
Environmental Action Committee

Date

2019/06/11

Time

9:30 AM

Location

Civic Centre, Committee Room A - Second Floor,
300 Civic Centre Drive, Mississauga, Ontario, L5B 3C1

Members

Matt Mahoney	Councillor - Ward 8 (Chair)
Stephen Dasko	Councillor - Ward 1 (Vice-Chair)
George Carlson	Councillor - Ward 11
Brad Bass	Citizen Member
Chelsea Dalton	Citizen Member
Lea Ann Mallett	Citizen Member
Pujita Verma	Citizen Member
Leena Baber	Peel Environmental Youth Alliance
Simran Persaud	University of Toronto Mississauga
Britt McKee	Ecosource
Melanie Kramer	Credit Valley Conservation
Dianne Zimmerman	Partners in Project Green
Vacant	Peel Aboriginal Network

Non-Voting Members

Alice Casselman	Association of Canadian Educational Resources
Teresa Ierullo	Green Sacred Spaces
Brad Butt	Mississauga Board of Trade
Shelia Storey	Sawmill Sid Inc.

Contact

Dayna Obaseki, Legislative Coordinator, Legislative Services
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dayna.obaseki@mississauga.ca

AGENDA INDEX

1. **CALL TO ORDER**
2. **APPROVAL OF AGENDA**
3. **DECLARATION OF CONFLICT OF INTEREST**
4. **MINUTES OF PREVIOUS MEETING**
 - 4.1. Environmental Action Committee Minutes - May 14, 2019
5. **DEPUTATIONS**
 - 5.1. Students of Camilla Road Senior Public School to present on declaring a Climate Emergency.
Teacher: Camelia Stocia
Eco Team Students: Aliza Baig, Kiran Siddhaarth, Suresh, Ksenia Chmurzynski, Luxmeena Arulanantham, Omnea Fakhri, Siyona Rathore and Sophia DeGraff.
 - 5.2. Sumeet Jhingan, Project Manager, Energy Management to present on the 5 Year Energy Conservation Plan (2019 -2023).
 - 5.3. Sarah Piett, Acting Supervisor, Woodlands & Natural Areas to present on Pollinator Initiatives.
 - 5.4. Leya Barry, Climate Change Coordinator to present on The Climate Change Project: Findings from Siemens' City Performance Tool for Mississauga.
 - 5.5. Councillor Stephen Dasko, Ward 1 to present on the Study Tour to Sweden, 2019.
6. **PUBLIC QUESTION PERIOD - 15 Minute Limit (5 Minutes per Speaker)**

Pursuant to *Section 42 of the Council Procedure By-law 0139-2013*, as amended:
Environmental Action Committee may grant permission to a member of the public to ask a question of Environmental Action Committee, with the following provisions:

 1. The question must pertain to a specific item on the current agenda and the speaker will state which item the question is related to.
 2. A person asking a question shall limit any background explanation to two (2) statements, followed by the question.
 3. The total speaking time shall be five (5) minutes maximum, per speaker.
7. **MATTERS TO BE CONSIDERED**
 - 7.1. Environmental Action Committee Terms of Reference
 - 7.2. Environmental Action Committee Work Plan

7.3. EAC Actions Summary

8. **INFORMATION ITEMS**

9. **OTHER BUSINESS**

10. **ENQUIRIES**

11. **DATE OF NEXT MEETING**

Tuesday, July 9, 2019 at 9:30am
Committee Room A, Civic Centre
300 City Centre Drive
Mississauga, ON L5B 3C1

12. **ADJOURNMENT**

Environmental Action Committee

Date

2019/04/16

Time

9:30 AM

Location

Civic Centre, Committee Room A - Second Floor,
300 Civic Centre Drive, Mississauga, Ontario, L5B 3C1

Members Present

Matt Mahoney	Councillor - Ward 8 (Chair)
Stephen Dasko	Councillor - Ward 1 (Vice-Chair)
George Carlson	Councillor - Ward 11
Chelsea Dalton	Citizen Member
Pujita Verma	Citizen Member
Vacant	Group Representative/Stakeholder Member
Vacant	Group Representative/Stakeholder Member
Vacant	Group Representative/Stakeholder Member
Vacant	Group Representative/Stakeholder Member
Leena Baber	Peel Environmental Youth Alliance
Simran Persaud	University of Toronto Mississauga

Members Absent

Brad Bass	Citizen Member
Lea Ann Mallett	Citizen Member

Staff Present

Andrea J. McLeod, Manager, Environment
Lisa Urbani, Environment Research Assistant, Environment
Jodi Robillos, Director, Parks & Forestry
Leya Barry, Climate Change Coordinator, Environment
Jessica Wiley, Manager, Forestry
Wayne Holder, Supervisor Tree Preservation & Protection
Dayna Obaseki, Legislative Coordinator, Legislative Services

Find it online

<http://www.mississauga.ca/portal/cityhall/environmentalactioncommittee>

Environmental Action Committee	2019/05/14	2
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1. **CALL TO ORDER** □ 9:44AM

2. **APPROVAL OF AGENDA**

Approved (P. Verma)

3. **DECLARATION OF CONFLICT OF INTEREST** □ Nil.

4. **MINUTES OF PREVIOUS MEETING**

4.1 **Environmental Action Committee Minutes** □ April 16, 2019

Approved (Councillor Dasko)

5. **DEPUTATIONS**

5.1 **Heat Pumps**

Keith Burrows, Low Carbon Buildings Manager, The Atmospheric Fund provided an overview on Heat Pumps. Mr. Burrows discussed retrofits and highlighted the benefits associated to having a heat pump.

Members of the Committee spoke to the matter and raised the following questions:

- The difference between geothermal and heat pumps;
- Return investment on retrofits;
- The cost of using natural gas; and
- Private sector work.

Mr. Burrows and Ms. Barry responded to questions from the Members of the Committee;

- Geothermal pumps are ground source heat pumps. Heat pumps utilize the air, water and/or ground as heat source to generate and transfer that energy through a pump to heat and/or cool a home/building.
- Retrofits are expensive and heat pumps should be installed at the beginning stages of planning and design, however over time the investment has a positive return through energy savings and lower carbon emissions.
- The cost of using natural gas to heat is initially cheaper, however the Federal government has instituted a carbon tax to produce climate change consciousness.
- The Atmospheric Fund works with both the private and public sector.

RECOMMENDATION

That the deputation and associated presentation by Keith Burrows, Low Carbon Buildings Manager, The Atmospheric Fund to present on Heat Pumps be received.

Received (C. Dalton)

Recommendation EAC-0012-2019

5.2 Public Tree By-law

Jessica Wiley, Manager, Forestry and Wayne Holder, Supervisor Tree Preservation & Protection provided an overview on the Public Tree By-law. The current legal authority regarding a public tree is governed the Highway Traffic Act, Section 2(f), which is only subjected to a fine collected by By-law Enforcement. City Staff has tracked the enforcement hours over the last 3-4 years noticing an increase in tree damage. The purpose behind having a City Public Tree By-law is modernize the current standards, legal enforcement, protection and educating the public. The goal is alter the public tree definition and provide a communication plan.

Members of the Committee spoke to the matter and raised the following questions:

- Inquired if an analysis has been done to determine what the potential negative effects and the legal matters would be.
- Benchmarking with other municipalities in regards to the penalty fines.
- Proactive approach to the preservation versus the removal of a tree.
- Inquired if the tracking correlates with the recent extreme weather damage.

Ms. Wiley and Mr. Holder responded to questions from the Members of the Committee;

- The biggest concerns are surrounding ownership of a tree; whether it is a public or private or shared tree. Legal and communications are working on a plan of informing residents and utility companies of the upcoming by-law and process behind it.
- Penalty benchmarking was conducted to be line with the other municipalities'. The penalties consist of fine amounts that increase based on first and subsequent offences for residents and companies.
- The City plans to work with residents to help preserve the trees.
- The tracked hours are focused on specific hours and data that exclude storm related damage.

RECOMMENDATION

That the deputation and associated presentation by Jessica Wiley, Manager, Forestry and Wayne Holder to present on the Public Tree By-law be received.

Received (S. Persaud)

Recommendation EAC-0013-2019

6. PUBLIC QUESTION PERIOD - 15 Minute Limit (5 Minutes per Speaker)

No members of the public requested to speak.

7. MATTERS CONSIDERED

7.1. Group Member Appointments to Environmental Action Committee

Members of the Environmental Action Committee previously discussed at the last EAC meeting the Group Member Appointments to the Committee and decided upon three community organizations for re-appointment; EcoSource, Credit Valley Conservation Authority and Partners in Project Green. The Committee decided on the fourth community

group as the Peel Aboriginal Network. The Members of the Committee discussed other suggested organizations; ACER (Association of Canadians Educational Resources), Green Sacred Spaces, MBOT (Mississauga Board of Trade) and Sawmill Sid Inc. and decided to invite those community groups to sit on the committee as non-voting members. The terms of reference will be revised to reflect non-voting membership for Group Representatives.

RECOMMENDATION

1. That the existing members of the Environmental Action Committee have selected and Legislative Services will approach Ecosource, Credit Valley Conservation (CVC), and Partners in Project Green and Peel Aboriginal Network to appoint a representative to EAC.
2. That the Environmental Action Committee has selected and will approach ACER (Association of Canadians Educational Resources), Green Sacred Spaces, MBOT (Mississauga Board of Trade), and Sawmill Sid Inc. to select a representative to attend EAC meetings as a non-voting member, notwithstanding the terms of reference.

Approved (C. Dalton)

Recommendation EAC-0014-2019

7.2. Environmental Action Work Plan

Lisa Urbani, Environmental Research Assistant, facilitated the EAC Work Plan discussion by asking questions pertaining to the committee's interest matters, aligning with the mandate, the existing gaps, what items should be carried over from the previous work plan and the format of the work plan overall.

Members of the Committee noted that their interests are in being a community green leader and requested a better streamline of information pertaining to volunteering at community events. The Committee Members mentioned altering the format by narrowing down the list to be more focused with targeted deadlines as well as having deputations in lined to the topics/issues listed on the work plan.

RECOMMENDATION

That the feedback from the existing members of EAC be received and incorporated into a revised Environmental Action Committee Work Plan for the 2019-2022 term.

Received (L. Baber)

Recommendation EAC-0015-2019

8. INFORMATION ITEMS ☐ Nil.

9. OTHER BUSINESS

Councillor Dasko was requested by the Committee to provide a quick update on the Lakeview Project at the next EAC meeting.

10. DATE OF NEXT MEETING(S) - Tuesday, June 11, 2019 - 9:30am, Committee Room A

11. ADJOURNMENT ☐ 11:00AM (C. Dalton)

12 Climate Change Ideas that can help improve our state of emergency situation

1. Build buildings to better environmental standards now

We have heard that new buildings will need to be net zero carbon starting in 2030. This is good, but why wait? We have read that over 15 buildings in Canada are being constructed to this new standard, and we think it would be great if we adopted this for Inspiration Lakeview, Port Credit and Canada Lands (as a start). We should announce this as part of the climate plan as an example of immediate action.

2. Retrofit some older buildings to better environmental standards

The big challenge is how to make current buildings better. We think selecting some older building and retrofitting them to better standards is a good way to start. Invite people to these sites and so we can all learn so we can do this in other places. Maybe we could persuade our parents to be part of the test sites with our home! We should have at least 10 examples done in two years. That sounds reasonable.

3. Stop buying buses that run on gas

We hate standing behind a bus when they push out harmful exhaust. Cough. Cough. Other cities are using electric buses. So should we. All new buses starting NOW should be electric and we need to have a plan to replace all current gas buses as soon as possible.

4. Charge people with cars that run of fossil fuels more, while charge people on hybrid/electriccars less

You need new powers like the City of Toronto and charge more for license renewals for fossil fuel cars and less for hybrids/electric. (Waive this for low income people). You can do this. Sure, people will gripe, but this is an emergency. Toll roads are everywhere in the United States. Also in some places in Canada. There is an airport tax to pay for the new airport. We should do tolls in Mississauga – maybe free for hybrid/electric cars! This should be done by 2021.

5. Is 1 million trees really a lot of trees?

We hear 1 million trees. This sounds like a lot. But what we need to say is what is our overall tree canopy goal. We should be a city that has the best tree canopy. This is better than saying 1 million trees as most people do not know if that is the right number. Plus, if we lose trees from disease or insects like Emerald Ash Borer, we may be just replacing! Please let us know our canopy goal this year. If everyone born or died needed to give \$50 to plant a tree to recognize their life, we could plant a lot more.

6. The city should ban all single use plastic in municipal offices now. And more places later.

Smoking bans in restaurants used to be a big issue. No more. Just like banning smoking, banning single use plastic bans may cause some people to complain, but it is the right thing to do. We carry reusable drinking containers, why can't everyone? We should start this year in city buildings.

7. Making transit more convenient is important

Have a plan to ensure most residents (like 90%) are within a 5 minute walk to transit/LRT/Go stop. It should be free for students and low income people too. Discounts at special times should also be considered for everyone else. We hate seeing empty buses, GO Trains (and in the future, our LRT). Please make sure they are full! We should start this in 2020.

8. More education

Introduce an environmental business course in schools, colleges and universities. We should be the city people come to learn the most about the environment. Why should we have to travel somewhere else like Waterloo to get that education? We will give you until 2022 to make this happen.

9. More jobs, offer incentives to attract clean tech companies to our city.

We do not want to work at a gas station. We want to work for a clean tech company. And live in a clean city. Start this now.

10. More renewable energy everywhere

Install wind mills off the shore in Lake Ontario. Convert a park into a solar farm teaching centre. Create district energy communities where there is no gas pipes needed as they use geothermal, solar, wind with back-up fuels like propane. Pick one of our villages to test how to do this. Our city visions says "we want to inspire the world". This would inspire the world.

11. Better use of water and plants

Install water barrels at all city downspouts and designate people to volunteer for watering area plants. Stop planting exotic plants that need lots of water and replace with our beautiful native plants (and trees).

12. Report Cards

We get report cards every few months. We need a climate change report card every few months too. If we are not doing well in school, our parents get a call. If our climate change report card is not going well, we need someone to report to that will help get everyone back on track.

We said back in 2012 that we want to become a net zero carbon city, but have never done a report card to show where we are or what we plan to do. We would get an R in school if we did this!

We suggest you present progress every three months to Council, EAC and a newly formed Youth emergency team made up of kids 8-18 from Eco Schools. By the way, all schools should become Eco Schools.

A bonus idea

We need more people riding bikes. This means more bike lanes. To pay for this adults that can afford it should get a bike license for \$50. We need to pay for a boat license when lakes are almost empty, yet for busy streets, we do not have a test or license! Time to change. For younger kids, bike safety should be a course you need to take every few years.

5 Year Energy Conservation Plan (2019 – 2023)

Energy Management
Facilities and Property Management
June 11, 2019



Energy Management Section

- Part of Facilities & Property Management in Corporate Services
- Our Mission:
 - The Energy Management Team is committed to consistently reduce utility consumption and costs by setting targets, measuring performance, and implementing best practices.

5 Year Energy Management Plan (2019 – 2023)



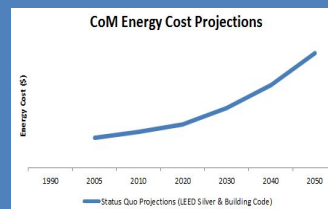
Ontario Regulation 507/18

- Provincial Requirement to report usage
- Develop & implement a CDM Plan starting in 2019



80% GHG reduction by 2050

- Need to meet the City's aggressive Community & Corporate targets



Utility Budget Stability

- Need to mitigate the rising utility costs (projected at 3% annually)



Net-zero Carbon City

- Need to support this Visionary Action
- Need to demonstrate environmental leadership

NEED TO ADDRESS ENERGY & CLIMATE CHANGE IN CITY BUILDINGS

Previous 5 Year Energy Conservation Plan

2018 City-wide Targets vs 2013

- 5% reduction in Energy Use Intensity
- 5% reduction in GHG emissions

City-wide savings vs 2013

- Energy Intensity dropped by 9.3%
- GHG Emissions dropped by 8.1%
- Avoided utility costs of \$1.3M
- Received incentives of \$1.2M



Previous 5 Year Energy Conservation Plan

Profiled Projects

- LED Lighting Upgrades
- Ice Plant Energy Upgrades
- Real-time Utility Metering
- Solar Panels – The Lions Club of Credit Valley
- Operation Optimization



2014 – 2018 Awards

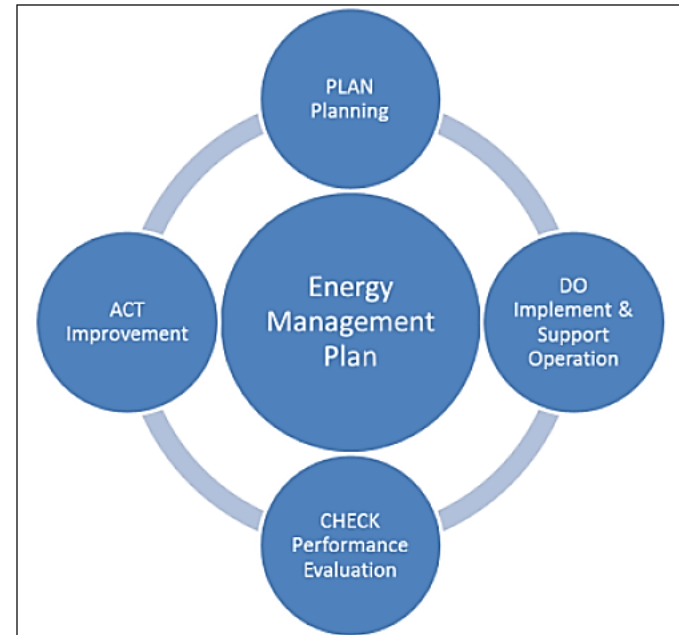
- Living City Energy Efficiency award for Mississauga City Hall for three years in a row (2016, 2017, 2018)
- Best Municipality/University/School/Hospital (MUSH) 1 MW+ Customer Award
- ENERGY STAR® Certification for Mississauga City Hall for 2018
- 2015 Townhall Challenge award for Mississauga City Hall



5 Year Energy Conservation Plan (2019 – 2023)

ISO 50001 Continual Improvement Framework

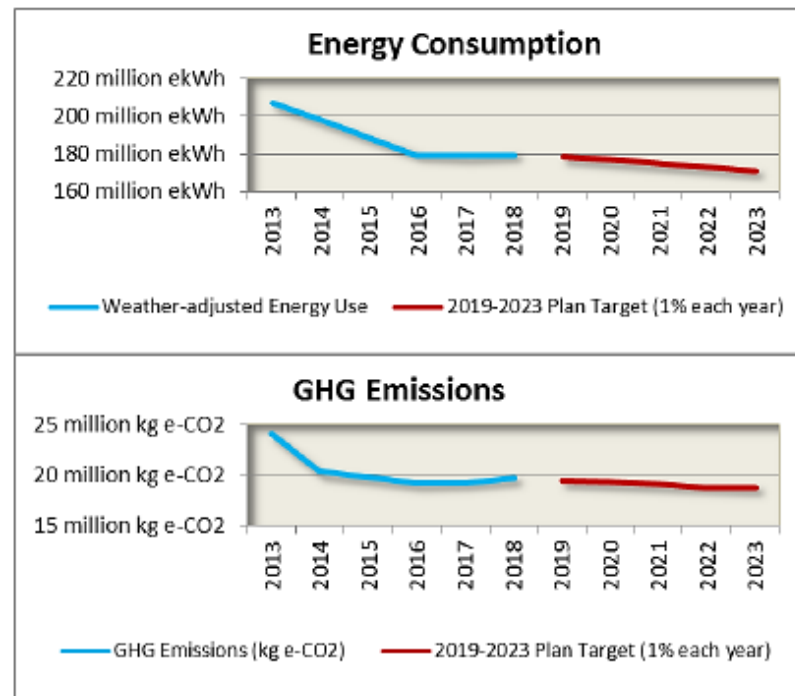
- PLAN: Set a target of 5% energy use and GHG emissions by 2023 over 2018; plan a list of projects
- DO: Request funding each year and execute projects over the 5 years
- CHECK: Utilize real-time utility metering to track performance
- ACT: Utilize the data to make improvements and continually drive energy performance



The 2019 – 2023 Plan

Key Performance Indicators:

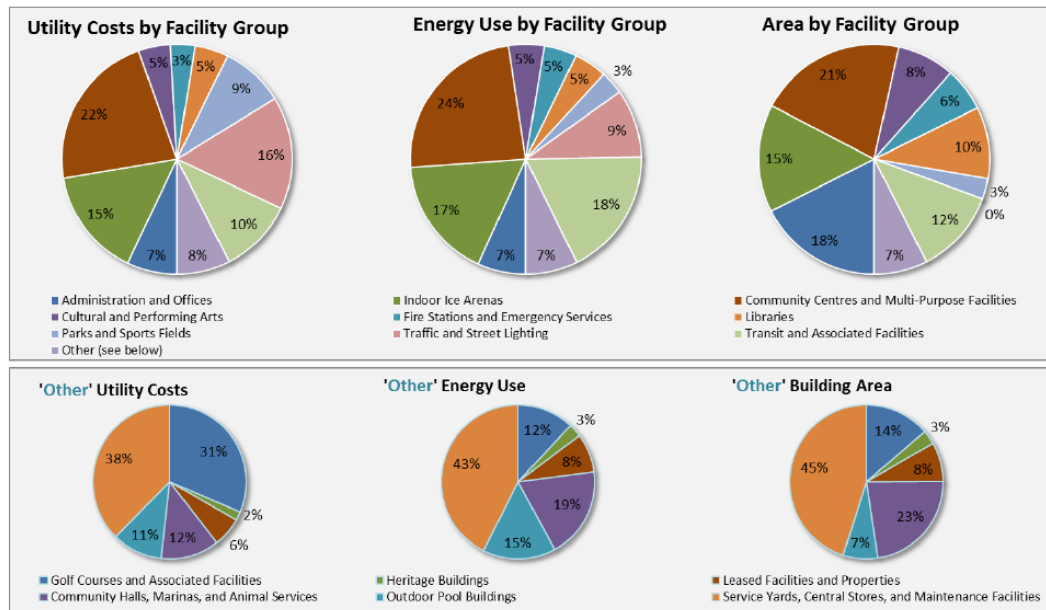
- Energy Consumption
 - Electricity & Natural Gas
- Greenhouse Gas Emissions
 - Using site factors to account for distribution losses
- Measured annually over 2018



The Top Consumers

76% of the City's total energy use is concentrated between 65 facilities and 6 archetypes!!

- Community Centres – 24%
- Transit Facilities – 18%
- Indoor Ice Arenas – 17%
- Administration and Offices – 7%
- Libraries – 5%
- Fire Stations – 5%

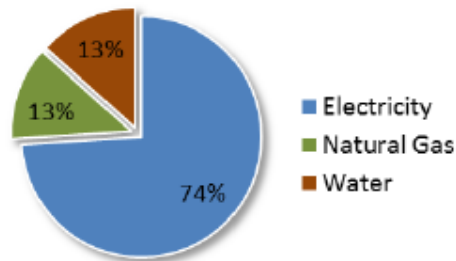


The 2019 – 2023 Plan

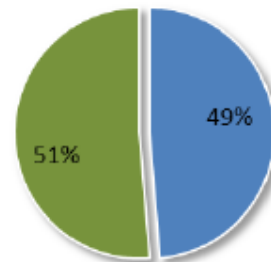
Profiled Projects to be approved under the 'Improve Green' category

- Natural Gas Reduction Projects
 - Pool Heat Recovery
- Electricity Reduction Projects
 - De-humidification Upgrades
 - Building Analytics & Energy Dashboard
 - Real-time Sub-Metering Equipment
 - Lighting Upgrades
 - Solar Panels – Edward J. Dowling Transit Facility

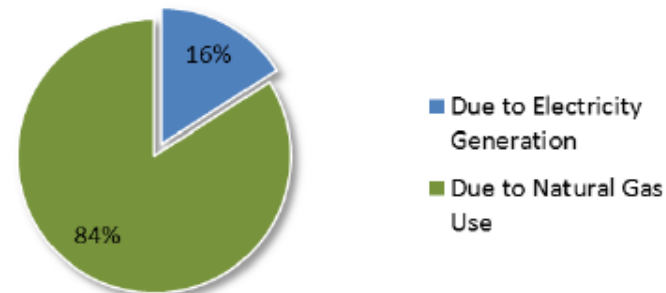
Utility Costs



Energy Use



GHG Emissions



Questions?

Daniela Paraschiv, daniela.paraschiv@mississauga.ca
Manager, Energy Management

Sumeet Jhingan, sumeet.jhingan@mississauga.ca
Project Manager, Energy Management

Mississauga Pollinator Initiatives

June 11, 2019

Sarah Piett

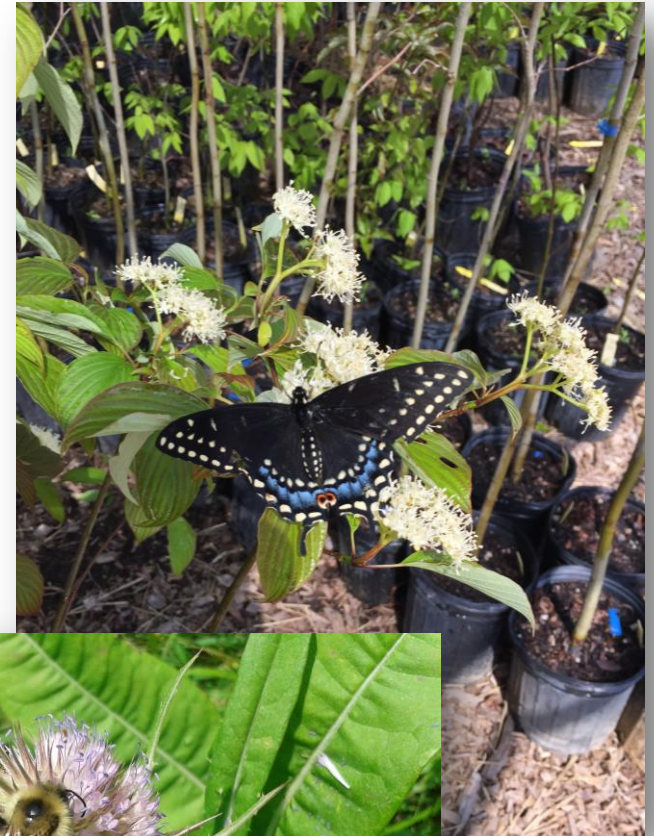
Parks, Forestry & Environment



What are pollinators?

Pollinators

- Bees, butterflies, wasps, moths, flies, beetles and birds
- Transfer pollen between flowers of same species



Native Wild Bees

- Greater than 350 species in the GTA
- Several species are in decline
- Important pollinators in the ecosystem



Sweat Bee



Carpenter Bee



Leafcutter Bee

Honeybees

- Non-native species from Europe/Asia
- Brought to Canada for agriculture



Current Initiatives

Honeybee Hive at City Hall



Pollinator Hotels at Garden Parks



Pollinator Gardens



One Million Trees Mississauga



Bee City Canada

- Commitment to improving pollinator health and habitat
- 23 Bee Cities across Canada



What can we do?

Native Plants

- Planting native wildflowers and flowering trees/shrubs is the best way to help pollinators



Bee Hotels

- Some native wild bees will nest in bee hotels
- Bee hotels need to be maintained
- Proper bee hotel selection is important



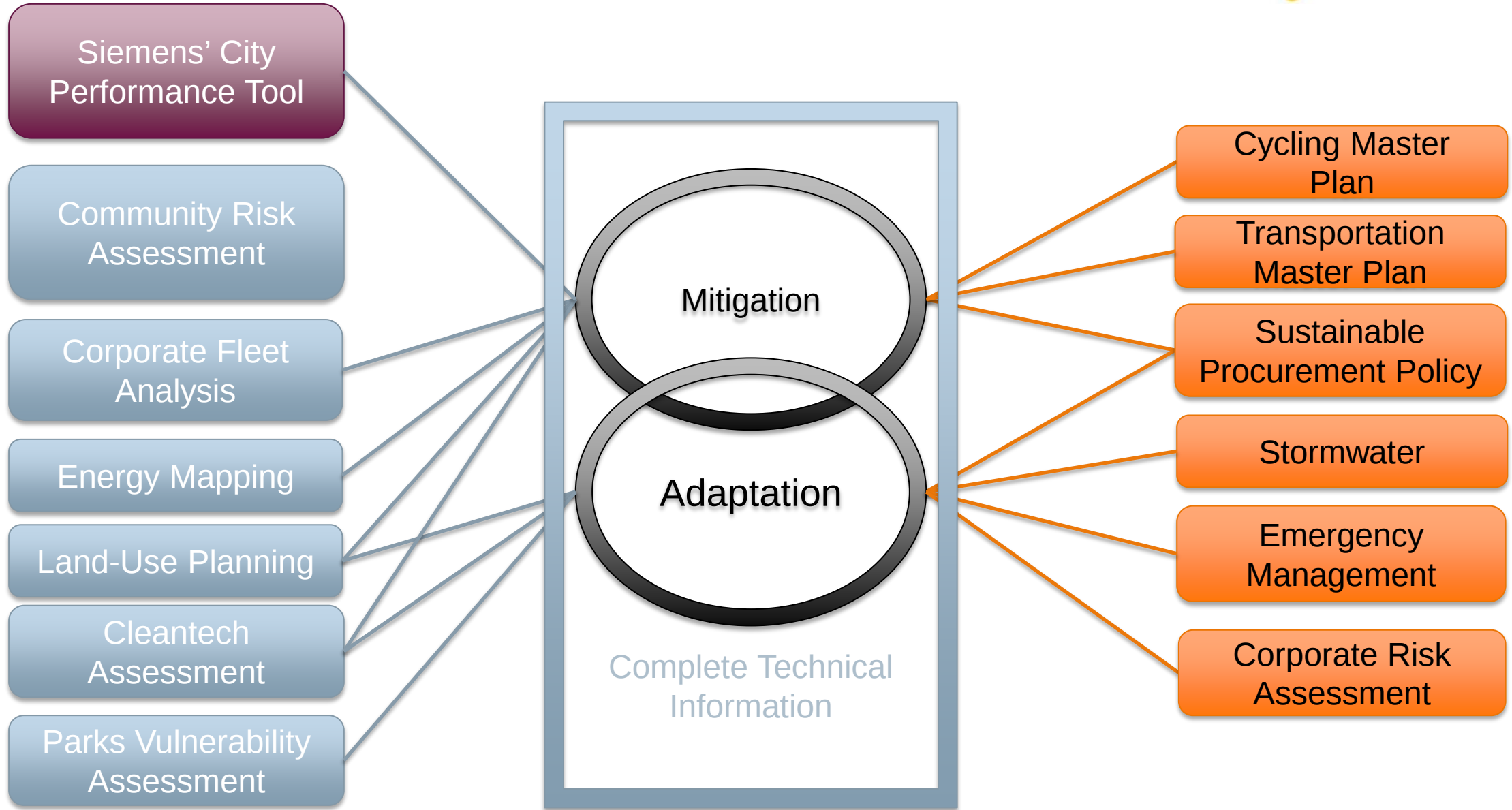


Mississauga's Climate Future

Using the City Performance Tool to Map
Technology Pathways to a Sustainable Future
in 2050

Technical inputs

NEW TECHNICAL INPUTS



Project Overview

City Performance Tool (CyPT)

Allows municipal decision makers to optimize infrastructure and technology investments based on estimated economic and environmental impacts

Using city-specific data to analyze the effects of over 70+ diverse technologies, CyPT calculates the impact on CO₂eq emissions and air quality improvements. It also identifies new local jobs each technology can create in a city.



GHG



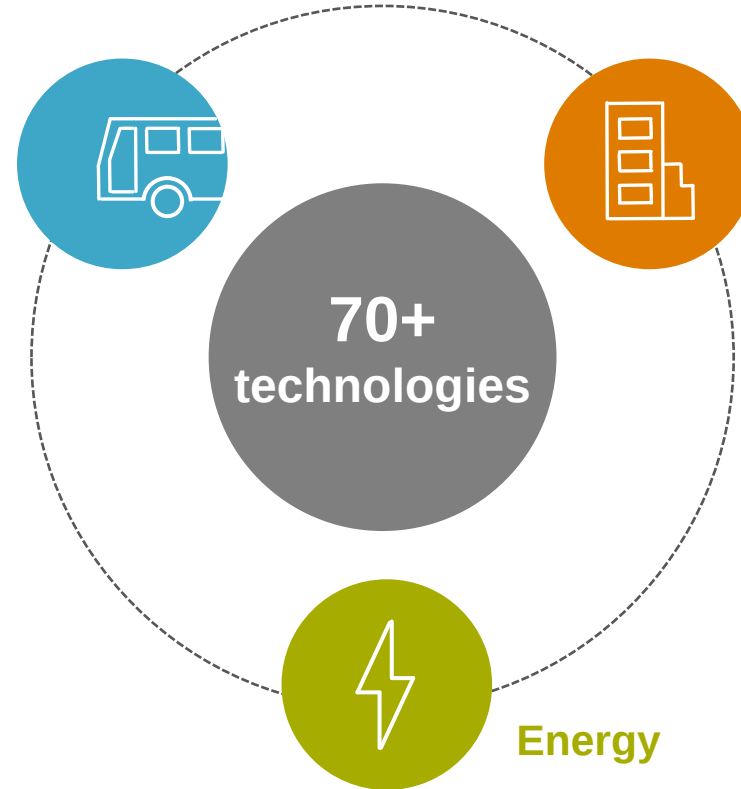
Air quality



Economy

Transport

- Public transport
- Private transport
- Traffic management
- Freight



Buildings

- Building envelope
- Building automation
- Monitoring and optimization

Energy

- Renewable generation
- Combined Heat and Power
- Grid management

What We've Learned from 35+ City Performance Tool Studies



Vienna



Riverside



New Bedford



Nanjing



Shenzhen



Copenhagen



Munich



Minneapolis



Helsinki



Mexico City



Aarhus



Ningbo



Adelaide



San Francisco



Seoul



Berlin



Stuttgart



Wuhan



Charlotte



Washington



Nuremberg



Boston



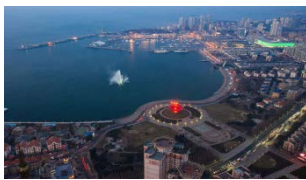
Madrid



Portland



The Hague



Qingdao



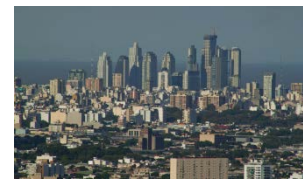
St. Moritz



Phoenix



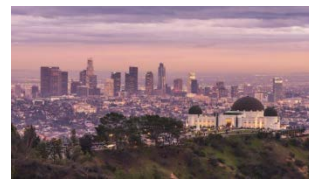
NY-NJ-CT



Buenos Aires



Ghent



Los Angeles



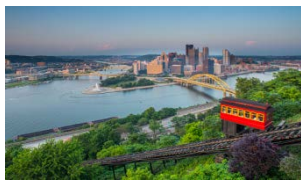
Toronto Pearson



Orlando



Mississauga



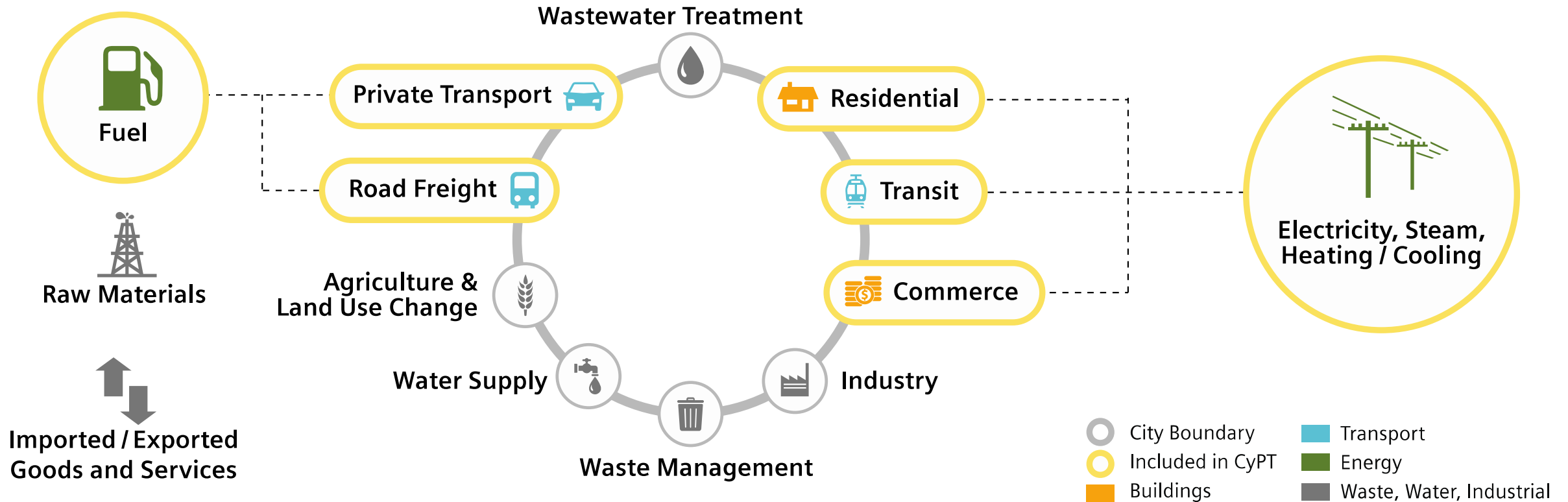
Pittsburgh



Deerfield Beach

Model Inputs

CyPT Scope



Population, Today and 2050

TODAY



POPULATION
(/DENSITY)

721,599
(6,385 per sq. mi.)

2050 (PROJECTED)



POPULATION
(/DENSITY)

919,826
(8,140 per sq. mi.)



27%

Buildings Footprint, Today

Residential



SHARE OF
BUILDING STOCK
BY SQ FOOTAGE

TODAY
31%

AVERAGE
RESIDENTIAL
UNIT SIZE

TODAY
1,626 ft²
151 m²

TOTAL ELECTRICITY
CONSUMPTION

TODAY
2,188 GWh
↑ 21.6% in 2050

AVERAGE ENERGY
USE INTENSITY

TODAY
0.7 GJ/m²

Buildings Footprint, Today

Commercial



TOTAL NON-RESIDENTIAL
BUILDING FOOTPRINT

80M m²

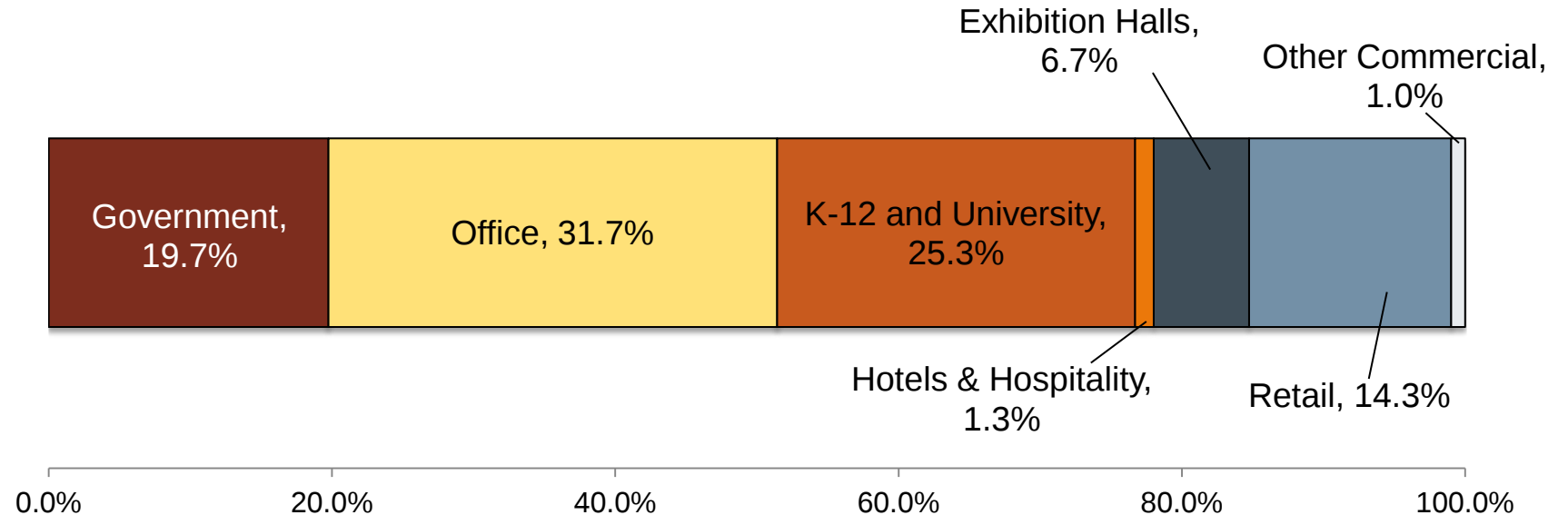
TOTAL
ELECTRICITY CONSUMPTION

4,427 GWh

AVERAGE
ENERGY USE INTENSITY

0.4 GJ/m²

BREAKDOWN OF SQUARE FOOTAGE OF NON-RESIDENTIAL BUILDINGS



Source: Sq footage information obtained from City of Mississauga
EUI and electricity consumption based on data from city and NRCAN [Comprehensive Energy Use Database](#)

Passenger & Freight Transportation, Today



AVERAGE DISTANCE TRAVELED
PER PERSON, PER DAY

44 km / person / day

NO. OF CARS ON THE ROAD
(CARS PER HOUSEHOLD)

437,971 (2)

AVERAGE FUEL ECONOMY

9.8 Liters/100 km



ANNUAL FREIGHT-TON MILES
(/VEHICLE MILES TRAVELED)

4.8 ton-km/person/day
(218 million VKM travelled within Mississauga)

MODE SHARE

100% by Trucks

AVERAGE FUEL ECONOMY

8 MPG

Source: All the transport data from city of Mississauga. VKT for all road transport for transport modeling team at the City. Other public transit information obtained from Metrolinx and GO transit website. Projections based on assuming 30% reduction in car VMT and distributing the difference amongst other modes based on today's weightage

Freight Vkm from the city, for Peel region, scaled to Mississauga based on population

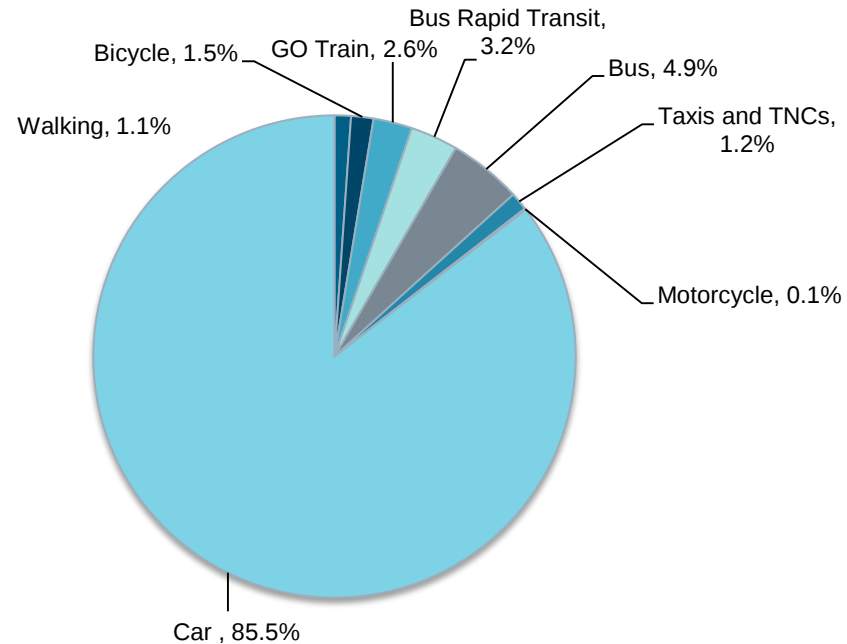
Transportation Footprint, Today and 2050

Passenger Transport

% OF TOTAL ANNUAL PASSENGER KM TRAVELED, BY MODE

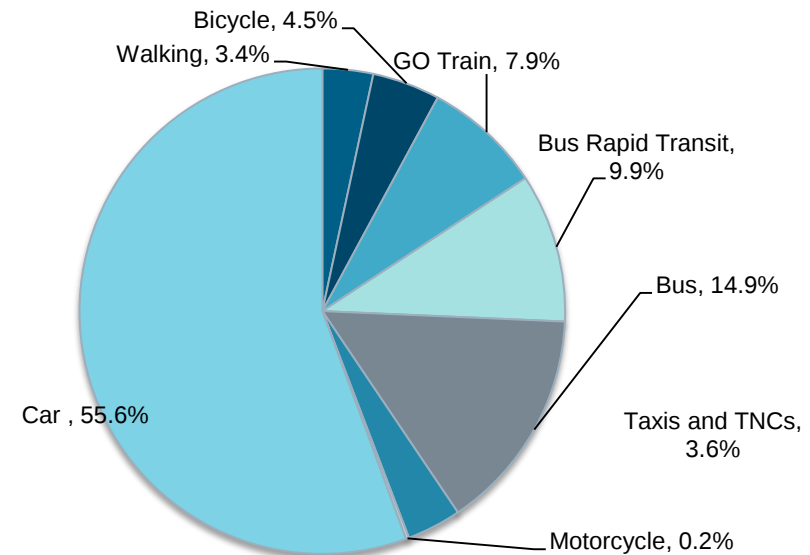
TODAY

14% Transit & Active Transportation



2050 (PROJECTED)

41% Transit & Active Transportation



Source: All the transport data from city of Mississauga.

VKT for all road transport for transport modeling team at the City. Other public transit information obtained from Metrolinx and GO transit website

Projections based on assumption for transit mode share for 2050 is based on the City's transportation target to ensure 50% of the vehicle kilometers traveled in 2041 come from single occupancy vehicles.

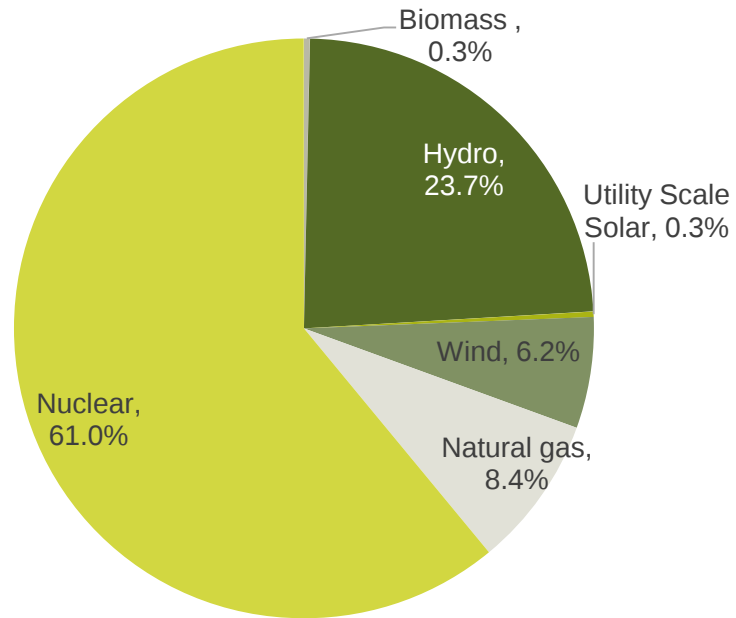
Energy Footprint, Today to 2050



ELECTRICITY MIX

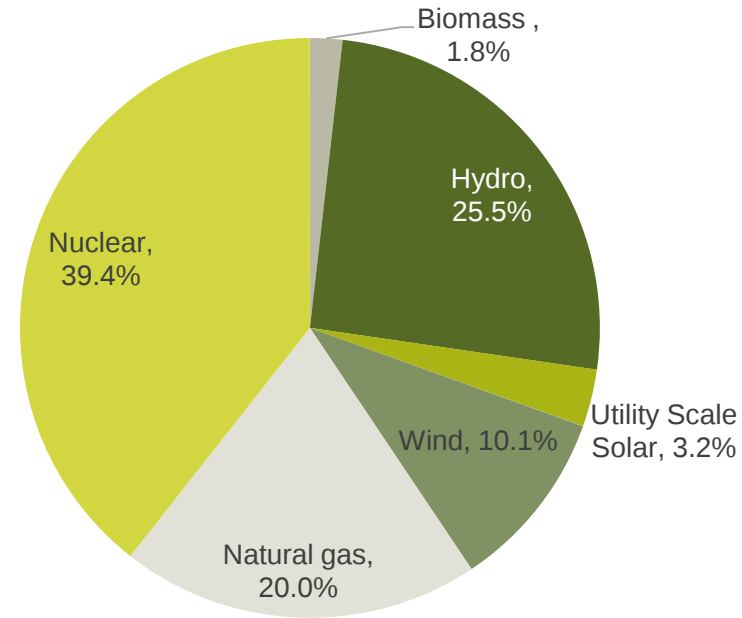
TODAY

30.6% Renewables

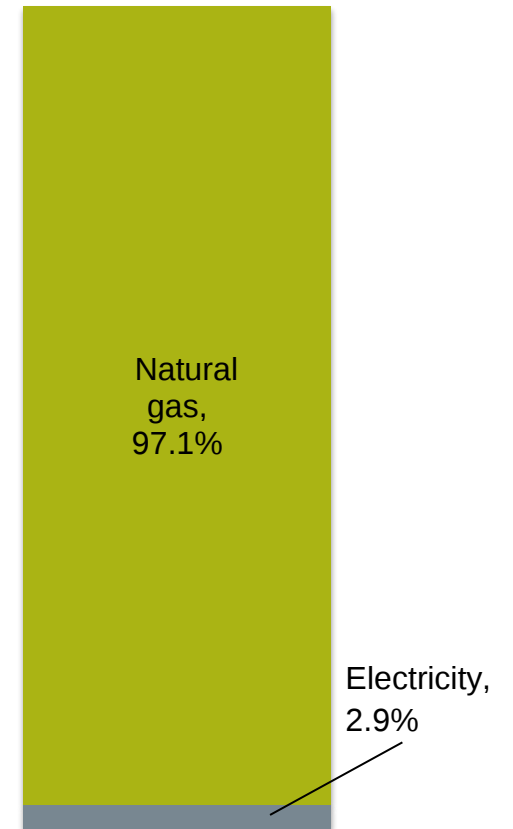


2050 (PROJECTED)

40.6% Renewables



HEATING MIX (Today)

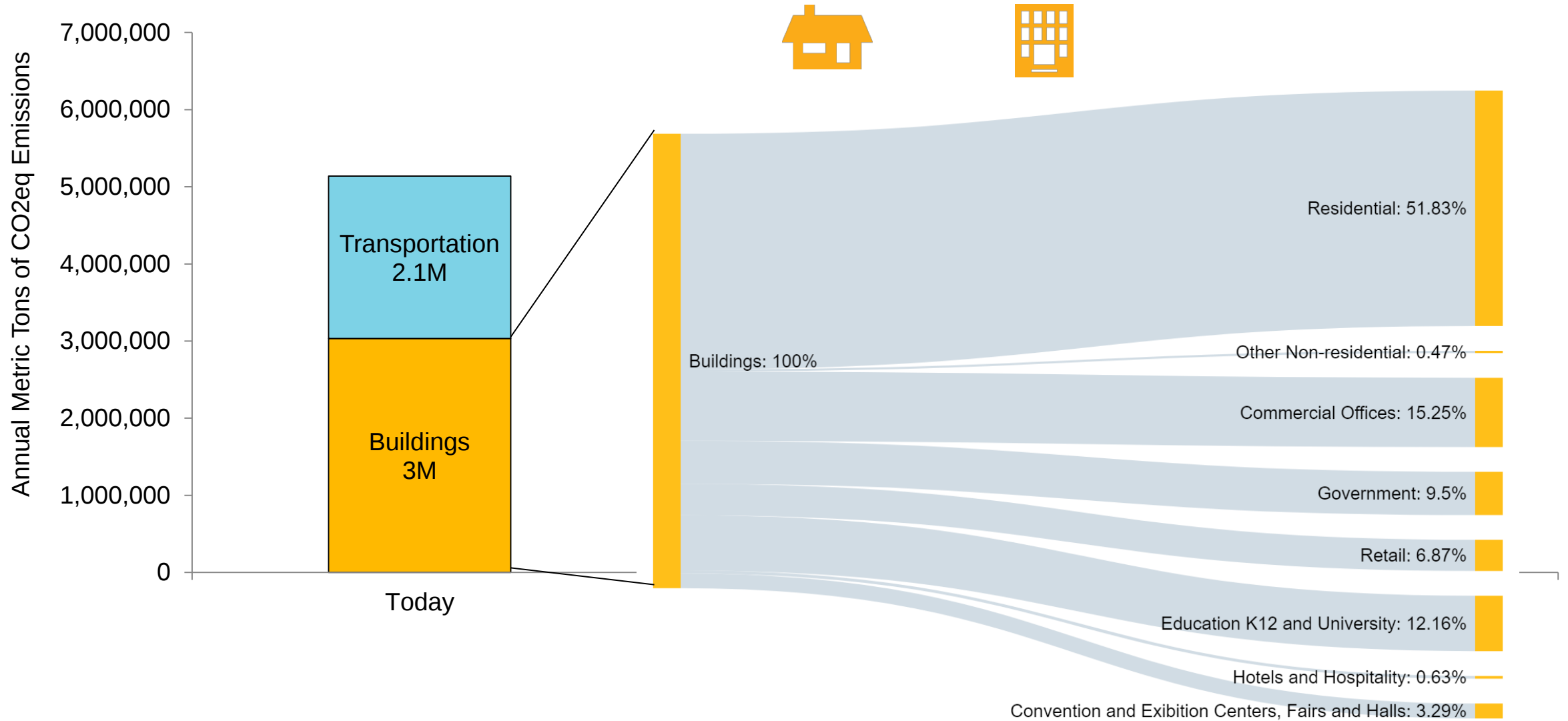


Source: Today's Electricity Mix data and Projections obtained from IESO's proposed generation mix (pg 64) from IESO website [here](#)

GHG Emissions, Today and 2050

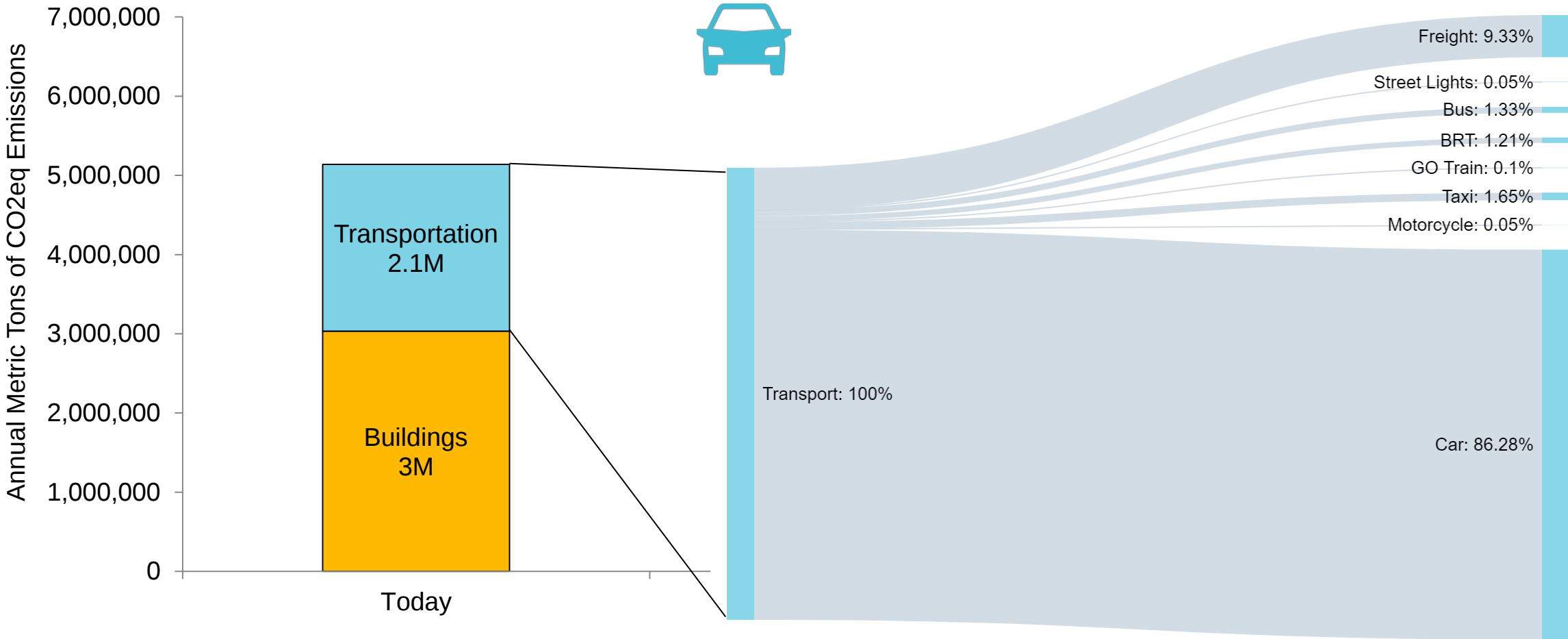
GHG Emissions, Today

Buildings



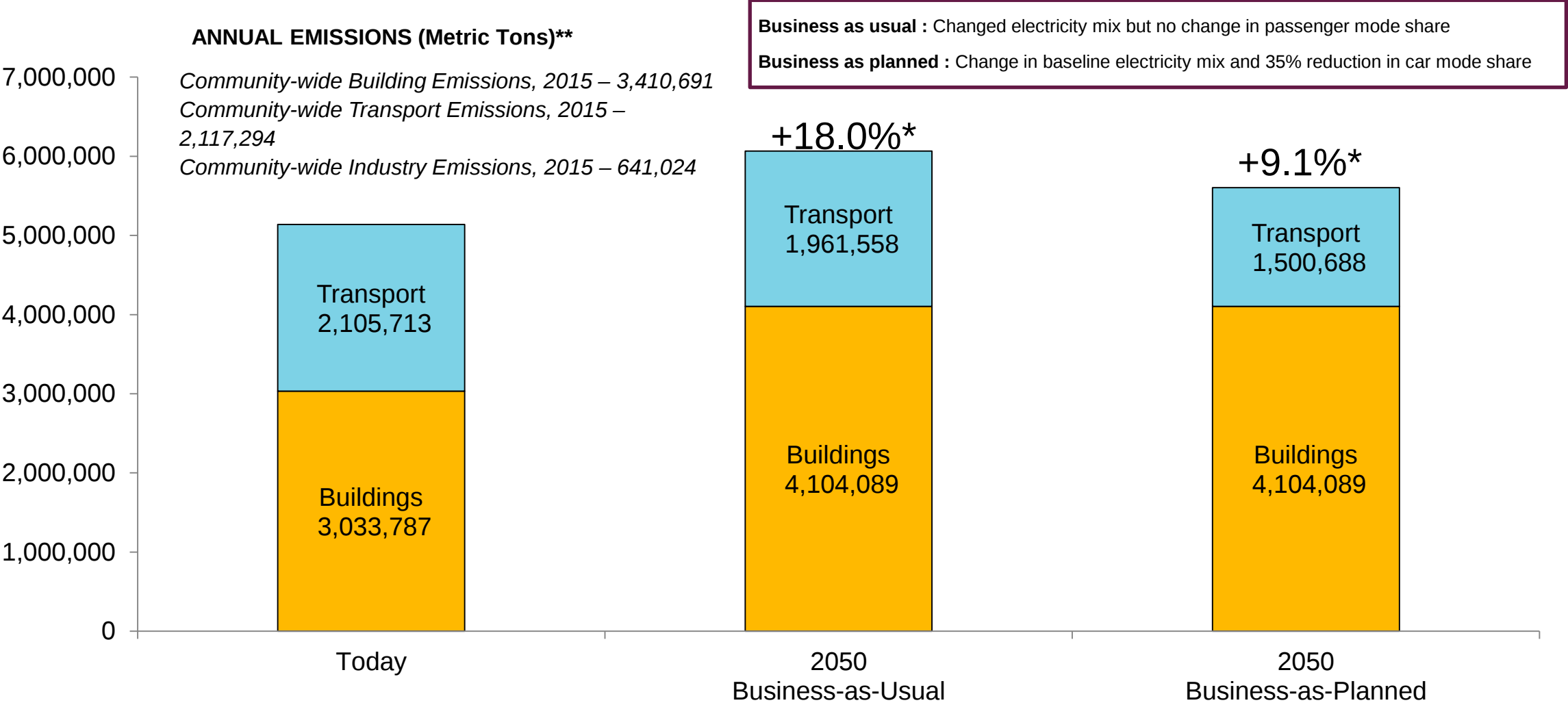
GHG Emissions, Today

Transportation



Estimated GHG Emissions, “Today” (2016) and 2050

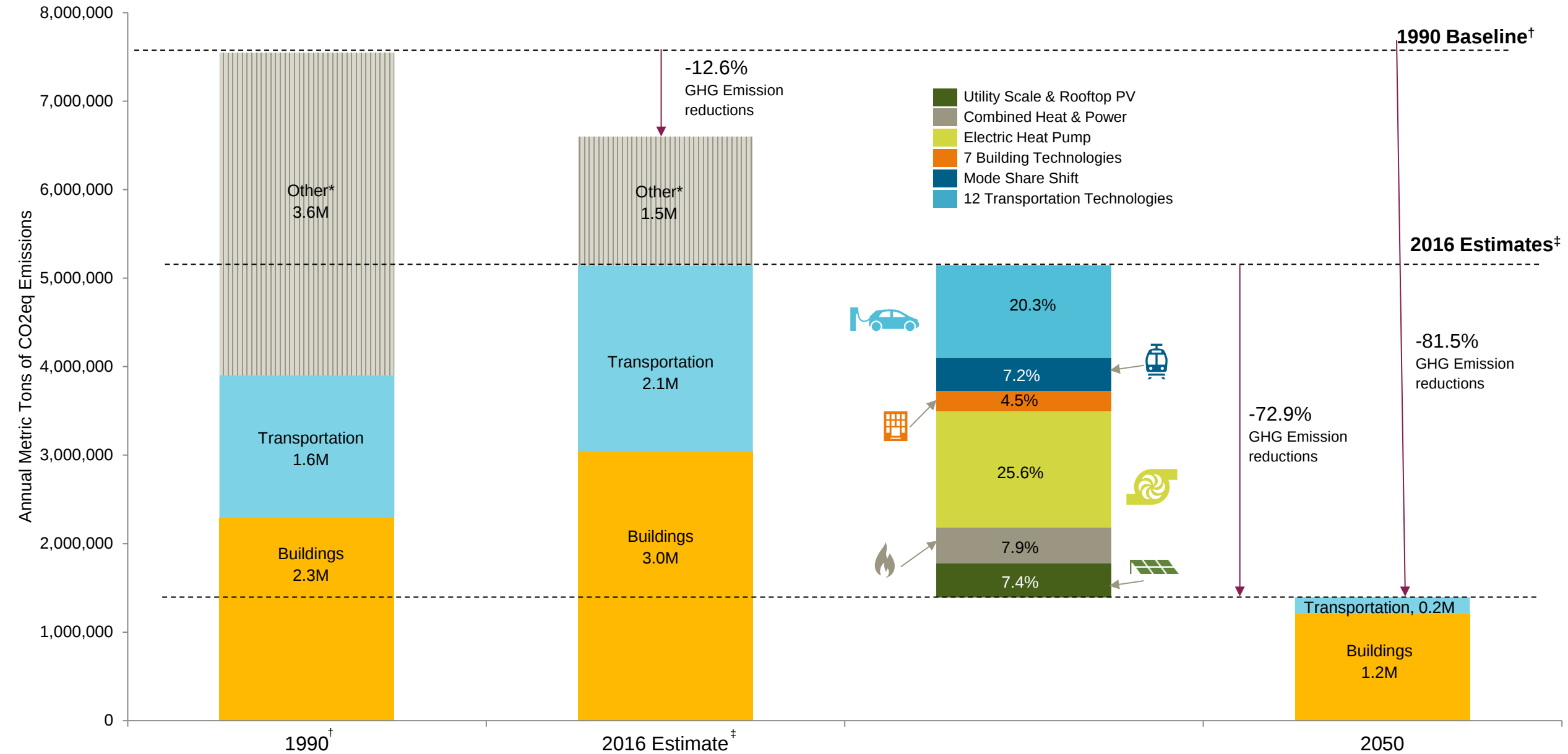
Annual Metric Tons of CO2eq Emissions



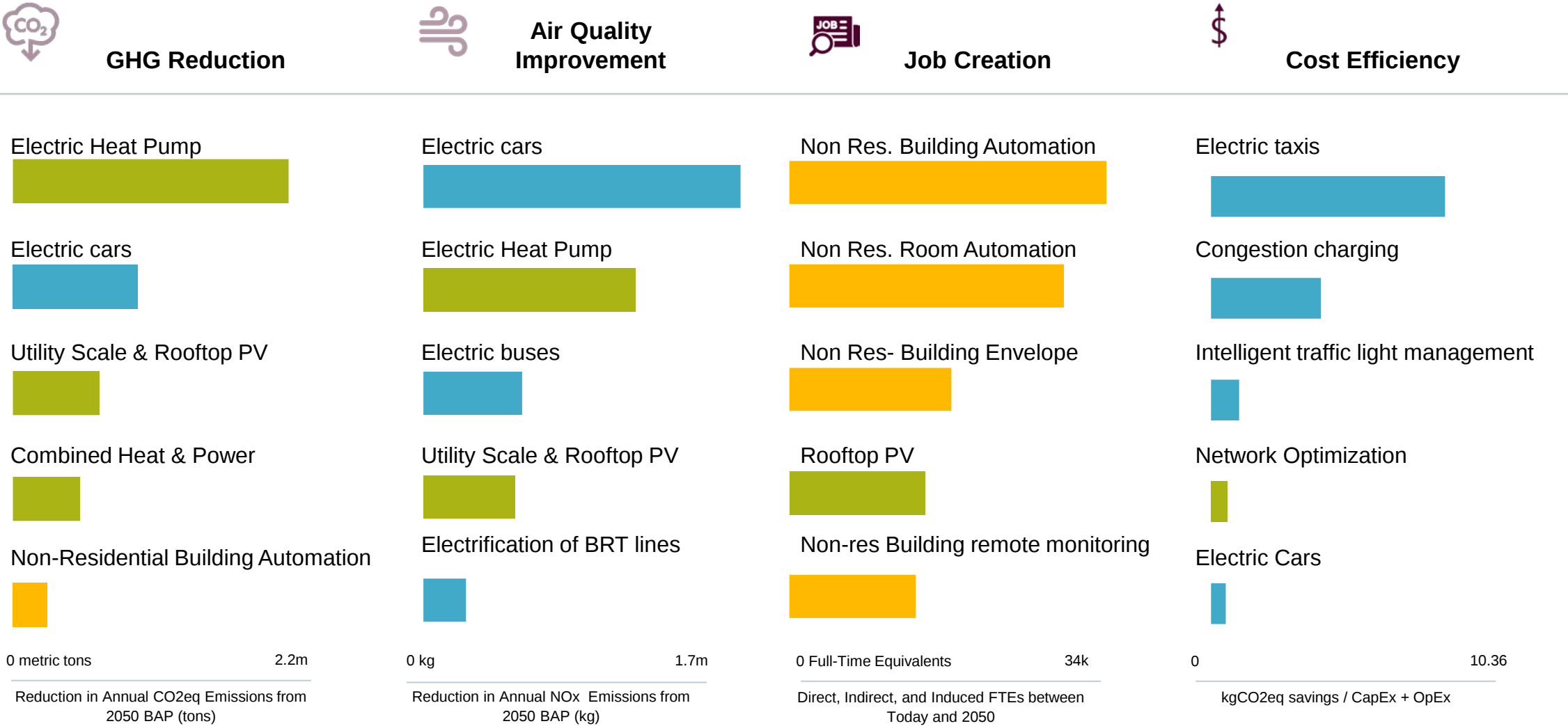
*As compared to Today

** Based on City’s GHG inventory, 2015

Deep Carbon Reduction Can Be Achieved



High-Performing Technologies



Stay Tuned!





THANK YOU!

Leya Barry

Climate Change Coordinator

Leya.Barry@mississauga.ca

APPENDICES

Modeled Technologies and Adoption Rates

CyPT Levers

Buildings and Energy

Sources for modeled technologies and adoption rates include:

Discussion with Mississauga Environment Division, Living Green Master Plan, Peel Climate Change Strategy



RESIDENTIAL (2) +



NON-RESIDENTIAL (5) BUILDINGS

Lever	Unit	Adoption, Today	Adoption, 2050
Wall insulation (Residential)	% of building stock with lever	40%	100%
Home Automation (Residential)	% of building stock with lever	5%	70%
Building Performance Optimization (NR)	% of building stock with lever	2%	70%
Building Envelope (NR)	% of building stock with lever	35%	100%
Building Automation (NR)	% of building stock with lever	15%	75%
Room Automation - Lighting + HVAC (NR)	% of building stock with lever	5%	70%
Building Remote Monitoring (NR)	% of building stock with lever	0%	60%



ENERGY (6)

Lever	Unit	Adoption, Today	Adoption, 2050
Utility Scale & Rooftop PV	% of total electricity generation	0%	50%
Utility Scale Wind Power	% of total electricity generation	6.2%	21.2%
Combined Heat & Power	% of total heating demand	0%	30%
Electric Heat Pumps	% of total heating demand	2.9%	50%
Network Optimization	% of electric grid optimized	0%	100%
Smart Grid for Monitoring & Control	% of electric grid replaced with smart grid	0%	100%

CyPT Levers

Transportation



PUBLIC TRANSIT (4)

Lever	Unit	Adoption, Today	Adoption, 2050
eBuses	% of public bus fleet	0%	100%
eBRT - New Lines	Total no. of lines	0	5
BRT – Electrification	% of existing BRT lines electrified	0%	100%
Tram – New Lines	Total no. of lines	0	2



PRIVATE TRANSPORTATION (4)

Lever	Unit	Adoption, Today	Adoption, 2050
Electric Cars	% of cars on the road	0.4%	100%
Electric Taxis	% of taxis on the road	0%	100%
Electric Car Sharing	No. of car sharing cars	0	1000
Bikeshare	Total no. of sharing bikes	0	5000



INFRASTRUCTURE (4)

Lever	Unit	Adoption, Today	Adoption, 2050
Intelligent Traffic Light Management	% of traffic lights w/ coordinated fixed time, rule-based, or adaptive control	0%	100%
Congestion Charging	% reduction in road traffic	n.a.	15%
Public Transport - eTicketing	% of Users as share of travelers	67%	100%
eHighway	% of freight corridors electrified	0%	75%

Full List of Technologies

Choosing the Infrastructure Technologies

Building

Residential

- | Residential Wall Insulation
- | Residential Double/Triple Glazing
- | Residential Building Envelope
- | Residential Efficient Lighting
- | Home Energy Monitoring
- | Home Automation

Commercial

- | Remote Monitoring
- | Efficient Motors & Drives
- | Room Automation, HVAC
- | Room Automation, HVAC+Lighting
- | Room Automation, HVAC+Lighting+Blinds
- | Building Automation, BACS C
- | Building Automation, BACS B
- | Building Automation, BACS A
- | Commercial Wall Insulation
- | Commercial Double-Triple Glazing
- | Commercial Efficient Lighting
- | Demand Oriented Lighting
- | Building Efficiency Monitoring
- | Building Performance Optimization
- | Demand Controlled Ventilation
- | Heat Recovery
- | Commercial Building Envelope



Choosing the Infrastructure Technologies

Public & Passenger Transportation

Public

- | Metro - New line
- | Metro - New vehicles
- | Metro - Reduced headway
- | Metro - Automated train operation (ATO)
- | Metro - Regenerative braking
- | Regional Train - Automated train operation (ATO)
- | Tram - New line
- | Tram - New vehicles
- | Tram - Automated train operation (ATO)
- | Tram - Regenerative braking
- | Hybrid electric buses
- | e-BRT (Bus Rapid Transit) - New line
- | BRT (Bus Rapid Transit) - Electrification
- | Buses - New CNG vehicles
- | Cycle highway

| Bikeshare

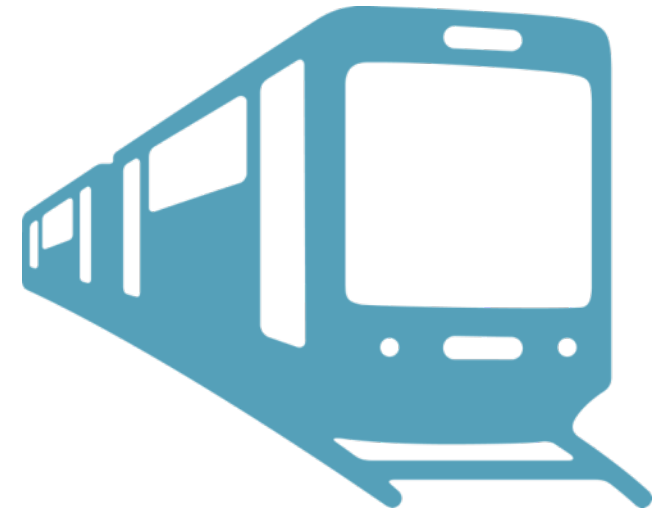
| Public Transport - E-ticketing

Private

- | Reduction in car demand
- | CNG cars
- | Electric cars
- | Hydrogen cars
- | Hybrid electric cars
- | Plug-in hybrid electric car
- | Electric car sharing
- | Electric taxis
- | Car & Motorcycle - City tolling
- | Car - Eco-Driver Training and consumption awareness
- | Occupancy-dependent Congestion Pricing

Infrastructure

- | LED Street lighting
- | Demand-oriented street lighting
- | Smart Street Lighting
- | Intelligent traffic light management
- | Intermodal traffic management



Choosing the Infrastructure Technologies

Freight Transportation

Freight

- | Freight tram – Line upgrade
- | Freight Train – Electrification
- | Lorries/Trucks – Low emission zone
- | E-Highways
- | Harbors – Onshore Power Supply



Choosing the Infrastructure Technologies

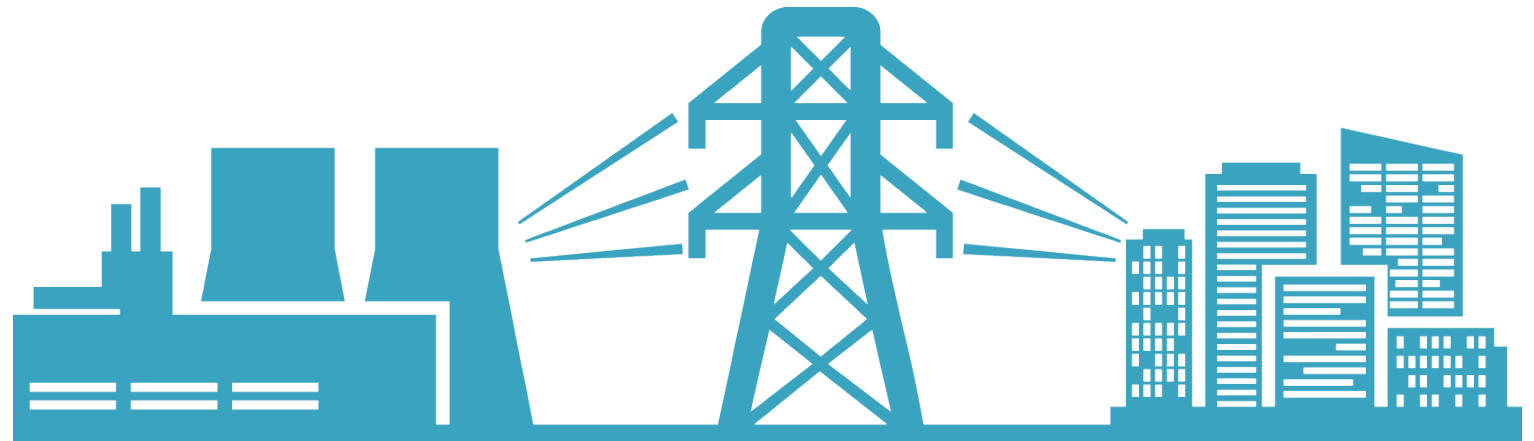
Energy

Generation

- | Photovoltaic
- | Wind Power Generation
- | Combined Cycle Gas Turbine
- | Combined Heat and Power

Management

- | Network Optimization
- | Smart Grid for Monitoring and Automation
- | Power System Automation and Optimized Network
- | Smart metering
- | Distributed generation



Terms of Reference for Environmental Action Committee

7.1 - 1

Mandate

The Mississauga Environmental Action Committee (EAC) is an advisory committee of Council established to offer advice and recommendations to the Council of the City of Mississauga in support of environmental direction in the Strategic Plan and the Living Green Master Plan.

EAC's main purpose is to champion local action to address environmental issues.

EAC will provide a forum for the public to share their concerns and discuss new or changing environmental legislation or regulations, conservation, environmental sustainability and the environment in relation to overall quality of life.

Objectives/Goals

The Mississauga Environmental Action Committee shall operate according to the Procedural By-law regulating the operation of meetings of Council and its Committees. Appointed members are required to attend meetings on a monthly and on an 'as required' basis to discuss issues related to the environment in the City of Mississauga.

EAC will engage the community in priority actions which enhance the environmental sustainability of Mississauga.

EAC will be a community role model for environmental action.

EAC will support implementation of the Strategic Plan's Living Green Strategic Pillar for Change and actions in the Living Green Master Plan.

Work Plan

The Environmental Action Committee shall prepare a four-year Work Plan in cooperation with staff to be approved by General Committee and Council. At the beginning of each year, EAC will update the Work Plan and present an annual progress report to Council.

EAC will ensure Work Plans relate directly to the mandate and specific goals of the Committee. Work Plans shall support the City's environmental priorities (e.g. Strategic Plan, Living Green Master Plan and other environmental master plans) and be accomplished within budgetary capacity.

Work Plan status will be a standing EAC agenda item.

Definitions

Not applicable.

Procedures and Frequency of Meetings

All Committees are subject to the Council Procedure By-law, which outlines the procedures for Council and Committee meetings.

(http://www7.mississauga.ca/documents/bylaws/Council_Procedure.pdf)

The Environmental Action Committee will meet approximately ten (10) times per year, usually on the first Tuesday of every month (no meetings in January and August), or as determined by the Committee at the call of the Chair, or at the direction of General Committee and/or Council.

Membership

All members are subject to the Code of Conduct and Complaint Protocol for Local Boards.

http://www7.mississauga.ca/documents/CityHall/pdf/2014/Local_Boards_Code_of_Conduct.pdf and Corporate Policy 02-01-01: Citizen Appointments to Committees, Boards and Authorities. <http://inside.mississauga.ca/Policies/Documents/02-01-01.pdf>

The membership on the Mississauga Environmental Action Committee shall consist of appointments by Resolution of Council for Citizen Members, Stakeholder Members, and Council Members and will comprise of the following with voting rights:

Appointment of Members (by Resolution)

- 3 Councillors
- 4 Citizen Members
- 4 Group Representatives from a broad range of environmental stakeholders (e.g. environmental interest groups, community groups, conservation authorities, school boards, post-secondary institutions, energy utilities, industrial and commercial businesses, business associations)
- 1 local university student (University of Toronto at Mississauga – UTM)
- 1 Peel Environmental Youth Alliance (PEYA) youth representative

Additional Membership (by Resolution)

- Councillors and Citizen Members may also select any additional Group Representatives from a broad range of environmental stakeholders to act liaisons to the committee as non-voting members.

Recruitment of citizens to be appointed to EAC will follow the Corporate Policy and Procedure for recruitment of Citizen Appointments to Committees, Boards and Authorities (Corporate Policy and Procedure 02-01-01).

The Term of Office for EAC members (with the exception of students) shall run concurrent with the term of Council, or until successors are appointed.

Students shall be appointed for one (1) year.

All voting members count towards quorum.

Appointment of Chair and Vice-Chair

At the first meeting of the new term of the EAC, the members shall appoint, from among their number, a Chair and Vice-Chair.

Role of the Chair

The role of the Chair is to:

1. Preside at the meetings of Environmental Action Committee using City of Mississauga's Procedure By-law, and keep discussion on topic.
2. Provide leadership to Environmental Action Committee to encourage that its activities remain focused on its mandate as an Advisory Committee of Council.
3. Review agenda items with the Committee Coordinator and Environment Division in the City.
4. Recognize each Member's contribution to the Committee's work.
5. Serve as an *ex-officio* member of subcommittees and attend subcommittee meetings when necessary.
6. Liaise with the Director of the Environment Division on a regular basis.
7. Liaise with other EAC members on a regular basis.
8. Make deputations, presentations, etc. before General Committee or Council.

Notwithstanding the role of the Chair, other committee members may make deputations, presentations, etc. before General Committee or Council.

Despite the appointment of a Vice-Chair, the Chair may appoint an alternate (Acting) Chair in their absence.

Role of the Vice-Chair

In the absence of the Chair, the Vice-Chair will chair meetings and act for the Chair as necessary.

Role of Committee Members

The role of Committee Members is to:

1. Work collaboratively with City staff to develop a four-year Work Plan and prepare annual progress reports. Work Plans will ensure workload is manageable and appropriately shared between EAC members and staff.
2. Present annual progress reports to Council on behalf of EAC.
3. Ensure that the mandate of EAC is being fulfilled.
4. Engage the community in environmental action and be a community role model by participating in outreach opportunities that increase community knowledge/education with respect to priority environmental issues and which accelerate community action or commitment to: tree planting, reducing stormwater runoff, energy conservation, waste reduction, taking active and alternative modes of transportation, local food production, reducing greenhouse gas emissions, water conservation, protecting and enhancing green spaces and other appropriate causes.
5. Conduct research to help inform environmental programs, outreach campaigns, by-laws, etc. that support the environmental direction in the Strategic Plan (particularly the Living Green Strategic Pillar for Change) and actions in the Living Green Master Plan.
6. Help build community partnership opportunities and leverage community networks to increase local environmental action.

EAC Terms of Reference

7. Provide the Chair with solid, factual information regarding agenda items.
8. Advise on any controversial or significant environmental issues.
9. Notify the Committee Coordinator if they are unable to attend Environmental Action Committee meetings to ensure that quorum will be available for all meetings.

Subcommittees

That, as per the Procedure By-law 139-2013, a Committee of Council may establish a subcommittee which shall consist of members of the parent Committee, as may be determined by such parent Committee and any other member approved by Council.

1. Subcommittees will be formed to deal with specific issues, and will make recommendations to the parent Committee. The recommendations of the subcommittee will be presented in a report at the next available EAC meeting.
2. Once the specific issue is dealt with the subcommittee shall cease.
3. All appointed members of the subcommittee have the right to vote.
4. The Chair of the subcommittee will be appointed at the first meeting of the subcommittee.

Staff Liaison

City staff from key environmental positions within The Corporation, plus technical staff as required from time to time, will provide support for the reviews and activities of EAC.

Agency/Other Participants

Representation from various agencies invited by the Committee and/or its Corporate staff liaison will not require appointment by Council Resolution.

Quorum

1. Quorum of the Environmental Action Committee shall be reached with the presence of a majority of the appointed members, at a time no later than thirty (30) minutes past the time for which the beginning of the meeting was scheduled and so noted on the agenda or notice of the meeting.
2. The issuance of an Agenda for a meeting of this Committee will be considered as notice of that meeting.
3. The presence of one (1) of the appointed Council members shall be required to establish quorum.