-term)	GHG Reduction Potential (high=direct & quantifiable; low=indirect or unknown)	Co-Benefits (high=3 or more; low=0)	Cost (high=low cost; low=high cost)
<b>Policy: Anti-idling policy for municipal vehicles.</b>	High	High	Medium	High	High
<b>Policy: Fleet efficiency policy - prioritize hybrid and EV purchases when possible. Policy to include exemptions for tech deficiencies.</b>	Medium	Medium	Medium	Medium	Medium
<b>Project: Accurate fleet fuel tracking.</b>	Medium	High	Low	Medium	High

## 6. Employee Commute: Recommended Strategies

	Implementation Feasibility (high=feasible; low=vague)	Implementation Timeline (high=short-term; low=long-term)	GHG Reduction Potential (high=direct & quantifiable; low=indirect or unknown)	Co-Benefits (high=3 or more; low=0)	Cost (high=low cost; low=high cost)
<b>Project/Policy: Incentivize car-pooling.</b>	Low	Low	High	Medium	High
<b>Project/Policy: Provide reserved charging or free charging for employees with plug-in or electric vehicles.</b>	Medium	Medium	Medium	Medium	High

# 6. Demonstration: Strategy Impact



ICLEI tool allows us to see GHG reduction of each strategy.

Measure Name	Actions	Start Year	End Year	Active
DPW LED Lighting Conversion	<a href="#">Edit</a>   <a href="#">Remove</a>	2024	2030	<input checked="" type="checkbox"/>
Solarize Rec Center and Library Buildings to 200 kW	<a href="#">Edit</a>   <a href="#">Remove</a>	2024	2030	<input checked="" type="checkbox"/>
Convert Water Pump Station heating from oil to Heat Pump	<a href="#">Edit</a>   <a href="#">Remove</a>	2025	2030	<input checked="" type="checkbox"/>
Convert all DPW Natural Gas to Heat Pump	<a href="#">Edit</a>   <a href="#">Remove</a>	2026	2030	<input checked="" type="checkbox"/>
Convert All Other Buildings Natural Gas to Heat Pump (NO DPW)	<a href="#">Edit</a>   <a href="#">Remove</a>	2026	2030	<input type="checkbox"/>
Convert 50% of DPW Natural Gas to Heat Pump	<a href="#">Edit</a>   <a href="#">Remove</a>	2026	2030	<input type="checkbox"/>
Vehicle Fleet - Police Dept EVs (20%)	<a href="#">Edit</a>   <a href="#">Remove</a>	2028	2030	<input checked="" type="checkbox"/>
Vehicle Fleet - DPW EVs (20%)	<a href="#">Edit</a>   <a href="#">Remove</a>	2028	2030	<input checked="" type="checkbox"/>
Vehicle Fleet - Electrification - Gasoline (50% of all)	<a href="#">Edit</a>   <a href="#">Remove</a>	2028	2030	<input type="checkbox"/>

## 7. Questions and Feedback

- We appreciate your feedback. Please respond by Wednesday, April 26.
- We will share these slides with you by email. Please take a look at the prioritization spreadsheet. Here is the link:  
<https://docs.google.com/spreadsheets/d/1TI92aYIhbyPRPi8UWJY7HybZdx6vMVdQmczFNJH1uTE/edit?usp=sharing>
- You may insert additional strategy recommendations into the spreadsheet directly and follow the protocols for assigning values.
- Please insert any comments into the notes tab of the spreadsheet and include your initials so that we know who commented.

## 8. Next Steps: Community Engagement Schedule

- April 5: Deadline for response from Department Heads
- April 15: CAPI Task Force Presentation to BOT and public
- April 26: Deadline for feedback from public
- May 1: Feedback from Board at Work Session
- May 2: CAPI presentation to HVRC
- May 10: Final CAP submitted to Board for review
- May 26: Board adoption of Climate Action Plan for Municipal Operations





**Thank You!**