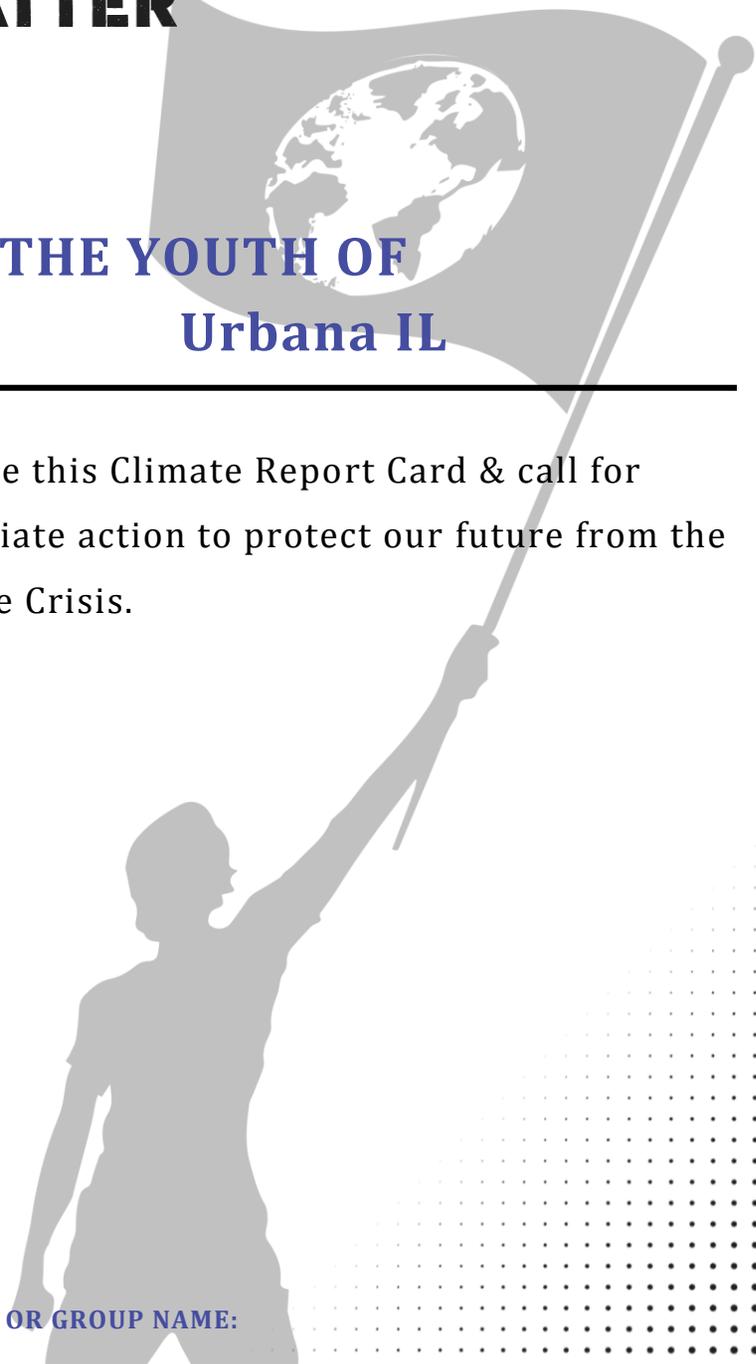

iMATTER

**WE, THE YOUTH OF
Urbana IL**

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

SCHOOL OR GROUP NAME:

A large, light gray silhouette of a person standing and holding a flag high with their right arm. The flag features a globe of the Earth. The background of the page is decorated with a pattern of small dots that fade out towards the left and bottom edges.

Urbana

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 **A**

Electricity generation caused 32% of US greenhouse gas emissions in 2012 (source: EPA), the largest of any source.

WASTE **C-**

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 **C+**

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

YOUTH INVOLVEMENT **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**

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

RENEWABLE ENERGY **20% Weighting**

Urbana knows the percent of its electricity that comes from renewable sources, which is great as many cities do not. Urbana received 31% of its energy from renewable sources in 2015. This is above the national average. Urbana's renewable energy percentage changed by 0 percentage point(s) from 2014 to 2015. This did not change the grade.

WASTE **20% Weighting**

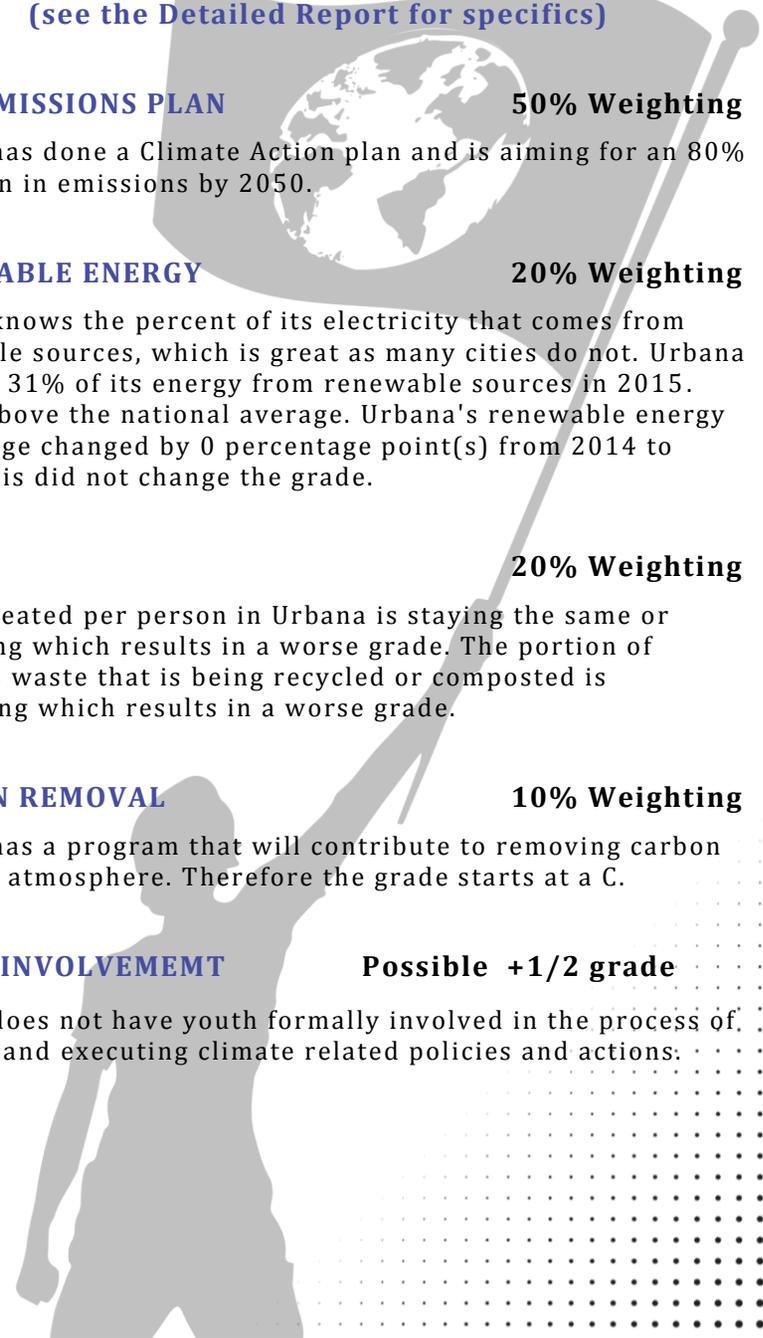
Waste created per person in Urbana is staying the same or increasing which results in a worse grade. The portion of Urbana's waste that is being recycled or composted is decreasing which results in a worse grade.

CARBON REMOVAL **10% Weighting**

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

YOUTH INVOLVEMENT **Possible +1/2 grade**

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



iMATTER

Urbana IL Detail Report

1 Report Card Background

Working from [the largest contributors to greenhouse gas emissions](#) in the United States, 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](#).

1.2 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

Urbana Detail Report

- 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 Urbana = C+

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.

Grade weightings

	Weighting
Zero Emissions Climate Action Plan	50%
Renewable Energy %	20%
Waste (Generated/Recycled/Composted)	20%
Carbon Removal	10%
Youth Involvement	Possible plus 1/2 grade

Urbana Detail Report

Note: The "Carbon Removal" grade is slightly underweighted compared to an overall U.S impact, but this is because much of the U.S. 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](#).

3 Zero Emissions Plan: C-

3.1 Base Grade Rationale for Urbana

To determine the Zero Emissions Plan grade, a base grade is determined. Then modifiers are applied. This section gives the rationale for Urbana's base grade for the Zero Emissions Plan.

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.

A Climate Action Plan typically starts with understanding how much greenhouse gas emissions are created by a community. Figuring out how much greenhouse gases are created is called a **Greenhouse Gas Inventory** (you may also see it referred to as a greenhouse gas baseline). As it's the first step in creating a Climate Action Plan, the Report Card gives some credit for cities that have done a greenhouse gas inventory, even if they have not done a Climate Action Plan.

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

It's good that Urbana 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 Urbana is more aggressive about when it aims to reach an 80% reduction or if the goal is changed to Net Zero emissions.

Urbana Detail Report

3.2 Base Grade Algorithm

This section describes the underlying algorithm for how the base grade is calculated for a city.

1. F, Emissions are unknown, no inventory has been conducted
2. D-, Emissions are known (or there is a Greenhouse Gas Inventory in process), no Climate Action Plan to reduce emissions exists
3. D-, Emissions are unknown and no inventory has been conducted, but there is a Climate Action Plan in place
4. D, Emissions are known and an Action Plan to reduce emissions exists
5. Grades above D are based on when the plan has the community getting to either net zero greenhouse gas emissions or an 80% reduction in greenhouse gas emissions:
 - Net Zero emissions grading scale
 - 2025: A+ (before 2028)
 - 2030: A+, (after 2027 and before 2033)
 - 2035: A+, (after 2032 and before 2038)
 - 2040: A, (after 2037 and before 2043)
 - 2045: B, (after 2042 and before 2048)
 - 2050: C (after 2047 and before 2053)
 - 2055: C- (after 2052 and before 2058)
 - 80% reduction grading scale
 - 2025: A+ (before 2028)
 - 2030: A, (after 2027 and before 2033)
 - 2035: B, (after 2032 and before 2038)
 - 2040: C, (after 2037 and before 2043)
 - 2045: D+, (after 2042 and before 2048)
 - 2050: D (after 2047 and before 2053)
 - 2055: D (after 2052 and before 2058)
6. Relation to Dr. Hansen's paper (see above)
 - As 6% is the average of what is needed, it is viewed as an average grade and set as a C.
 - Net Zero
 - Getting to net zero by 2050 is about a 6% per year reduction and is a C grade.
 - Net zero by 2045 is close to 8% per year and is a B.
 - Net zero by 2040 is about 9% per year and is an A. Sooner than 2040 is an A+.
 - The concept of Net Zero allows for some small level of greenhouse gas emissions that are offset by other activities that remove carbon from the atmosphere. Therefore, for grade calculation purposes, Net Zero is assumed to be a 90% reduction in greenhouse gas emissions, with the remaining 10% offset by some kind carbon removal program.
 - 80% Reduction
 - By 2045 is about a 5 1/2% per year reduction and is a D+.
 - By 2040 is about a 6% per year reduction and is a C grade.
 - By 2035 is about 8% per year and is a B.

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- By 2030 is about 10-11% per year and is an A. Sooner than 2030 is an A+.
- It is slightly harder to get a higher grade with an 80% reduction than with a goal of Net Zero.
- Given that the U.S. is the largest cumulative emitter of greenhouse gases (about 25% of the total), and as the US is the largest economy in the world, the grading system encourages city-level emissions reduction leadership, to get higher grades.

3.3 Grade modifiers

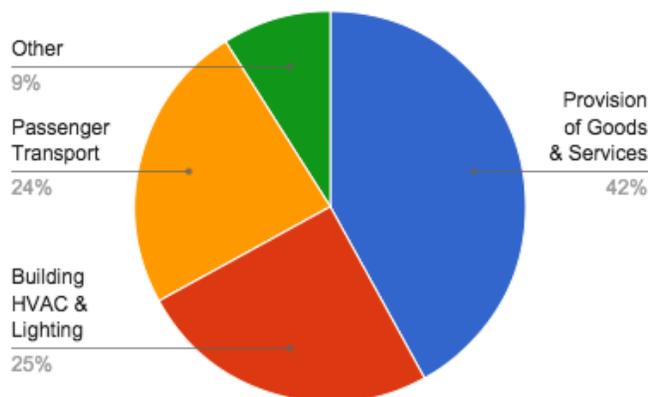
The following are all items that can modify the base grade.

3.3.1 Goods produced outside Urbana

Urbana's grade could be increased by 1/3 level if the Climate Action Plan would try to take into account goods produced outside of Urbana. Most inventories of greenhouse gas emissions count only emissions generated from sources inside a community. But by purchasing goods and services, a community's citizens contribute to emissions around the world, in the places where those goods or services are produced.

Calculating emissions from goods and services produced outside the community is difficult and the approaches for doing so are newer and require more estimation. But it is good for a community and its citizens to be thinking about these emissions as well. Therefore a city's grade is raised by 1/3 level if this is included in their Climate Action Plan.

This is important, because in 2006 the U.S. Environmental Protection Agency calculated that 42% of the greenhouse gas emissions in the United States come from the provision of food or goods (see chart below). And in most cities, a large portion of the food and goods come from outside the city.



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Also, 90% or more of the greenhouse gas impact of food and products happens before they are purchased. Recycling and waste management alone will not solve this problem. We must think creatively about what we buy and eat and how we can positively influence others.

The good news is that technological and cultural innovations are already positioning us for reduced consumption in a still thriving economy. "The Sharing Economy", as has been coined, could greatly reduce unnecessary personal ownership. Technology has enabled peer-to-peer connections in everything from sharing a car or a bike to seldom used tools. The National League of Cities recently published a [report on how city government can embrace and foster the sharing economy](#).

3.3.2 Annual Report on Climate Action Plan

Urbana has published an Annual Progress Report on its Climate Action Plan in the past 2 years, so the grade is increased by 1/3 level. While creating an annual report is no small task, the benefits can be monumental, so a city's grade is increased 1/3 level if it does one. 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.

3.3.3 Climate Recovery Ordinance

Urbana's grade could be increased by 1/3 level if the Climate Action Plan is turned into an ordinance (law).

Turning a climate action plan into law (ordinance) shows a city's commitment to protecting the future of its youth, so its grade is increased by 1/3 level when such an ordinance is passed. 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 Eugene ordinance.

Here is [Eugene's ordinance](#).

3.4 Sample Climate Action Plans

There's plenty of help available for a city that wants to do an inventory. [ICLEI](#) is a global network of local governments dedicated to sustainability, resilience and climate action, with more than 1000 cities, towns, and counties around the globe. It has [ClearPath](#), a web-based software solution available to communities of all sizes for the purpose of performing greenhouse gas inventories, forecasts and creating climate

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action plans. It is being used by hundreds of cities in the US today and is **free** to local governments.

Many cities around the U.S. have Climate Action Plans. Here are some examples:

- [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 Carbons 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 Renewable Energy: A

While typically included within a city's Climate Action Plan, electricity generation caused 30% of US greenhouse gas emissions in 2014 (source: EPA), the largest of any source. That's why it's included as a separate grading item.

4.1 Renewable Base Grade

A city's percentage of electricity that comes from renewable sources is compared to the national average to get a base grade.

Urbana received 31% of its energy from renewable sources in 2015 and 31% in 2014. In 2015 this differs from the national average by 17.16 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)

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4.2 Renewable Grade Modifier

Urbana's renewable energy percentage changed by 0 percentage point(s) from 2014 to 2015. This did not change the grade.

This is the algorithm used to calculate the modifier:

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+.

4.3 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 our national data also comes [from the US EIA](#).

* - 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.

4.4 Renewable Energy Data

*Renewable energy data for Urbana came from: Scott Tess, Environmental Sustainability Manager
217-384-2381*

National renewable percentages for reference:

<i>2015: 13.84</i>	<i>2014: 13.47</i>
<i>2013: 13.09</i>	<i>2012: 12.46</i>
<i>2011: 12.71</i>	

4.5 More Renewable Energy Information

These [energy maps](#) 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.

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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.

5 Waste: C-

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 our greenhouse gas emissions in the U.S.).
2. The production and transport of the food and products (materials) we buy 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 our national greenhouse gas emissions of 6%.

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 Urbana:

- Waste Created per person (tons) in 2016: 1.15687
- Waste Created per person (tons) in 2015: 0
- Change in Waste Created per person from 2015 to 2016: 0%
- Recovery rate in 2016: 30.5714%
- Recovery rate in 2015: 31.0502%

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- Recovery rate change from 2015 to 2016: -0.4788 percentage points



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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+)					

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

Waste related data entered in the Report Card tool used to calculate grades:

Total waste (tons) in 2016: 47721
Total waste (tons) in 2015: 41610
Population in 2016: 41250
Population in 2015:
Recycling tons in 2016: 10296
Recycling tons in 2015: 9385
Composting tons in 2016: 4293
Composting tons in 2015: 3535

5.1 What some cities are doing on Waste

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

- Here are [10 major US 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.

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6 Carbon Removal: C+

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.

Urbana has a program that will contribute to removing carbon from the atmosphere. Therefore the grade starts at a C. As there do not appear to be metrics associated with the program, the grade remains at a C. If Urbana would add metrics to the program, and if those metrics would result in an increase in carbon storage capacity, even if those metrics are not specifically carbon related, then the grade will rise to a B. (For example, a program that measured an increase in biomass of trees would increase carbon storage capacity even though the metrics of the program was not specifically measuring carbon storage capacity.) Urbana's grade could be increased by 1/3 level if carbon storage capacity was included in the program's metrics.

6.1 Trees for carbon removal (sequestration)

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.

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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.

6.2 Soil for carbon removal (sequestration)

Here is [a great article](#) by Judith Schwartz, author of 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.

7 Youth Involvement: None

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

8 Other 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:
 - A [strategy presentation](#) supporting the climate action plan of Fort Collins, CO.
 - A spreadsheet of [specific tactics](#) for Fort Collins
 - 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.