

# MAPC Community Greenhouse Gas Inventory Tool Update Tracker

*Date of last updates: 2/28/25*

Sheet	Cell(s)	Issue / Improvement Reported	Correction Made	Status
All	N/A	Instructions were all for 2017 Inventory Year	Updated instructions for 2022 Inventory Year	Changed in Version 6.0, 2/28/25
Introduction	N/A	N/A	Updated and simplified the instructions	Changed in Version 6.0, 2/28/25
Inputs	C14	Default Inventory Year was 2017	Updated default Inventory Year to 2022	Changed in Version 6.0, 2/28/25
Inputs	B193-194	Instructions for city/town total employment and manufacturing employment data were missing	Added instructions for inputting city/town employment and manufacturing employment data from the MA Department of Economic Research	Changed in Version 6.0, 2/28/25
Inputs	B196	Instructions for accessing data on Square Feet of Commercial Development Under Construction were missing	Added instructions for accessing data on Square Feet of Commercial Development Under Construction	Changed in Version 6.0, 2/28/25
Inputs	B215-D271	Instructions and inputs for MA Vehicle Census data in 2017 didn't match the format of the 2022 data	Updated the instructions and inputs to match the data inputs (annual vehicle miles traveled, annual fuel consumption) for all vehicle classes (passenger, commercial, municipal, state) and fuel types (gasoline, diesel, flexfuel, hybrid electric, plug-in hybrid electric, compressed natural gas, propane, hydrogen fuel cell, electric, other)	Changed in Version 6.0, 2/28/25
Inputs	B233-D237 in V4.2	Previous version included inputs for municipal vehicle fuel consumption data because the data was not included in the 2014 MA Vehicle Census	Removed input because municipal vehicle fuel consumption data is included in the 2022 MA Vehicle Census	Changed in Version 6.0, 2/28/25
Inputs	B273-C284	Previous version included inputs for annual system-wide MBTA data that do not change based on the selected city/town	Moved the system-wide MBTA data inputs to the 'Adjust Inventory Year' sheet; the only remaining MBTA data input on this sheet is the	Changed in Version 6.0, 2/28/25

			City/Town Frequency-weighted Route Distance	
Inputs	B264-F267 in V4.2	Previous version included inputs for regional transit authority and municipally operated vehicles because they were not included in the 2014 MA Vehicle Census data	Removed input because regional transit authority and municipally operated public transportation vehicles are included in the 2022 MA Vehicle Census data	Changed in Version 6.0, 2/28/25
Inputs	C293-294	Previous version used default values of 40% landfill and 60% incineration	Updated the defaults to match the state-wide percentages of 10% landfill and 90% incineration	Changed in Version 6.0, 2/28/25
Inputs	C309-314	Values for Percent of Total Disposed Waste in Category were for 2017	Updated Percent of Total Disposed Waste in Category to 2022 values	Changed in Version 6.0, 2/28/25
Inputs	B-C321	Previous version required users to input the mass of private hauler collected waste; if no value was input, the tool excluded private hauler waste from total emissions	Added a question to ask if users know the mass of solid waste collected by private haulers. If yes, the user can input those values. If no, the tool uses data from the MassDEP Municipal Solid Waste & Recycling data to estimate the mass of residential solid waste collected by private haulers	Changed in Version 6.0, 2/28/25
Inputs	B-E316, B328-D331	Previous version did not include instructions or links to the MassDEP Municipal Solid Waste & Recycling data, which provides the number of households in the community, the number of households served by the municipal trash program, and the mass of solid waste collected by municipal trash programs	Added instructions and links to access the MassDEP Municipal Solid Waste & Recycling data	Changed in Version 6.0, 2/28/25
Inputs	B333-C337	The previous version did not ask users which landfill the community's waste is sent to	Added a question to ask if the users know which landfill the community's waste is sent to. If yes, there is a dropdown list to select the landfill. This data is used to determine the methane recovery factor of the waste sent to a landfill.	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B16	Instructions referred to sections in the 2017 report	Updated instructions to reference the correct tables in	Changed in Version 6.0, 2/28/25

			the 2022 version of the MA GHG Emissions Report for Retail Sellers of Electricity	
Adjust Inventory Year	C19-D22	Emission factors were from 2017	Updated to 2022 emission factors	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B24-E69	Instructions and inputs were for 2017	Updated instructions to reference the correct sections of the 2022 version of the MA GHG Emissions Report for Retail Sellers of Electricity; updated the values for 2022	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B27	Eversource was divided into Eversource/NSTAR and Eversource/WMECO; the data is no longer reported separately	Consolidated the Eversource data into one row	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B71-C74	Instructions and inputs were for 2017	Updated instructions and value for 2022	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B76-E79	Link did not work and value was for 2017	Updated link to the IPCC Global Warming Potential Values; updated GWP values to most recent available	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B81-F86	Instructions and inputs were for 2017; link to TCR did not work; diesel had incorrect units (MT CO2e/gal)	Updated instructions, links, and values for 2022; included Maine emissions factors resource; updated diesel units to MT gas/gal	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B-E93	Inputs were for 2017	Updated inputs for 2022	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B97-G106	Previous source for identifying the top 7 selling EVs is no longer available	Added instructions and inputs for identifying the top 7 selling EVs from MOR-EV Data; added detail to instructions for identifying the vehicle efficiency	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B108-F119	MBTA System-wide inputs were located on the inputs sheet	Moved to this sheet because they are system-wide inputs that vary year-to-year, but not by city/town	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B123-C132	Values were for 2017; did not include inputs for exported solid waste	Updated values to 2022; added inputs for exported waste data	Changed in Version 6.0, 2/28/25
Adjust Inventory Year	B143-B159	Previous methodology for wastewater emissions calculations were based on	Updated wastewater emissions calculations to follow the methodology in the	Changed in Version 6.0, 2/28/25

		outdated, not publicly available data	MassDEP Annual GHG Inventory Report, Appendix C, Wastewater sheet. Added inputs for variables that may change year-to-year	
All Emissions - Summary	E-F20	Municipal transportation emissions linked to table that is no longer there; municipal transportation emissions did not account for Scope 2 emissions from EVs	Updated municipal transportation summary to reference MA vehicle census data for municipal vehicles; added Scope 2 emissions to account for EVs	Changed in Version 6.0, 2/28/25
All Emissions - Summary	C36, C62, C91, B123, C139, C140, B151	Previous version included all public transportation, but non-MBTA vehicles are now included elsewhere	Added "MBTA" to all public transportation rows to clarify that this only includes MBTA vehicles	Changed in Version 6.0, 2/28/25
All Emissions - Summary	C-D138, B-C156	Previous version did not include State vehicles because they were not included in the 2014 MA Vehicle Census data	Added rows for emissions from State Vehicles (data is from MA Vehicle Census)	Changed in Version 6.0, 2/28/25
Emissions Factors	G10, G12, D18, D21, D22, F34, D115, D125, H129, I129, E136	Links were outdated or did not match the links on the Adjust Inventory Year sheet	Updated links to 2022 versions to match links on Adjust Inventory Year sheet	Changed in Version 6.0, 2/28/25
Emissions Factors	B34	Instructions were for 2017 report	Updated instructions for 2022 report	Changed in Version 6.0, 2/28/25
Emissions Factors	F38, F67	VLOOKUP formula	Changed to Index(Match) formula to avoid errors	Changed in Version 6.0, 2/28/25
Emissions Factors	B48	Eversource was divided into Eversource/NSTAR and Eversource/WMECO; the data is no longer reported separately	Consolidated the Eversource data into one row	Changed in Version 6.0, 2/28/25
Emissions Factors	B52	Instructions and link were for 2017 report	Updated instructions and link for 2022 report	Changed in Version 6.0, 2/28/25
Emissions Factors	B62-F63	Instructions and links were for 2017 report	Updated instructions and links for 2022 report	Changed in Version 6.0, 2/28/25
Emissions Factors	G67-H68 in V4.2	Previous version included two values that were not used in any calculations	Removed unused values	Changed in Version 6.0, 2/28/25
Stationary Energy – Buildings	B7	Referenced TCR, which no longer exists	Removed reference to TCR, emissions factors are from EPA	Changed in Version 6.0, 2/28/25

Stationary Energy – Buildings	B41-F54, B56-H76, B78-G105	Values and links were from 2017	Updated values and links for 2022	Changed in Version 6.0, 2/28/25
Stationary Energy – Buildings	E109-F207	VLOOKUP formula	Changed to Index(Match) formula to avoid errors	Changed in Version 6.0, 2/28/25
Stationary Energy – Buildings	F213	Outdated link	Updated link to match link in Adjust Inventory Year sheet	Changed in Version 6.0, 2/28/25
Stationary Energy – Buildings	D223-225; B-F226	Referenced a study about natural gas loss rates from 2014	Updated to reference a study from 2021	Changed in Version 6.0, 2/28/25
Stationary Energy – Buildings	D230, B-F233	Referenced a PlugInsights source for % of electricity consumption allocated to residential subsector; link no longer works	Updated to NREL source from 2021	Changed in Version 6.0, 2/28/25
Stationary Energy – Off Road	B7	Referenced 2014 version of MOVES	Updated to reference updated version of MOVES (v4.0)	Changed in Version 6.0, 2/28/25
Stationary Energy – E. Indus.	B15-F73	Values, source, and link were for 2017	Updated values, source, and link to 2022	Changed in Version 6.0, 2/28/25
Transportation - Summary	G14	On-road Electricity T&D Losses only included passenger vehicles	Updated to include Electricity T&D losses from all electric on-road transportation	Changed in Version 6.0, 2/28/25
Transportation – On Road	B7	Summary of methodology referred to 2017 data	Updated summary of methodology to refer to 2022 data	Changed in Version 6.0, 2/28/25
Transportation – On Road	B9-H16	Totals included MBTA and RTA on-road vehicles, which would double count these vehicles as they are included in the MA Vehicle Census data	Removed MBTA/RTA data from sums, on-road totals only reference the MA Vehicle Census data	Changed in Version 6.0, 2/28/25
Transportation – On Road	B24	Previous version did not have a note about which fuel types were included in the Gasoline category	Added a note about which vehicle fuel types are included in the gasoline category	Changed in Version 6.0, 2/28/25
Transportation – On Road	B26-H39	Previous version of MA Vehicle Census data didn't include municipal and state vehicles, so they were not included in the sum	2022 MA Vehicle Census data includes municipal and state vehicles; added municipal and state vehicles to the sum of on-road vehicle data	Changed in Version 6.0, 2/28/25

Transportation – On Road	B29-38, B43-52, B57-66, B71-80, B85-94	Included the following Vehicle Fuel Types: Gasoline, Diesel, FlexFuel, Gasoline (Hybrid), Electric	Updated to include all Vehicle Fuel Types in the MA Vehicle Census: Gasoline, Diesel, FlexFuel, Hybrid EV, Plug-in Hybrid EV, CNG, Propane, Hydrogen Fuel Cell, Electric, Other	Changed in Version 6.0, 2/28/25
Transportation – On Road	B39, B53, B67, B81, B95	N/A	Added note to explain which fuel types are included as gallon of gasoline equivalents	Changed in Version 6.0, 2/28/25
Transportation – On Road	B43-J52, B57-J66	Calculations had additional steps to estimate annual VMT and fuel consumption because the previous version of the MA Vehicle Census data was incomplete	Calculations use the annual VMT and fuel consumption data from the MA Vehicle Census directly because the data is complete	Changed in Version 6.0, 2/28/25
Transportation – On Road	B69-J95	Did not include Municipal and State vehicles because they were not included in previous version of MA Vehicle Census data	Added tables for municipal and state vehicles with same formats and equations as passenger and commercial vehicles	Changed in Version 6.0, 2/28/25
Transportation – On Road	C112-114, F112, F114, L114, P112-113	Referenced values on Inputs sheet that were moved to the Adjust Inventory Year sheet	Updated to reference values on Adjust Inventory Year sheet	Changed in Version 6.0, 2/28/25
Transportation – On Road	B82-P90 in V4.2	Including inputs for RTA and Municipally-operated public transit data double-counts these vehicles as they are included in the MA Vehicle Census data	Removed RTA and Municipally-operated public transit calculations	Changed in Version 6.0, 2/28/25
Transportation – On Road	B-F126	Note and link were outdated	Updated note and link to EIA data	Changed in Version 6.0, 2/28/25
Transportation – Rail	B7	Summary of methodology referred to 2017 data	Updated summary of methodology to refer to 2022 data	Changed in Version 6.0, 2/28/25
Transportation – Rail	C19-24, F24, K19-23	Referenced values on Inputs sheet that were moved to the Adjust Inventory Year sheet	Updated to reference values on Adjust Inventory Year sheet	Changed in Version 6.0, 2/28/25
Transportation – Rail	B34	Incorrectly labeled “All On-road Transit”	Updated to “All Rail Transit”	Changed in Version 6.0, 2/28/25
Transportation – Rail	B-F35	Note and link were outdated	Updated note and link to EIA data	Changed in Version 6.0, 2/28/25

Waste – Solid Waste Disposal	E12, B15-F30	Assumed fraction of methane recovered at landfill was 0; not an accurate assumption because the vast majority of landfills in MA employ a methane gas collection system with recovery efficiencies as high as 95%	Added a table with gas collection system efficiency data for 12 landfills in MA with data from EPA's FLIGHT tool. If the user knows and selects which landfill the community sends waste to, the gas collection system efficiency value for that landfill is used in calculations. If the user does not know which landfill the community sends waste to, the average gas collection efficiency of the 12 landfills (86%) is used as a default value.	Changed in Version 6.0, 2/28/25
Waste – Solid Waste Disposal	C-D55	If user does not know mass of privately collected waste, the value is zero	<p>If user knows the mass of privately hauled waste, then those values are used.</p> <p>If the user does not know the mass of privately hauled waste, assume the per capita waste is the same as municipal waste to calculate the total waste for the town (using the % of households served by municipal waste collection) and subtract the municipal waste collected.</p> <p>If the user does not know neither the municipal nor private tons of waste, a default value is calculated equal to the state's average per capita tons of waste times the community's population.</p>	Changed in Version 6.0, 2/28/25
Waste – Solid Waste Disposal	B-E72	Note and link referenced 2017 data	Updated note and link to 2022 data	Changed in Version 6.0, 2/28/25
Waste – Solid Waste Disposal	B98-D174	Waste composition values were from 2016 Fall/Winter data	Updated values and description to Fall/Winter 2022 values	Changed in Version 6.0, 2/28/25
Waste – Incineration	F39-44	Referenced the value for mass of waste incinerated from table 5 rather than table 4	Updated to reference the value for mass of waste incinerated from table 4	Changed in Version 6.0, 2/28/25
Waste – Wastewater	All	The methodology did not align with MassDEP's methodology, was based on a non-public resource, and incorrectly	Updated methodology to directly use MassDEP's methodology and inputs from Appendix C of the	Changed in Version 6.0, 2/28/25

		estimated waste water emissions	Greenhouse Gas Baseline & Inventory report	
STATIONARY ENERGY - BUILDINGS	Table 1a	Missing rows to calculate electricity emissions from municipal utility and CCA for municipal electricity consumption	Added rows 28, 29, and 30 with appropriate formulas connecting to municipal utility and CCA electricity emissions factors	Corrected in Version 4.2. 4/7/2021
ALL EMISSIONS - SUMMARY	F19	Need to be adjusted to pull appropriate municipal emissions total based on update above	Updated to connect to cell I30 in "Stationary Energy – Buildings" sheet for electricity CO2e	Corrected in Version 4.2, 4/7/2021
INPUTS	B176	It could be helpful to indicate that "oil_p" is the heading for the column with % of households with oil.	Added meta data.	Updated in Version 4.1, 8/10/2020
INPUTS	C201, D201	Towns with no construction data are triggering "#DIV/0!" throughout the subsequent sheets with stationary energy summations.	Applied the IFERROR formula to cells L12:L15 in the "Stationary Energy – Off Road" sheet to correct the division error at the source.	Corrected in Version 4.1, 8/10/2020
INPUTS	B218:B222, B227:B231	Add in the meta data for the MAVC related data sets.	Added meta data for MAVC datasets.	Updated in Version 4.1, 8/10/2020
EMISSIONS FACTORS	E37, E42, F56, and E67	Typos – title should read N2O electricity emissions factor, not CH4.	Corrected typos.	Corrected in Version 4.1, 8/10/2020
INPUTS	Rows 217-231	When there is little or no MAVC data for particular vehicle types in a community, this is resulting in "#DIV/0!" errors in the subsequent sheets with transportation summations	Added IFERROR formula to cells E39:E43, L39:L42, E50:E54, and L50:L53 in the "Transportation – On Road" sheet	Corrected in Version 4.1, 8/10/2020
STATIONARY ENERGY - SUMMARY	G17, G25, K17, K25	Electricity consumption and T&D losses were missing formulas to override potential division errors	Added SUMIF formula to override potential "#DIV/0!" errors	Corrected in Version 4.1, 8/10/2020
TRANSPORTATION – ON ROAD	L39, L40	Municipal fuel consumption is being added to On-Road Passenger vehicles, should be added to on-road commercial vehicles.	Moved inputs to cells L50 and L51 in the commercial vehicle table.	Corrected in Version 4.1, 8/10/2020
TRANSPORTATION – ON ROAD	C12, F12, G12, H12, C15, F15, G15, H15	Municipal fuel consumption is being double counted in the calculations.	Removed the addition of municipal vehicle emissions in summary Table 1 (cells C60,	Corrected in Version 4.1, 8/10/2020



			D60, E60, F60, C59, D59, E59, F59)	
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