



CITY OF WORCESTER

Green Worcester Advisory Committee

Meeting Minutes

Monday, April 11, 2022 at 5:30 p.m.

Location: Esther Howland Chamber, City Hall Floor 3

Committee Members

Mary Knittle, Chair

Ted Conna

Stefanie Covino

Nathan Fournier

Evelyn Herwitz

Deirdra Murphy

7th member TBD

Contacting the Committee

Department of Sustainability and Resilience

Address: 455 Main Street, Room 108,
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www.WorcesterMA.gov/GreenWorcester

Department of Sustainability and Resilience

Our Mission:

To implement the ambitious and urgent goals of the Green Worcester Sustainability and Resilience Strategic Plan (GWP), a roadmap for making Worcester the greenest mid-size city in the country.

Our Staff:

John Odell, Chief

Jacquelyn Burmeister, Senior

Environmental Analyst, Lakes and Ponds Program

Jessica Davis, Project Manager

Nick Pagan, Environmental Analyst, Lakes and Ponds Program

Sushil Rajagopalan, Energy Analyst

Luba Zhaurova, Director of Projects

Accessibility:

The GWAC is committed to ensuring that its public meetings are accessible to all. Should you require interpretation, auxiliary aids, services, translations, written materials in other formats, or reasonable modifications in policies and procedures, please contact the DSR a minimum of 48 hours in advance of the scheduled meeting.

Translations:

Hay disponibles servicios de interpretación y otras adaptaciones con solicitud previa.

Avisanos por

greenworcester@worcesterma.gov

Present

District 1: Mary Knittle, Chair

District 1: Evelyn Herwitz

District 2: Nathan Fournier

District 4: Ted Conna

District 4: Deirdra Murphy

District 5: Stefanie Covino, participating virtually

Absent:

None

Staff:

John Odell

Jessica Davis

Sushil Rajagopalan

Luba Zhaurova

Guests/Presenters:

Mike Steinhoff, Kim Lundgren Associates

Andrew Pettit, Kim Lundgren Associates

Call To Order: 5:37 pm by Mary Knittle, Committee Chair

1. **Welcome.** The Chair read out the rules of meeting conduct.

2. **Approval of Minutes – March 7, 2022**

The Committee voted unanimously to approve March 7th minutes with an edit that Member Conna's comment be added: "Could the City partner with WPI or Clark University on carbon impact modeling?"

3. Presentation on the Greenhouse Gas Emissions Inventory (2009 and 2019)

- a. The Department of Sustainability and Resilience hired Kim Lundgren Associates to conduct a Greenhouse Gas (GHG) Emissions inventory for the City comparing the years 2009 to 2019. These years were chosen because 2020 and 2021 were too impacted by COVID-19 to serve as an accurate comparison of emissions over time. Mr. Pettit and Mr. Steinhoff of Kim Lundgren Associates presented their initial findings from their assessment. (See **Attachment A** for the presentation slides.)
- b. Member Conna and Member Herwitz asked questions regarding the methodology used to calculate transportation emissions. Mr. Pettit and Mr. Steinhoff explained that they used MassDOT traffic counts from sensors on the roads, national data sets that estimate the general makeup of vehicles types and then they calculated fuel consumption and emissions. There are various methods for calculating transportation related emissions and Mr. Pettit and Mr. Steinhoff believe this approach is the most reliable for the City. The City can also access the data from MassDOT and assess changes annually. Mr. Pettit and Mr. Steinhoff noted that it is not realistic to track only vehicles that are owned by Worcester residents rather than pass through vehicles on highways.
- c. Ms. Zhaurova stated that the final report that will be shared publicly contains detailed explanations on all methodology used for the assessment.
- d. Member Conna asked the presenters if fugitive natural gases are considered low hanging fruit in terms of reducing greenhouse gas emissions and Mr. Steinhoff agreed, saying that gas utilities need to address that challenge and pipes need to be fixed.
- e. Member Murphy asked why there was a significant decrease in emissions from municipal electricity use. Mr. Pettit answered that it indicated that the electric grid is using more renewable energy and the City has made significant energy efficiency improvements such as installing LED lights and conducting energy retrofits for buildings. Mr. Odell noted that since 2010, the City has invested \$100,000,000 in energy efficiency and renewable energy projects for municipal properties. He highlighted that the landfill solar farm is the single largest measure undertaken that has a significant impact on the decrease in emissions.
- f. Member Conna thanked Mr. Odell and Ms. Zhaurova for their hard work and their accomplishments are evident in the report. Mr. Steinhoff added the data is very compelling for how much the city has done with internal operations.
- g. Member Knittle asked why Open Space is listed as an increase in emissions from 2009 to 2019. Ms. Zhaurova explained that MassEnergyInsight categorizes public parking garages, parking lots attached to parks and buildings associated with parks as Open Space. Therefore, the increase could be due to building a new parking garage and construction work at parking garages. Member Covino suggested that the term Open Space be changed for the final report as it is misleading because one could think it means forested areas.

4. Strategic Communication Plan for the Committee

- a. DSR staff reported that it met with Member Herwitz to discuss an internal communication strategy for the department, using her expertise. The GWAC will create an external communication strategy so there will be some overlap but also a division between the two. The five success stories created as part of the GWP Scope of Work will be used as informational brochures and handouts at events.
- b. Member Herwitz provided an overview of her suggestions to DSR on how to promote the Green Worcester Plan (GWP). Before developing a story, DSR needs to determine who the target audience will be and how DSR can help them. Audience types are True Believers, Stakeholders, Climate Curious and General Population. DSR will choose three main priority topics annually and create four stories for each. They will be published alternating once per month for a total of 12. The topics selected were Blue Spaces, Urban Heat Islands and Renewable Energy. Stories can be shared in many ways including newspaper articles and social media. A large project idea is to install a billboard at the landfill solar farm to promote it to those driving by on the highway. This conversation was conceptual and the official plan of implementation is to be determined. We will work with the City Communications Specialist on these efforts. Member Fournier asked how much can be done in house vs needing to hire a marketing agency. Member Herwitz said that DSR is considering hiring consultants to help with these efforts.

- c. Member Knittle suggested that publishing stories frequently and connecting the stories to the GWP will help the public connect the dots and encourage civic engagement.
- d. Member Herwitz said that there are a lot of excellent citizen scientist programs in the City which can be promoted to get more engagement.
- e. Member Covino added that diversifying stories is important to share the different types of efforts the city is undertaking. For example, the Blackstone River Coalition's citizen scientists conduct monitoring of the waterways and this is an important story to tell. Additionally, educating about sustainability and resiliency in terms of open space, tree retention and blue spaces is important.
- f. Ms. Zhaurova asked if the GWAC had any good stories or topics to pitch for Earth Day on April 22.
 - i. Member Fournier said that a lot of energy efficiency projects aren't visual and highlighting something more visual like green spaces, trees and how much carbon can be captured from trees would be a good story for Earth Day. Member Covino gave examples of rain gardens at the Senior Center and Doherty High School. Member Knittle said that the Worcester Tree Initiative planted rain gardens at elementary schools.
 - ii. Member Herwitz asked if the City is doing anything to address flooding in the Green Island area that could serve as a good story for Earth Day. Mr. Odell said that the City is doing an assessment of tree canopy for a heat island assessment project and DSR is hoping to provide the results to the GWAC in late spring which will include the Green Island area. DSR is also researching Municipal Vulnerability Preparedness grant opportunities and DPW&P collaborations to address those flooding issues, but none of the projects will be complete for an Earth Day story.
 - iii. Member Herwitz suggested developing a story about the City's consultants conducting the street tree inventory for the Urban Forestry Master Plan.
 - iv. Ms. Zhaurova noted that it is important to consider GWAC's charge as context for this conversation about communication. Therefore, it would be helpful to gather community focused stories in addition to City focused stories which we have been mainly discussing so far.
 - v. Member Murphy and Member Fournier suggested collaborating with REC on their Earth Day clean up events. Member Conna suggested working with REC networks that are already established and get them engaged with GWP.
 - vi. Member Covino shared that Mothers Out Front is organizing a citizen science project to conduct a gas leak analysis and that a City Councilor is involved in the initiative.
 - vii. Member Herwitz asked if DSR could plan a "State of the GWP" type of event that would be similar to the Lakes and Ponds Program annual State of the Lakes event. This could serve as a networking event as well. Mr. Odell said yes, there will be annual update on the GWP event.
 - viii. Member Knittle asked if people can send in success stories to GW email to gather resident stories.
 - ix. Member Murphy and Member Herwitz suggested hosting community group presentations at GWAC meetings on a regular basis. Member Covino offered to be the first group presenter for Blackstone Watershed Collaborative and share the needs assessment they developed. Mr. Odell said there may be another venue for those types of presentations as it may not fit the GWAC's role as an advisory committee. However, DSR will think about it and get back to GWAC about it.
 - x. Member Conna shared that the role of the committee and the role of the members isn't clear yet but that will probably clarify over time as this is only the GWAC's second meeting. There are some areas we may not have much influence such as the City schools but we still want to share the GWP messages there. He suggested building our networks by creating a newsletter and networking with other organizations in the area.
 - xi. Mr. Odell reminded the GWAC members that part of their role is to bring concerns, topics, ideas and feedback from residents to the DSR, particularly if they are related to implementing the GWP. The process to do that is to email the chair and the DSR for consideration of inclusion on the next GWAC

agenda. It needs to be sent at least one week in advance of the meeting to consider being added to the agenda.

- xii. Member Herwitz shared that a resident asked if the city could use concrete that has lower carbon attributes because the City uses so much concrete.

The Committee voted unanimously to continue this conversation to the next meeting.

5. Old Business

- a. Vice Chair Election.

The role of the Vice Chair is to facilitate the committee meetings when the chair isn't able to do so.

Upon the motion by Member Herwitz to nominate Member Covino to be Vice Chair of the Green Worcester Advisory Committee, and seconded by Member Conna, the Committee voted unanimously (with member Covino abstaining) to approve the motion. Member Covino accepted the nomination.

- b. Member Knittle and Member Conna asked Mr. Odell about the status of appointing a seventh member to the GWAC to fill the vacant position. Mr. Odell said he will provide an update at the next meeting.

6. Other Business

- a. Received Communications

- i. None

- b. Upcoming Meetings Schedule

- i. All meetings are planned to be in person. The schedule was planned in consideration of holidays and conflicting meetings.

The Committee voted unanimously to accept the proposed GWAC meeting schedule for 2022 (Attachment B).

Adjournment: 7:15pm

The Committee voted to adjourn the meeting at 7:15 pm.

Attachments

Attachment A: GHG Inventory Presentation Slides

Attachment B: Meeting Schedule



CITY OF WORCESTER, MA COMMUNITY & MUNICIPAL GHG EMISSIONS INVENTORY 2009 & 2019

PRESENTATION TO THE GREEN WORCESTER ADVISORY COMMITTEE, APRIL 11, 2022

PRESENTED BY MIKE STEINHOFF AND ANDREW PETTIT



INTRODUCTION

- **Project's purpose:** To advance toward the Green Worcester Plan's goal (III-1) of eliminating 100% of greenhouse gas emissions citywide, by developing and publishing the citywide greenhouse gas emissions inventory.
- KLA was hired by Worcester' Department of Sustainability & Resilience in Nov 2021 to **conduct a Greenhouse Gas Emissions Inventory** in a format compliant with the Local Government Operation Protocol, CDP and Global Covenant of Mayors.
- **GHG Emissions Scopes 1, 2 and partial 3** included.
- Years included:
 - 2009 – Baseline
 - 2019 – Last typical year before Covid-19 Pandemic affecting energy use and emissions
- Deliverables include an inventory template with properly documented data sources and screenshots, allowing for easy inventory updates by City staff moving forward.



COMMUNITY
ACTIVITIES GHG
EMISSIONS

2019 COMMUNITY GHG EMISSIONS INVENTORY - SUMMARY

By Sector



Commercial Buildings
704,799 MTCO_{2e} 39%



On-Road Transportation
482,658 MTCO_{2e} 27%



Residential Buildings
456,990 MTCO_{2e} 26%



Solid Waste
137,456 MTCO_{2e} 8%

By Source



Natural Gas
588,963 MTCO_{2e} 31%

Fugitive Natural Gas
166,513 MTCO_{2e} 9%

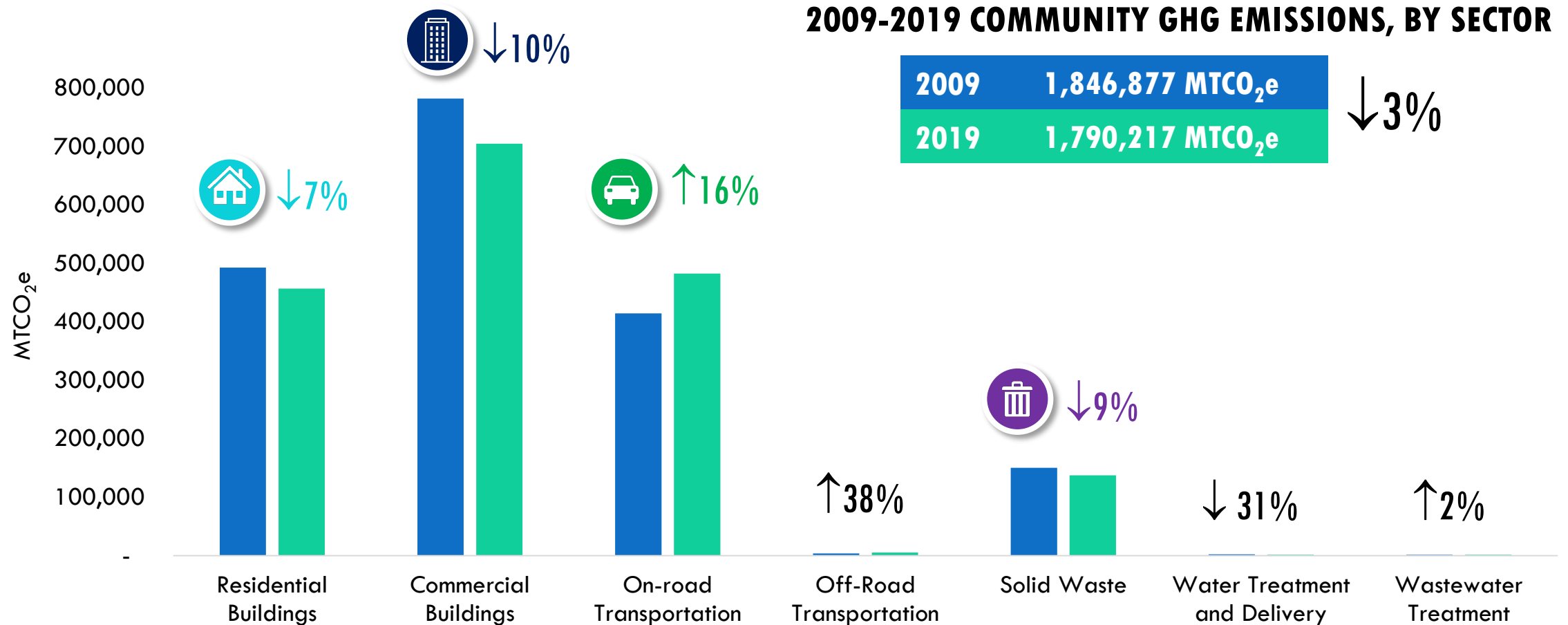
Gasoline
385,582 MTCO_{2e} 22%

Diesel
90,720 MTCO_{2e} 5%

Purchased Electricity
360,947 MTCO_{2e} 20%

MSW Incinerated
107,049 MTCO_{2e} 6%

2009-2019 COMMUNITY GHG EMISSIONS TRENDS BY SECTOR



2009-2019 COMMUNITY GHG EMISSIONS TRENDS BY SOURCE

Natural Gas



**Commercial Use
(Therms)**

2009	56,017,923
2019	65,823,323

↑18%



**Residential Use
(Therms)**

2009	36,291,405
2019	39,414,006

↑9%

Purchased Electricity



**Commercial Use
(MWh)**

2009	1,014,230
2019	823,743

↓19%



**Residential Use
(MWh)**

2009	426,880
2019	414,245

↓3%

Transportation



**WRTA
(Passenger Miles)**

2009	9,611,835
2019	14,111,090

↑47%

**Passenger
Vehicles (VMT)**

2009	847,621,170
2019	1,001,586,270

↑18%

Electric (VMT)

2009	0
2019	13,914,905

**MBTA (Passenger
Miles)**

2009	10,963,368
2019	14,916,616

↑36%

2009-2019 COMMUNITY GHG EMISSIONS METRICS



Population

Source: U.S. Census Bureau

2009	181,045
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2019	185,428
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↑2%

Residential Energy Use (MMBTU) per Home



2009	91
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2019	87
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↓4%

Light-Duty Vehicle Miles Traveled per Capita



2009	4,429
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2019	5,181
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↑17%

Commercial Energy Use (Million MMBTU)

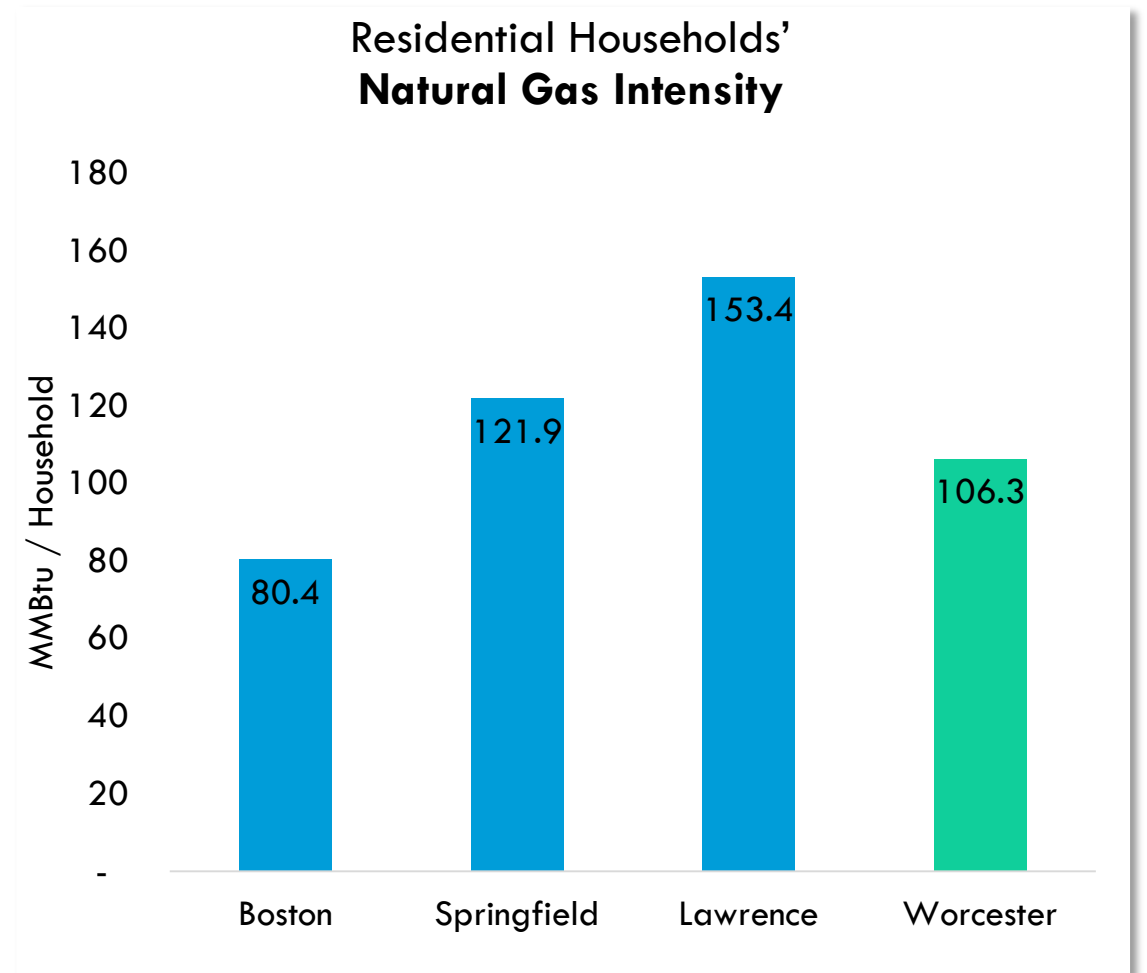
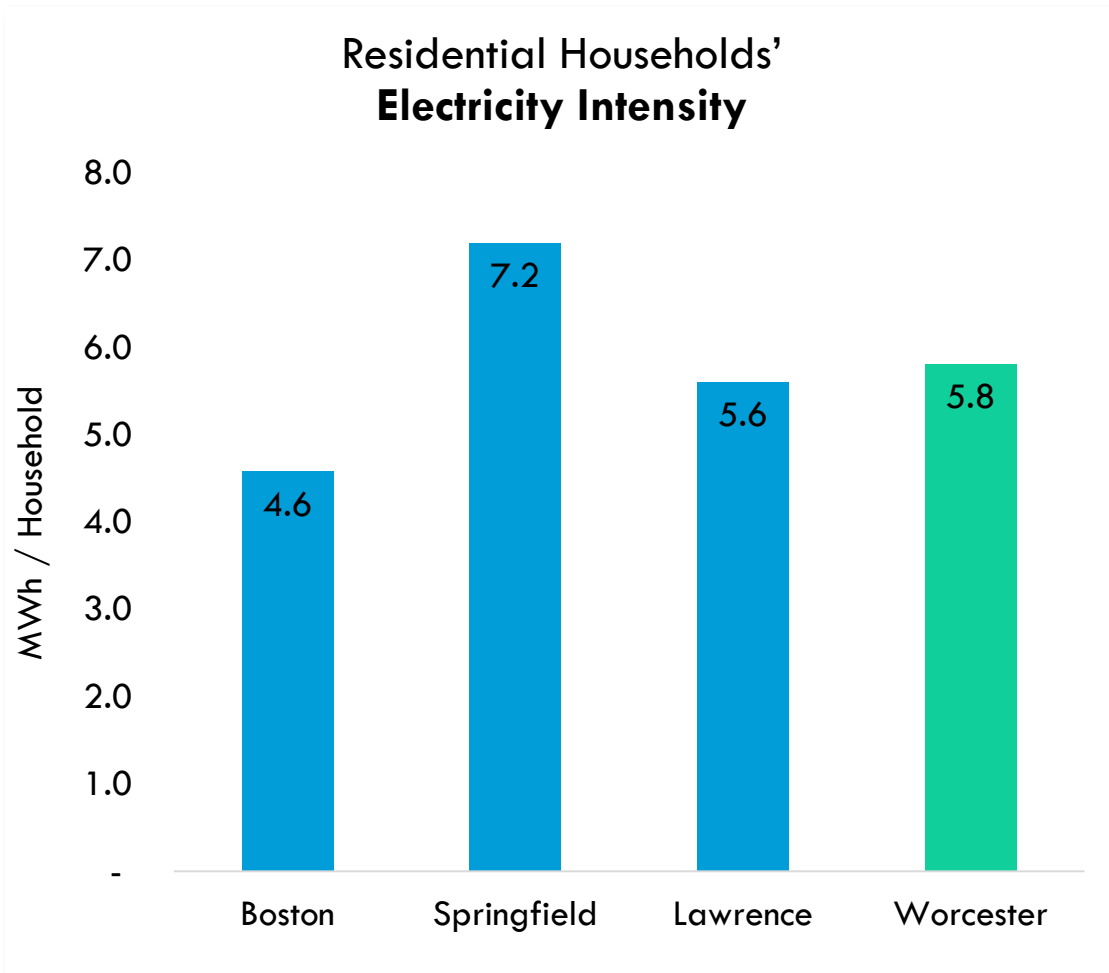


2009	9.2
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2019	9.6
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↑4%

2019 COMMUNITY GHG EMISSIONS BENCHMARKS





MUNICIPAL
FACILITIES/OPERATIONS
GHG EMISSIONS

2019 MUNICIPAL GHG EMISSIONS INVENTORY

By Sector



Facilities & Infrastructure

33,205 MTCO_{2e}

76%



Vehicle Fleet

6,923 MTCO_{2e}

16%



Employee Commuting

3,111 MTCO_{2e}

7%



Solid Waste

373 MTCO_{2e}

1%

By Source



Natural Gas

13,916 MTCO_{2e}

32%

Fugitive Natural Gas

4,146 MTCO_{2e}

10%



Purchased Electricity

14,602 MTCO_{2e}

33%



Gasoline

7,860 MTCO_{2e}

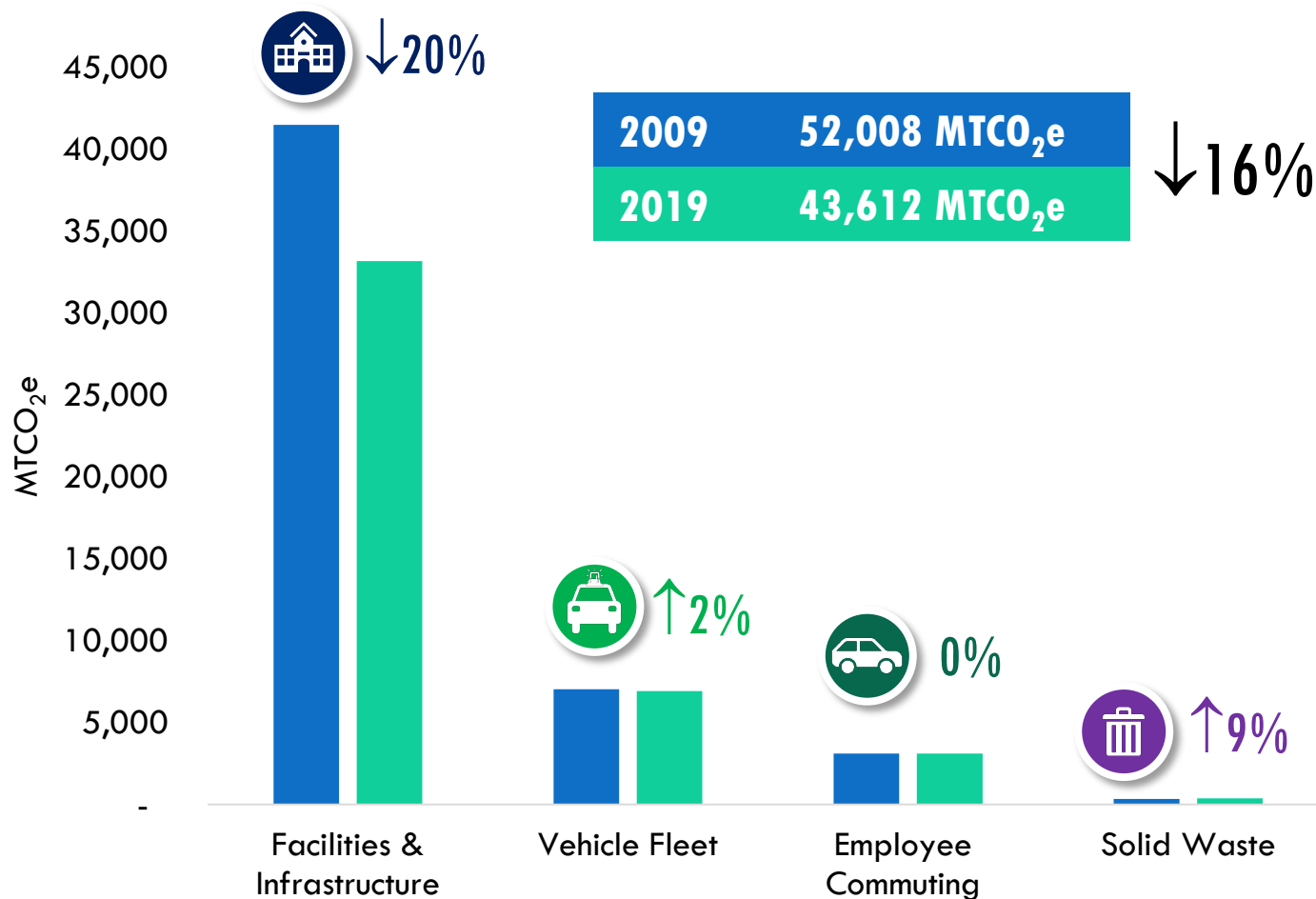
22%

Diesel

2,177 MTCO_{2e}

5%

2009-2019 MUNICIPAL GHG EMISSIONS TRENDS BY SECTOR



2009	52,008 MTCO ₂ e	↓16%
2019	43,612 MTCO ₂ e	

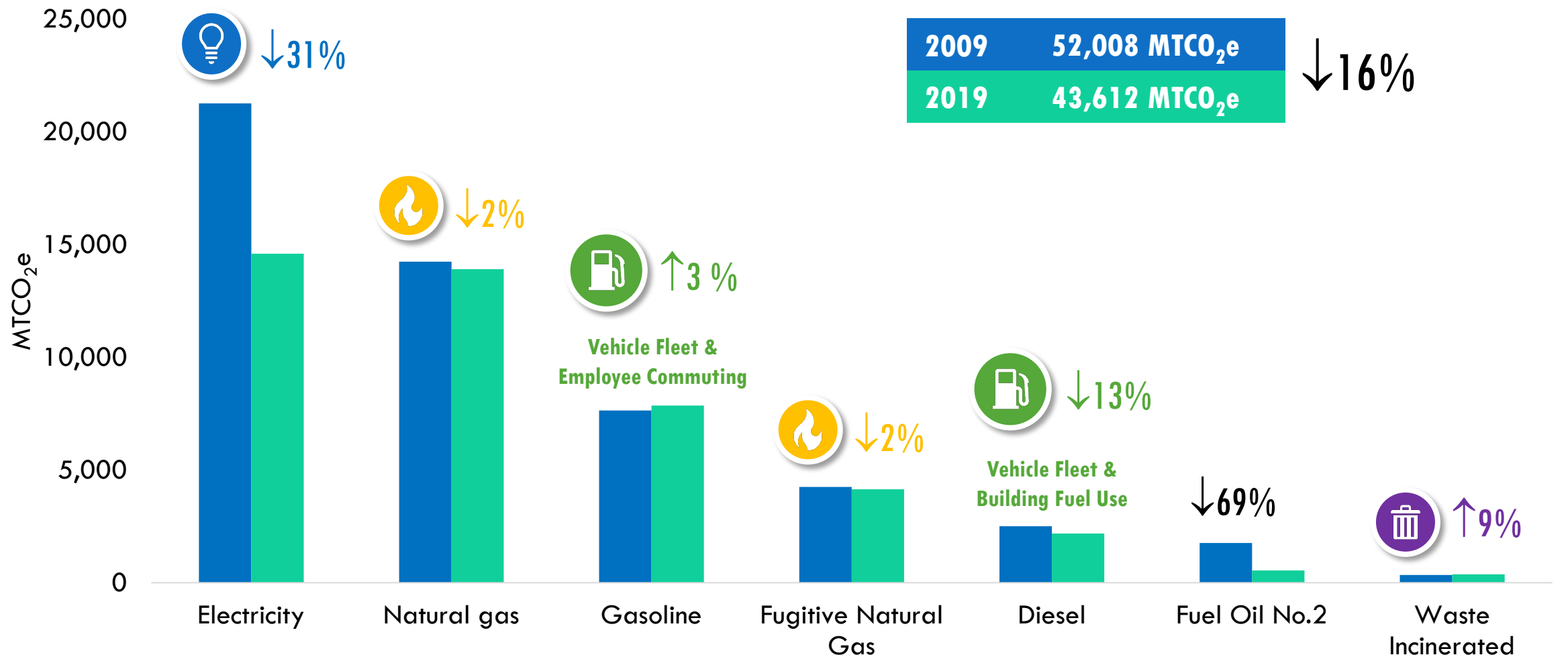
Facilities & Infrastructure



This sector can be further categorized by property type within the City's built portfolio

Sector	2009 MTCO ₂ e	2019 MTCO ₂ e	% Change
Municipal Buildings	32,444	26,668	↓18%
Water & Sewer	4,491	3,914	↓13%
Streetlights & Traffic Signals	3,441	1,362	↓60%
Open Space	1,153	1,261	↑9%

2009-2019 MUNICIPAL GHG EMISSIONS TRENDS BY SOURCE



SUMMARY OF FINDINGS

- **Transportation demand is rising** in Worcester (and everywhere) and those trends are clear.
- **Natural gas use has grown**, possibly from fuel oil replacement, but data is limiting to say for sure.
- **Electricity use has declined** indicating some efficiency gains in the past decade.

- Going forward we should expect **rising electricity demand** as our actions shift usage patterns.
- **Worcester Community Choice** (electricity aggregation program) is working to drive down electricity emissions faster.

- City of Worcester is building the **in-house capacity to track impact** on an ongoing basis as it implements the **Green Worcester Plan**.
- GHG Performance will likely be an increasing consideration for **funding opportunities** of all kinds and Worcester is well prepared to capture its share.



