Dear Parks and Environment Committee:

The Toronto Youth Environmental Council is a registered non-profit organization run entirely by high school students. They have worked together with youth organization iMatter on the iMatter Now campaign to create a climate report card grading Toronto on climate action in the areas of renewable energy, waste program, carbon removal, youth involvement, and the zero emissions plan or lack thereof. We will be presenting the report card along with suggestions for actions that the City of Toronto should take to be more effective in the protection of the environment and mitigate climate change. A copy of the report card is attached. More information on the campaign can be found at imatteryouth.org and torontoyec.com. If you have any questions you can contact the Toronto Youth Environmental Council at info@torontoyec.com

Sincerely,

Lilian Barraclough
Advisor, Toronto Youth Environmental Council

iMATTER

WE, THE YOUTH OF
Toronto

endorse this Climate Report Card & call for immediate action to protect our future from the Climate Crisis.

iMATTER

Toronto CLIMATE REPORT CARD

ZERO EMISSIONS PLAN   C-

Rapidly reducing greenhouse gas emissions is the most important thing we can do to address the climate crisis.

RENEWABLE ENERGY   D-

Getting to completely renewable, carbon-free energy as quickly as possible is key to any greenhouse gas reduction plan.

WASTE   A-

Reducing the amount of waste we generate and recycling more of it reduces the amount of greenhouse gases from landfills. Waste reduction is also an indirect indicator that we're reducing the amount of completely new stuff we're buying. Production of new stuff can generate a lot of greenhouse gases.

CARBON REMOVAL   B

Removing greenhouse gases from the atmosphere will reduce the impacts of climate change.

YOUTH INVOLVEMEMT   None

The youngest generation will be most impacted by the climate crisis and should be involved when policies are being put in place. A city gets a half grade increase if they have youth involved in advising on or developing climate related policies

OVERALL GRADE   C

RATIONALE FOR GRADES
(see the Detailed Report for specifics)

ZERO EMISSIONS PLAN   50% Weighting

Toronto has done a Climate Action plan and is aiming for an 80% reduction in emissions by 2050.

RENEWABLE ENERGY   20% Weighting

Toronto knows the percent of its electricity that comes from renewable sources, which is great as many cities do not. Toronto received 29% of its energy from renewable sources in 2013. This is below the Canadian average. Toronto's renewable energy percentage changed by 0 percentage point(s) from 2012 to 2013. This did not change the grade.

WASTE   20% Weighting

Waste created per person in Toronto is decreasing which results in a better grade. The portion of Toronto's waste that is being recycled or composted is increasing which results in a better grade.
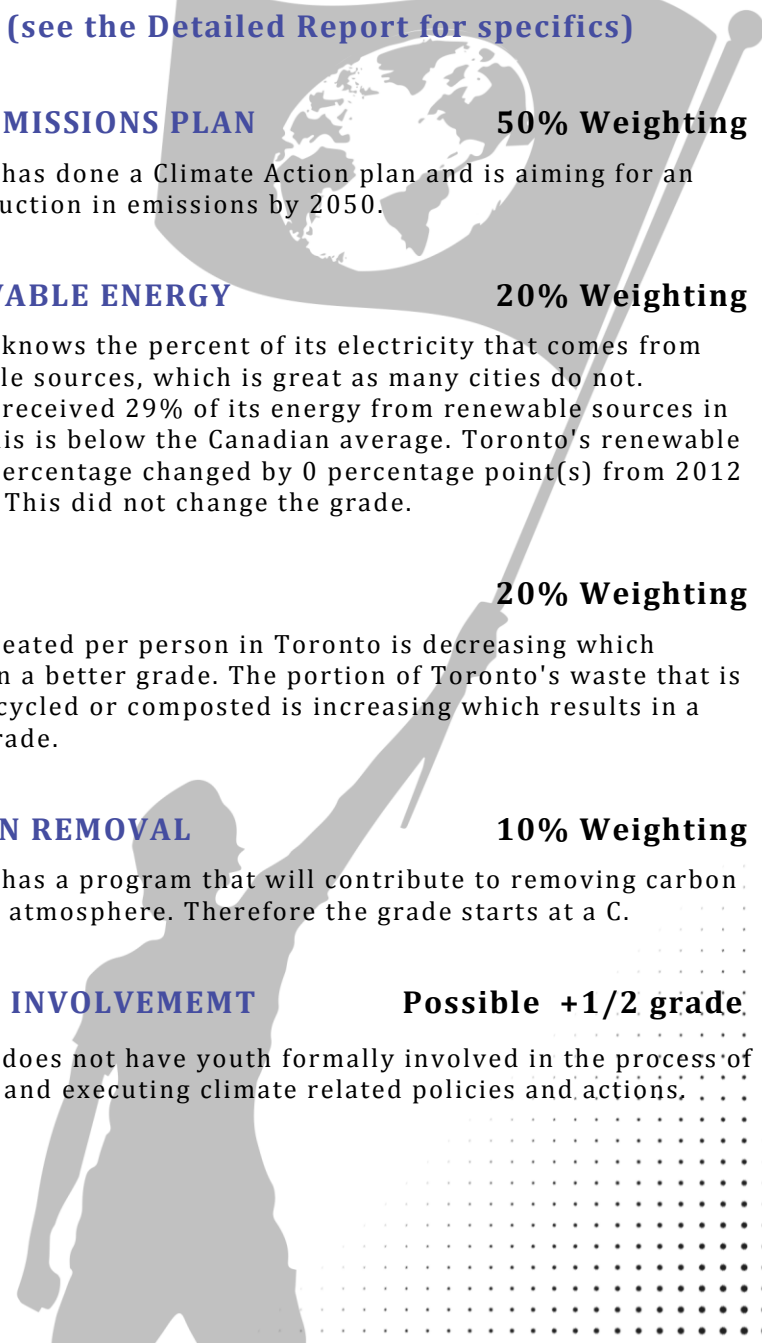
CARBON REMOVAL   10% Weighting

Toronto has a program that will contribute to removing carbon from the atmosphere. Therefore the grade starts at a C.

YOUTH INVOLVEMEMT   Possible +1/2 grade

Toronto does not have youth formally involved in the process of creating and executing climate related policies and actions.

iMATTER Toronto
Detail Report

For Toronto Climate Report Card

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1 Report Card Background

Working from [the largest contributors to greenhouse gas emissions](#), iMatter developed a Report Card based on the areas a city can impact, and data that is generally publicly available. An A-F grading system evaluates a city's action (or inaction) to reduce greenhouse gas emissions to levels needed to end the climate crisis.

Actions taken to improve Report Card grades should focus a city on the right things and at the right levels to make meaningful progress on the climate crisis.
And because youth will have to deal with the effects of the climate crisis more than older generations, **youth opinion matters.** Youth should be involved when policies are being put in place, both so they have a voice, and so they can participate in local solutions. Youth can be partners with local government in creating the will for community change.

1.1 Basis for Report Card

Report Card grades are based on real data, the presence of programs with appropriate goals, and concrete actions. To determine appropriate goals, the science from pre-eminent climate scientist, Dr. Jim Hansen, was used.

Dr. Hansen, formerly of NASA, led a team that wrote a paper at the end of 2013, which gives a prescription for avoiding the worst consequences of climate change. His team makes the point that we need to keep temperatures roughly within the range of temperatures that led to the rise of human civilization. To do this required a reduction in global emissions of 6% per year starting immediately (meaning 2014/2015) and that we simultaneously take carbon out of the atmosphere with things like reforestation and better soil management. This recipe guides the Report Card grading system.

You can find [Dr. Hansen's paper here,](#) and a non-technical summary of it [here](#).

iMATTER   Toronto
Detail Report

1.2 Report Card Sections

There are five sections of the report card that are combined into an overall grade. The Report Card itself describes why each of these sections is important. At a high level, for each section, here is what is rewarded:

- Zero Emissions Climate Action Plan: When the city's Climate Action Plan gets to net zero human emissions (by 2040 is an A, 2050 a C).
- Renewable Energy: When the percent of renewables used to generate a city's electricity is more than the national average, and the percentage is rising.
- Waste: When the amount of waste per person is decreasing and the percent of that waste that is recycled or composted is increasing.
- Carbon Removal: When there is some kind of a program that will result in more carbon being removed from the atmosphere.
- Youth Involvement: A bonus area that rewards a city 1/2 grade for having youth involved in advising on or setting climate change related policies and plans.

The sections are combined into an overall grade. Weightings are based on the U.S averages for the impact of each area on a typical community's greenhouse gas footprint.

Sample grades with weightings

	Grade	Weighting
Zero Emissions Climate Action Plan	C	50%
Renewable Energy %	D-	20%
Waste (Generated/Recycled/Composted)	C	20%
Carbon Removal	D	10%
Youth Involvement	+½ grade	
Overall grade	**C**	

Note: The "Carbon Removal" grade is slightly underweighted, but this is because much of the impact will likely come from areas that may be outside typical city boundaries (e.g., national forests, croplands, etc.)

Detail on grade calculations is shown in each grade description section. You can also find a generic description here.

Detail Report

1.3 Advisors

In addition to using the leading climate science, some of the most knowledgeable people and organizations on community climate change initiatives have been consulted to develop the Report Card. The following is our list of Advisors.

- David Allaway, Policy and Program Analyst, Oregon Department of Environmental Quality
- Brian Holland, Director of Climate Programs, ICLEI – Local Governments for Sustainability USA
- Paul Kroening, Supervising Environmentalist, Waste Reduction and Recycling Unit, Hennepin County, MN
- Hunter Lovins, President, Natural Capitalism Solutions
- Matt McRae, Climate and Energy Analyst, City of Eugene, Oregon
- Eli Yewdall, Senior Program Officer, ICLEI-Local Governments for Sustainability USA
- Martha Campbell, Sr. Associate - Communities, Rocky Mountain Institute
- Kaitlyn Bunker, Ph.D., Associate, Rocky Mountain Institute
- Ryan Griffin, Managing Consultant, See the Forest, LLC

The Report Card has also already been endorsed by the following organizations to encourage its use by U.S. communities.

- Project Drawdown
- Natural Capitalism Solutions
- Moms Clean Air Force
- Green Schools

2 Overall Grade for Toronto = C

3 Individual Grade Descriptions

3.1 Zero Emissions Plan: C-

Toronto has done a Climate Action plan and is aiming for an 80% reduction in emissions by 2050.It's good that Toronto has an 80% emissions reduction goal. But with this timeframe the base grade is a D, because the per year

emissions reduction is less than 6%. The grade could be raised if Toronto is more aggressive about when it aims to reach an 80% reduction or if the goal is changed to Net Zero emissions.

Climate Action Plan information entered:
> *Link to Greenhouse Gas Inventory (if entered):*
> http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PE9.4
> *Link to Climate Action Plan (if entered):*
> http://www1.toronto.ca/wpslportal/contentonly?vgnextoid=4e4c295f69db1410VgnVCMf89RCRD&vgnextchannel=44aOe211597a1410VgnVCM10000071d60f89RCRD
> *Link to Annual Report (if entered):*

Toronto's Climate Action Plan is trying to take into account goodsconsumed within Toronto, but produced outside of Toronto. This is hard to do, so the base grade is increased by 1/3 level.Toronto's grade could be increased by 1/3 level if the Climate Action Plan is turned into an ordinance (law).

3.2 Renewable Energy: D-

Toronto received 29% of its energy from renewable sources in 2013 and 29% in 2012. In 2013 this differs from the national average by -33.8 percentage point(s). The grade is as follows:

- D-, 5% or more below the national average (includes 5% below)
- D, 5%-2% below the national average (includes 2% below)
- C, 2% below to 3% over the national average (includes 3% above)
- B, 3% to 7% above the national average
- A, 7% or more above the national average (includes 7% above)

Toronto's renewable energy percentage changed by 0 percentage point(s) from 2012 to 2013.This did not change the grade. This is the formula used:

> If a city's percentage increases by at least 0.5% year over year, the grade is increased 1/3 level, if it decreases by 0.5% or more year over year, the grade is decreased 1/3 level. If a city's percentage increases more than 2% year over year, it moves up a whole grade, unless it is already at A, in which case it moves up to A+.

Renewable energy data came from, if entered:
http://www1.toronto.ca/City%20of%20Toronto/Environment%20and%20Ean
*ergy/Acton%20Plants,%20Policies%20&%20research/PDFs/City_of_Toronto_*
EPR_2015

National Canadian renewable percentages for reference (note 2014 is an
estimate):

2014: 64.3	*2012: 62.8*
2013: 62.8	*2011: 62.5*

3.3 Waste: A-

There are two main factors to the Waste grade:

1. Waste Created per person. Waste created or generated equals the waste disposed (in a landfill or burned) plus the waste recovered (recycled or composted). Higher grades are received the more this is reduced.
2. Recovery rate: This is the percent of the total waste created that is either recycled or composted. It is calculated by dividing the total weight of materials recycled and composted by the total amount of waste generated in a year. Higher grades are received the more this is increased.

Here is the data calculated for Toronto:

- Waste Created per person (tons) in 2014: 0.31
- Waste Created per person (tons) in 2013: 0.32
- Change in Waste Created per person from 2013 to 2014: -3.13%
- Recovery rate in 2014: 52.69%
- Recovery rate in 2013: 52.68%
- Recovery rate change from 2013 to 2014: 0.01 percentage points

iMATTER Toronto
Detail Report

Waste grades are calculated using the following table:

	Recovery Rate = Total Recycling & Composting / Total Waste Generated Grading is based on the percent increase or decrease in the rate (e.g. going from 10% recovery rate to 12% is a 2% increase.) But when 50% overall recovery rate has been reached, then the lowest set of grades a community can receive is column 4 (and 70% is column 5.)				
Waste Created per person Grading is based on the annual percent increase or decrease in the weight of waste per person	1% or more decrease	0-1% decrease	0-1% increase	1-3% increase or Greater than 50% RR	More than 3% increase or Greater than 70% RR
2% or more increase	F	D-	D	C-	C
0-2% increase (includes 0)	D-	D	C-	C	B-
0-2.5% decrease	D	C-	C	B-	B
2.5-5% decrease	C-	C	B-	B	A-
5% or more decrease	C	B-	B	A-	A
When a city reaches 70% recovery rate, if they increase their recovery rate by more than 1.5% in a year, then their score is increased 1/3 level (i.e. A- to A, A to A+)					

Toronto has a curbside recycling program, which is good. If it did not, then grades would be reduced by at least 1/3 level. Toronto has a curbside organics (composting) program so the grade from the table is increased by 1/3 level.

Waste related data entered:
Total waste (tons) in 2014: 804369
Total waste (tons) in 2013: 833761
Population in 2014: 2600000
Population in 2013: 2600000
Recycling tons in 2014: 423817

Detail Report

Recycling tons in 2013: 439221 *Composting
tons in 2014:*
Composting tons in 2013:
Where waste data came from (if entered):

3.4 Carbon Removal: B

Toronto has a program that will contribute to removing carbon from the atmosphere. Therefore the grade starts at a C. Toronto's grade could be increased by 1/3 level if carbon storage capacity was included in the program's metrics. Toronto's grade has been increased by one whole level because program metrics were met in the most recent year.

Link to Program used in this section (if provided):
http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=9fe3874e1fc0141
0vgnVCM

3.5 Youth Involvement: None

Torontodoes not have youth formally involved in advising on, or helping to develop climate change related policies or plans. If youth are involved, then Toronto's grade would be increased by ½ level.

Link to Youth Climate Group (or Climate Group with youth participation) if provided:

Background Information and Resources

4 Zero Emissions Climate Action Plan

Toronto Grade = C-
Rapidly reducing emissions is the most important thing we can do to address the climate crisis, so a Climate Action Plan that gets to net zero emissions is the most heavily weighted grade in the Report Card.

Zero emissions, or at least **net zero emissions** is the goal. This means completely cutting a city's carbon pollution and greenhouse gas emissions. Studies have shown ([here's one](#)) that it is doable. By saying "net zero," it leaves a bit of practical wiggle room for some continued but drastically reduced emissions, as long as they're balanced out by natural factors that remove carbon pollution from the atmosphere (the Carbon Removal part of the Report Card), or possibly by purchasing a small amount of carbon offsets.

4.1 Greenhouse Gas Inventory

Toronto has done a Greenhouse Gas Inventory, great!

4.2 Climate Action Plan

Toronto has aClimate Action Plan, fantastic!

Here are examples of Climate Action Plans
- [Vancouver, BC](#) – Greenest City Action Plan
- [Eugene, OR](#) - note that Appendix 7 of the plan is a Greenhouse Gas Inventory.
- Minneapolis, MN - [Greenhouse gas inventory](#)
- Minneapolis, MN - [Climate Action Plan](#)
- Burlington, VT – [Climate Action Plan](#)
- [The EPA website](#) has links to many greenhouse gas inventories and climate action plans.
- In [the Carbonn database](#), affiliated with ICLEI, many cities report the targets for their Climate Action Plans, and sometimes their progress.
- The New York State Department of Environmental Conservation has an [excellent set of tools and case studies](#) on developing a climate action plan.

[16 communities were recently recognized](#) by the US White House as Climate Action Champions for leadership on climate change. One of the 16, Montpelier, VT, has launched Net Zero Montpelier in an effort to become the first carbon neutral capital city in the US by 2030.

Measuring-Up-2015, a report by ICLEI and the World Wildlife Federation, explores Climate Action plans in 4 of the 34 US cities who have recently pledged to reduce emissions by 80% by 2050. Here you can find case studies for Atlanta, Cincinnati, Minneapolis and Portland.

4.2.1 Goods produced outside Toronto

It's tough to do, but it's great that Toronto is trying to take into account the greenhouse gases produced by goods made outside the city and consumed by a city's residents and businesses.

4.3 Annual Report on Climate Action Plan

While creating an annual report is no small task, the benefits can be monumental. The first of these benefits is that the annual report is a clear and consistent internal accountability mechanism. It is not about only highlighting accomplishments, but also illustrating where things didn't go as planned or opportunities still exist to improve. This level of transparency may not come easy, but many cities have been successful at creating annual reports and using them as a vehicle to engage their populations environmentally.

For example, the Annual Report on the San Ramon, CA, Climate Action Plan, covered everything from overall emissions reductions to new development plans, to land use and transportation strategies.

4.4 Climate Recovery Ordinance

A Climate Recovery Ordinance is basically a Climate Action Plan that has been made into a law. Eugene, Oregon is an example of a place where this has happened.

Here is the press release from iMatter partner Our Children's Trust on the ordinance.

Here is the ordinance itself.

Detail Report

5 Renewable Energy

Toronto Grade = D-

While typically included within a city's Climate Action Plan, getting to 100% renewable energy rapidly is extremely important in any city's plan to reduce greenhouse gas emissions. This is because, over time, things like heating and transportation probably need to be transitioned to using electricity that comes from carbon-free sources. That's why it's included as a separate grading item.

5.1 Renewable Energy Definition

Renewable energy is generally defined as energy that comes from resources that are naturally replenished on a human timescale* such as sunlight, wind, rain, tides, waves and geothermal heat. Another way of thinking about it is that renewable resources are not depleted though their use. For the Report Card, we use the US Energy Information Administration's (US EIA) classification system for defining what is renewable energy. They include the following in their renewable energy figures:
  * Hydroelectric Power
  * Geothermal
  * Solar
  * Wind
  * Biomass (includes biofuels, wood, waste)

The source of Canadian national data comes from the International Energy Agency (IEA), supplemented by data from CIEEDAC (Canadian Industrial Energy End-use Data and Analysis Centre). Basically, the data from the IEA is used to generation a Canadian renewable energy percentage for 2011 – 2013. For 2014, the change in renewable energy capacity for electricity in all of Canada relative to overall energy capacity (as provided by CIEEDAC), is used to extrapolate the IEA data into a 2014 value.

* - Note that on very long timescales (millions and millions of years, fossil fuels are technically replenishable. But not in any way that is useful to humanity.

5.2 Toronto Compared to National Renewable Energy Average

According to the data input, Toronto's renewable energy is well below the national average (5% or more below it.)

This interactive energy map can help steer communities toward the best renewable energy investments for their location. Knowing what technologies will provide the best return is an important piece of investing in our clean energy future.

Greensburg, KS has recently achieved 100% renewable energy as part of their comprehensive sustainability plan and after rebuilding from an EF-5 Tornado which leveled 90% of the city in May 2007. The success in Greensburg, a small farming town in a conservative state demonstrates that renewable generation can come to any community who has the will or the need to make a change.

6 Waste

Toronto Grade = A-

Reducing the amount of waste we generate and recycling more of it reduces the amount of greenhouse gases emitted from landfills.

Waste reduction is also an indirect indicator that we're reducing the amount of completely new stuff we're buying. Buying lots of new stuff can significantly increase the greenhouse gases generated in the production of that stuff. This is often referred to as "Materials" or "Materials and Waste."

Reduction of waste has three main impacts on greenhouse gases.
1. Reduced amounts of waste in a landfill, especially food waste, reduce the amount of greenhouse gases (methane) given off by the landfill (according to the EPA, waste in landfills generates 2% of greenhouse gas emissions in the U.S.).
2. The production and transport food and products (materials) purchased is estimated to cause 42% of U.S. greenhouse gas emissions (see "Background note on greenhouse gas emissions" below). Less overall waste created likely would mean we are buying less stuff that causes greenhouse gases when it is produced and delivered to the market.
3. More recycling typically reduces greenhouse gases, because it generally requires a lot less greenhouse gases to recycle materials than to create new materials. The EPA has estimated that moving to 100% recycling would result in a decrease in U.S. national greenhouse gas emissions of 6%.

More and more cities and towns are adopting aggressive zero waste initiatives.

- Here are 10 major US cities with zero waste goals
- Three other lesser known cities with zero waste goals
- Info about SF, NY, and some international cities with zero waste goals
- Small cities solve big problems - a good USA Today article from last year.

7 Carbon Removal

Toronto Grade = B

Removing greenhouse gases from the atmosphere will reduce the impacts of climate change. Carbon dioxide, the most prevalent greenhouse gas, can be removed from the atmosphere and stored in trees, forests, plants, and soil, mostly through photosynthesis - the process by which carbon is stored in plants and oxygen is released into the atmosphere.

7.1 Trees

Urban forestry is a popular method of carbon sequestration within city limits. Maintaining a healthy tree canopy has myriad benefits in addition to reducing atmospheric concentrations of CO2 and positively impacting climate change.

There are some terrific free tools available to cities.

- iTree, peer-reviewed software created by the USDA Forest Service, provides urban forestry analysis and benefits assessment tools through a combination of tree inventory and use of satellite analysis. iTree provides a way to regularly count trees and concretely assess the benefits they provide.
- EarthDefine is building the largest collection of high-resolution land cover information for the contiguous United States. This dataset currently covers over 233 million acres and is continuously expanding.

In **St. Louis Park, MN**, using the above two tools, the city forestry department uses a combination of a physical street tree inventory, biomass from LIDAR satellite images, and a Geographic Information System (GIS) Asset Management database for its trees.

While the number of trees important, it is their overall biomass that largely determines their carbon removal capabilities. Policies could be put in place that set targets for biomass with language on carbon removal. They could also include language to preserve trees in parks and redevelopment zones, and implement a more robust replanting policy.

Atlanta, like many cities, has a formal policy requiring a permit for tree removal on private property, and ensuring that replanting happens.

Detail Report

Burlington, VT has a policy for the city to plant 588 trees per year. See pages 18 and 23 of the Burlington Climate Action Plan for more information, including a great description on the many benefits of effectively managing trees.

7.2 Soil

Here is a great article by Judith Schwartz, author or the book *Cows Save the Planet and Other Improbable Ways of Restoring Soil to Heal the Earth* that describes how better managing soil can play a significant role in addressing the climate crisis.

8 Other great resources for cities

Note that all materials linked to are either publicly available and/or have been provided with the consent of the creating organization.

- Rocky Mountain Institute (RMI) has an excellent new Community Resource Guide that provides a blueprint to launch a community energy transformation. Additional resources from RMI include:
  - o A strategy presentation supporting the climate action plan of Fort Collins, CO. o A spreadsheet of specific tactics for Fort Collins o This page has links to the full set of community resources available from Rocky Mountain Institute.
- Redstone Strategy Group is a leading advisor to private foundations and non-profits around the world, and created this excellent report for Menlo Spark, an organization looking to lead Menlo Park, CA, to climate neutrality by 2025.
- Natural Capitalism Solutions created a Climate Protection Manual for Cities that takes cities through the steps needed to conduct a greenhouse gas inventory, create a climate action plan, and measure results.