★ **Roll Call Number**

.....

Agenda Item Number

55

April 25, 2016

Date .....

Request from iMatter, a youth environmental organization, and others to speak regarding environmental issues and climate goals in Des Moines.

Moved by _____ to

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
COWNIE				
COLEMAN				
GATTO				
GRAY				
HENSLEY				
MOORE				
WESTERGAARD				
TOTAL				

MOTION CARRIED APPROVED

_____ Mayor

CERTIFICATE

I, DIANE RAUH, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

_____ City Clerk

55

Rauh, Diane I.

From: website@dmgov.org
Sent: Thursday, March 31, 2016 7:25 PM
To: CouncilSpeak
Cc: CityClerk
Subject: Request to Speak Before the City Council - form submission

First Name: Carolyn

Last Name: Uhlenhake Walker

Address: 4111 Ingersoll Ave.

City: Des Moines

State: IA

Zip: 50312

Phone: 515-779-1680

Email: carolynruw@gmail.com

Speaker(s): Carolyn Uhlenhake Walker, representatives from iMatter, Central Iowa Sierra Club, Des Moines Citizens' Climate Lobby, Iowa Interfaith Power and Light

Meeting Date: Monday, April 25, 2016

Regarding: Picking up on the momentum of the Paris Climate Summit, we representing different environmental groups and concerned citizens in Des Moines and the area would like for the city council to adopt two goals regarding CO2 emissions and forming a Citizens' Taskforce on Climate Change/Energy.

Submitted: 3/31/2016 7:24:42 PM

55

Climate Goals for Des Moines

Late last fall, leaders and scientists from around the world, including our own Mayor, Frank Cownie, traveled to Paris to finalize a historic agreement that set all nations on a path to cut greenhouse gases and minimize the devastating effects of climate change. This inspired a group of Des Moines citizens of all ages to come together to ask the City of Des Moines to show that it can be a good global citizen and support this international agreement.

Toward this end, we ask the City of Des Moines to adopt the following goals in the Des Moines Plan:

1. To provide staffing and financial resources that will direct Des Moines toward making specific, measurable cuts in city-wide greenhouse gas emissions consistent with the agreement of the United Nations Conference on Climate Change in Paris. At a minimum, this includes the short-term goal, per the Paris agreement, of cutting emissions 28% by 2025. However, with the planet warming more quickly than expected, the City and its residents need a longer-term goal of zero net emissions by 2040 to help ensure that the world remains safely below a livable 1.5 degrees C of warming.

2. To achieve these aims, we further ask that the City of Des Moines renew its Citizens' Sustainability Task Force, bringing together local experts, concerned citizens, and youth to investigate emission reduction strategies and advise the City on ways to achieve these urgently needed cuts.

iMatter/youth/Des Moines
Interfaith Green Coalition
Central Iowa Sierra Club
Citizens Climate Lobby/Des Moines
Energy and Justice for All
Iowa Interfaith Power and Light
Drake Environmental Action League
Drake Outdoor Leadership League
Urban Ambassadors/ Des Moines
Women's International League for Peace
and Freedom/Des Moines
Organizing for Action/ Iowa

55

iMATTER Des Moines Detail Report

For Des Moines Climate Report Card

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.

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	D-	50%
Renewable Energy %	B	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 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.

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 Des Moines = C-

3 Individual Grade Descriptions

3.1 Zero Emissions Plan: D-

It's good that Des Moines has done or is planning on doing a Greenhouse Gas Inventory. The next step to an improved grade is a Climate Action Plan.

Climate Action Plan information entered:

Link to Greenhouse Gas Inventory (if entered): GHG inventory had been completed community-wide as well as city facilities. Tracked via Clearpath.

Link to Climate Action Plan (if entered):

Link to Annual Report (if entered):

3.2 Renewable Energy: A+

Des Moines received 39% of its energy from renewable sources in 2014 and 30% in 2013. In 2014 this differs from the national average by 25.53 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)

Des Moines's renewable energy percentage changed by 9 percentage point(s) from 2013 to 2014.This increased the grade one whole level. 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:
https://www.berkshirehathawayenergyco.com/our-businesses/midamericanenergy-company

National renewable percentages for reference:

2014: 13.47 2012: 12.46
2013: 13.09 2011: 12.71

3.3 Waste: D

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 Des Moines:

- Waste Created per person (tons) in 2015: 0.33
- Waste Created per person (tons) in 2014: 0.31
- Change in Waste Created per person from 2014 to 2015: 6.45%
- Recovery rate in 2015: 34.31%
- Recovery rate in 2014: 34.37%
- Recovery rate change from 2014 to 2015: -0.06 percentage points

iMATTER Des Moines
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+)					

Des Moines has a curbside recycling program, which is good. If it did not, then grades would be reduced by at least 1/3 level. Des Moines 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 2015: 69880
Total waste (tons) in 2014: 64355
Population in 2015: 209220
Population in 2014: 209220
Recycling tons in 2015: 10785
Recycling tons in 2014: 10132

Composting tons in 2015: 13191
Composting tons in 2014: 11985
Where waste data came from (if entered): Public Works Sanitation Division.
(Public Works collected only. Does not include Commercial) Metro Waste Authority does not collect

3.4 Carbon Removal: C

Des Moines 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 Des Moines 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.) Des Moines's grade could be increased by 1/3 level if carbon storage capacity was included in the program's metrics.

Link to Program used in this section (if provided):
http://www.dmgov.org/Departments/PublicWorks/Pages/Forestry.aspx

3.5 Youth Involvement: None

Des Moinesdoes not have youth formally involved in advising on, or helping to develop climate change related policies or plans. If youth are involved, then Des Moines'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

iMATTER Des Moines Detail Report

4 Zero Emissions Climate Action Plan

Des Moines Grade = D-

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

Des Moines has done a Greenhouse Gas Inventory, great!

4.2 Climate Action Plan

Des Moinesdoes not have a Climate Action Plan. Hundreds of cities now do.

Here are examples of Climate Action Plans

- 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.

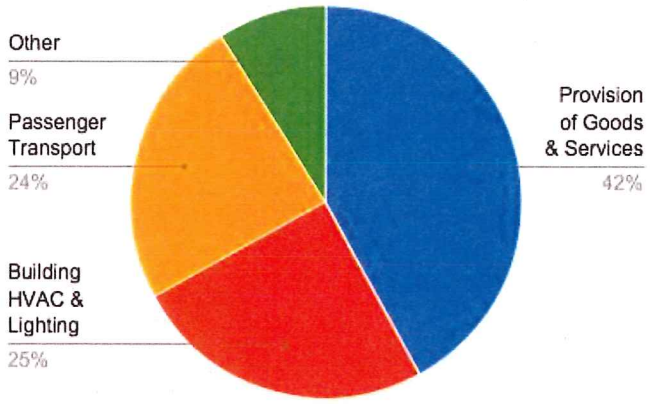
Measuring-Up-2015, a report by ICLEI and the World Wildlife Federation, explores Climate Action plans in 4 of the 34 US cities who have recently pledged to reduce emissions by 80% by 2050. Here you can find case studies for Atlanta, Cincinnati, Minneapolis and Portland.

4.2.1 Goods produced outside Des Moines

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 gets some extra credit for thinking about this in their Climate Action Plan or trying to calculate it in their Greenhouse Gas Inventory.

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.



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.

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.

5 Renewable Energy

Des Moines Grade = A+

While typically included within a city's Climate Action Plan, electricity generation caused 32% of US greenhouse gas emissions in 2012 (source: EPA), the largest of any source. 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 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.

5.2 Des Moines Compared to National Renewable Energy Average

According to the data input, Des Moines's renewable energy is 7% or more above the national average. Great job!

6 Waste

Des Moines Grade = D

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%.

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

Des Moines Grade = 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.

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.

55

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

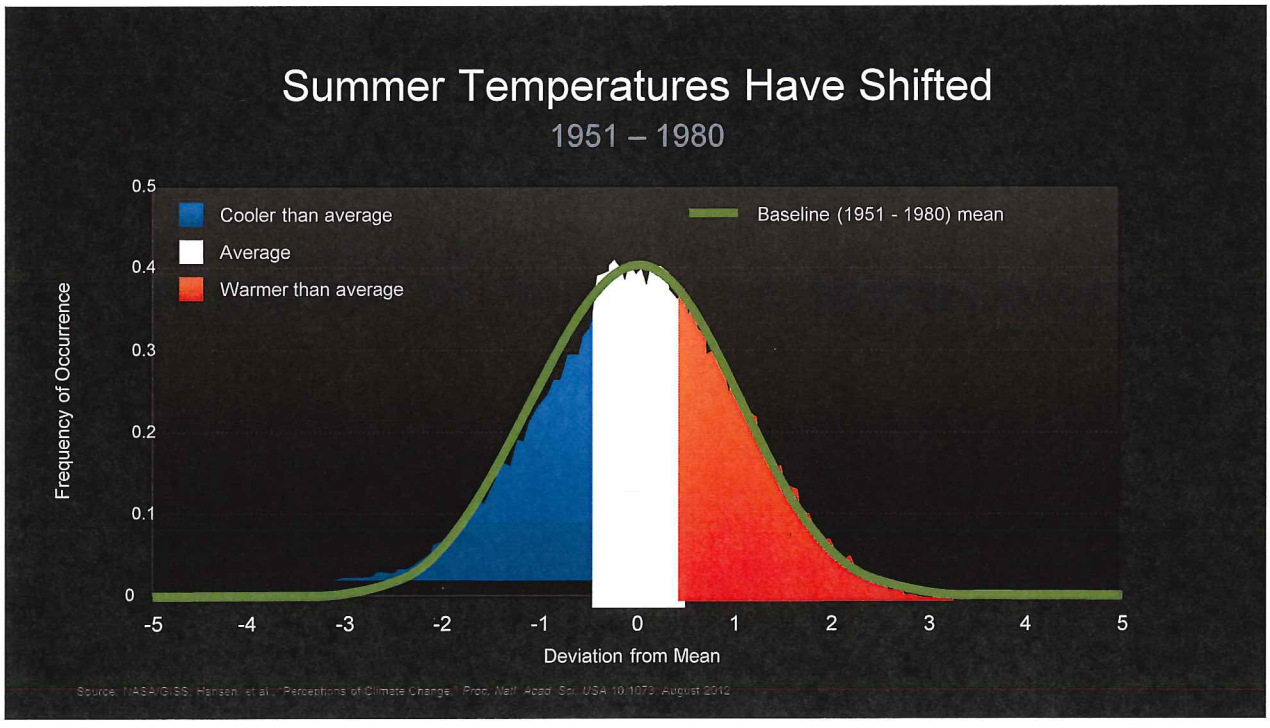
Here is a great article by Judith Schwartz, author or the book *Cows Save the Planet and Other Improbable Ways of Restoring Soil to Heal the Earth* that describes how better managing soil can play a significant role in addressing the climate crisis.

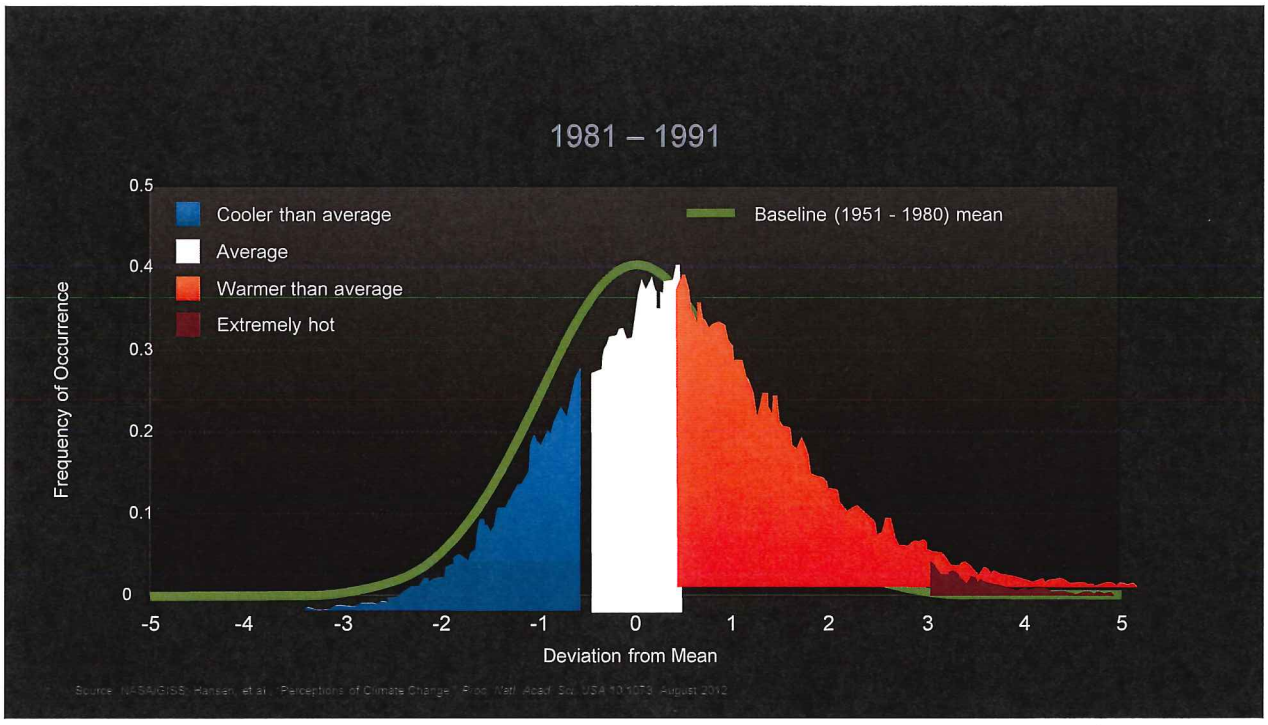
8 Other great resources for cities

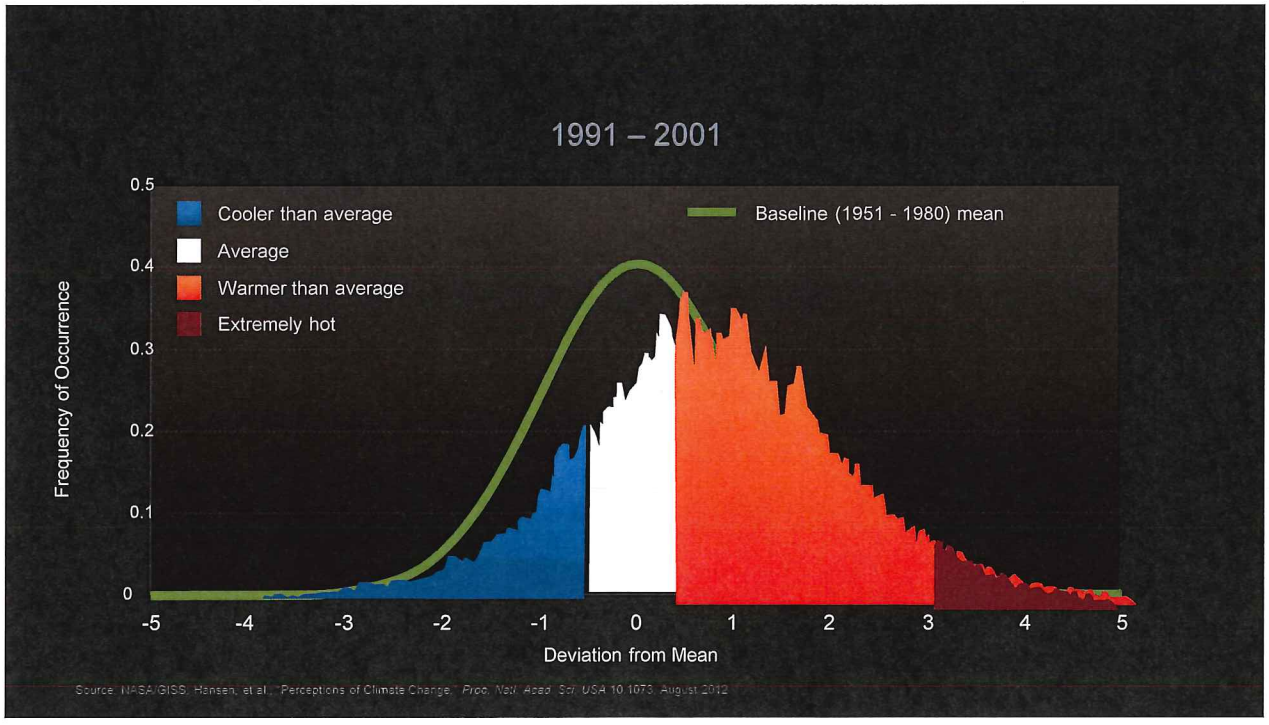
Note that all materials linked to are either publicly available and/or have been provided with the consent of the creating organization.

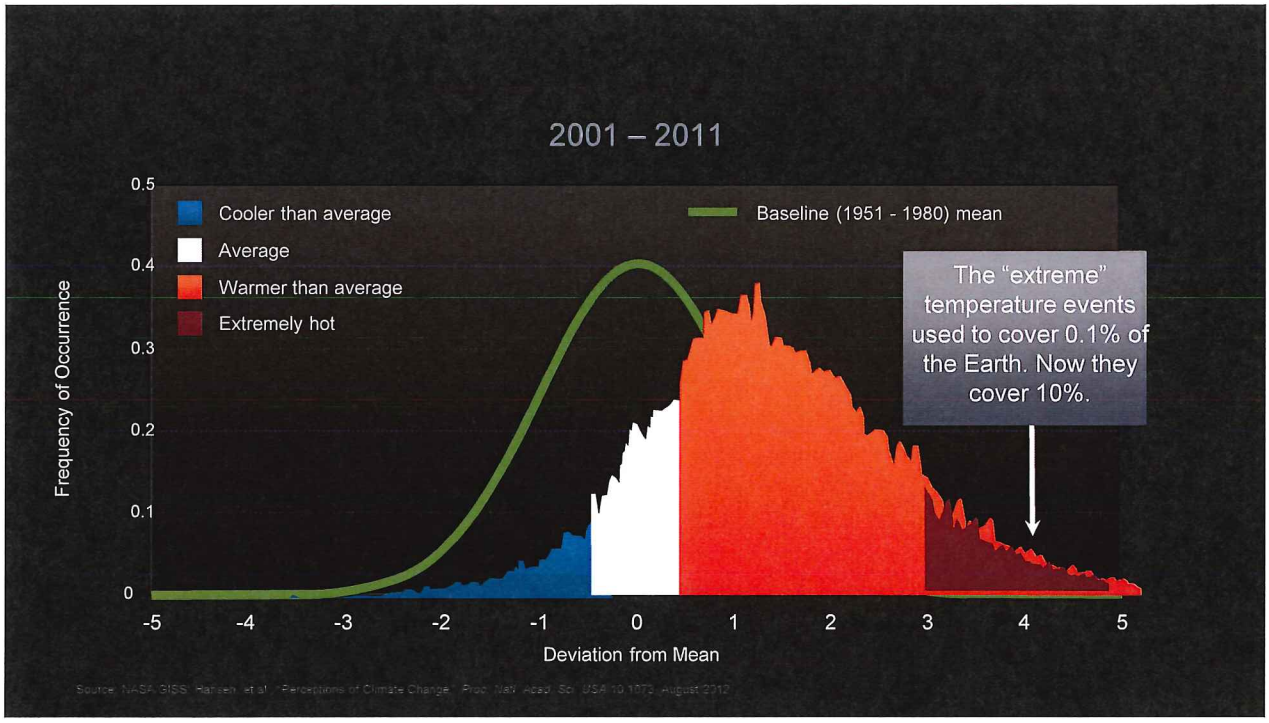
- Rocky Mountain Institute (RMI) has an excellent new Community Resource Guide that provides a blueprint to launch a community energy transformation. Additional resources from RMI include:
  - A strategy presentation supporting the climate action plan of Fort Collins, CO. ○ A spreadsheet of specific 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.

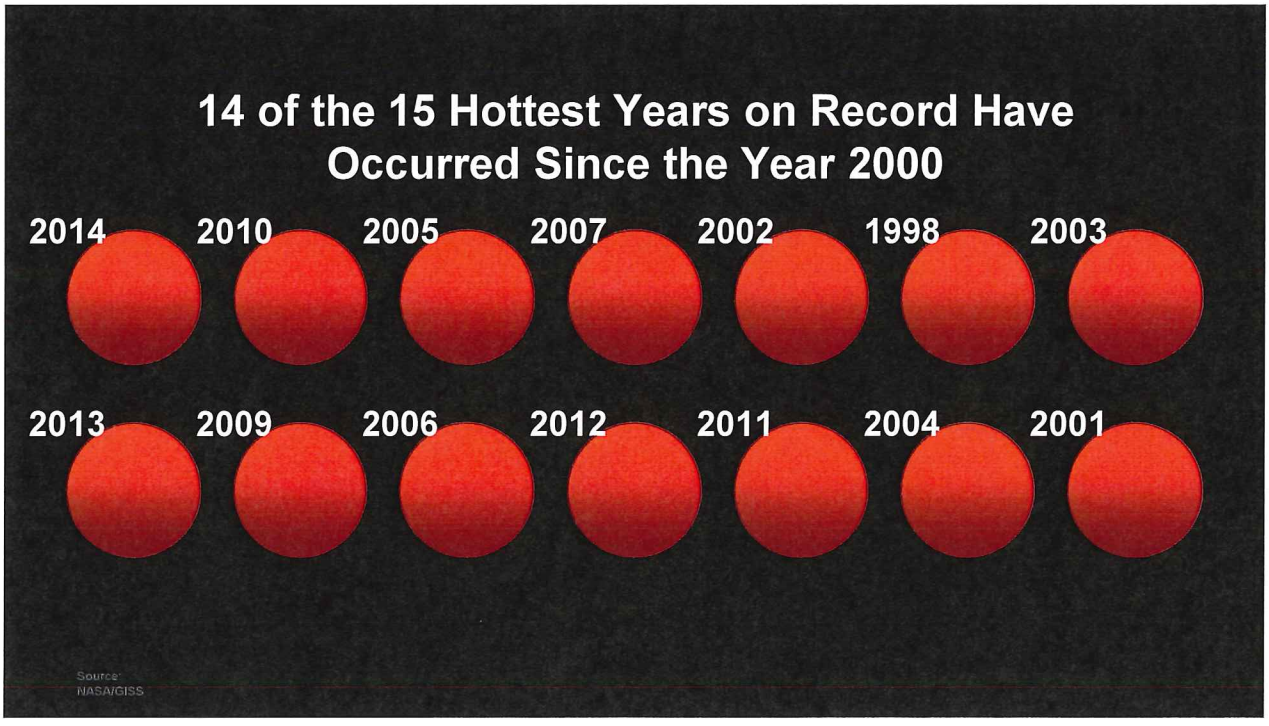

Source:
NASA


Summer Temperatures Have Shifted
1951 – 1980
Cooler than average
Average
Warmer than average
Baseline (1951 - 1980) mean
Frequency of Occurrence
0.5
0.4
0.3
0.2
0.1
0
-5
-4
-3
-2
-1
0
1
2
3
4
5
Deviation from Mean
Source: NASA/GISS; Hansen, et al., "Perceptions of Climate Change," Proc. Natl. Acad. Sci. USA 10.1073, August 2012

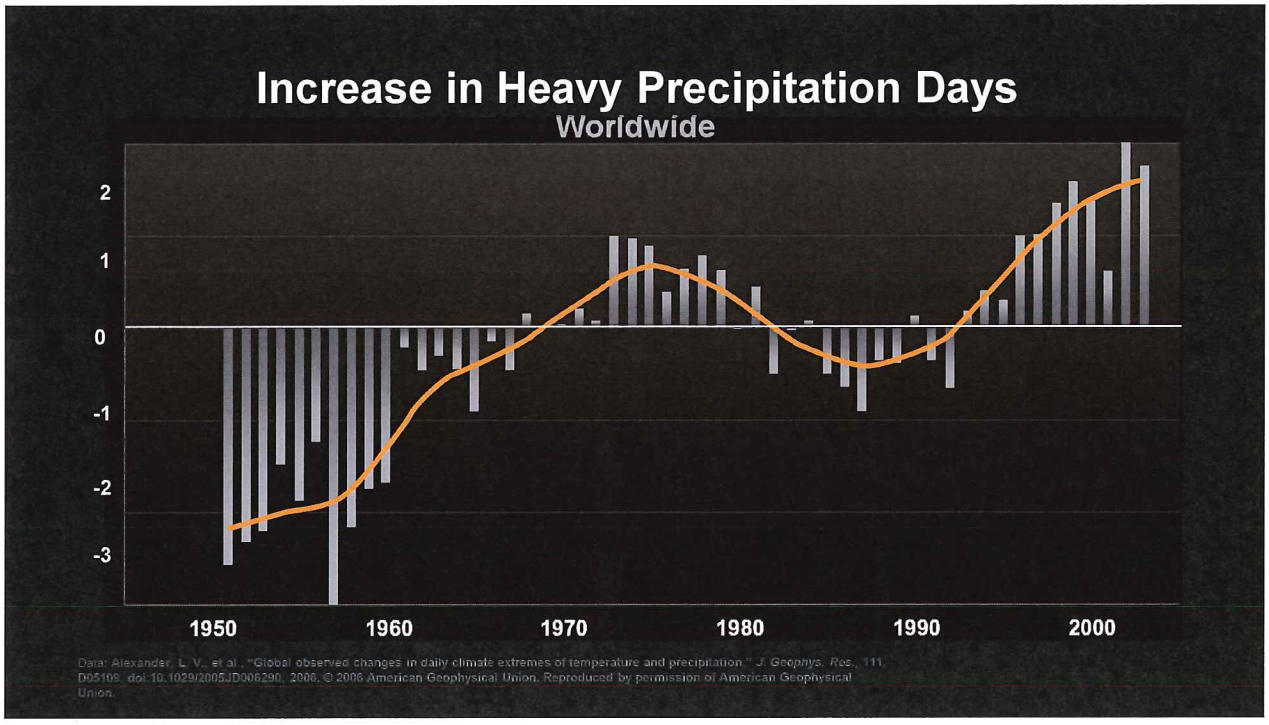

1981 – 1991
Cooler than average
Average
Warmer than average
Extremely hot
Baseline (1951 - 1980) mean
Frequency of Occurrence
0.5
0.4
0.3
0.2
0.1
0
-5
-4
-3
-2
-1
0
1
2
3
4
5
Deviation from Mean
Source: NASA/GISS; Hansen, et al., "Perceptions of Climate Change," Proc. Natl. Acad. Sci. USA 10.1073, August 2012


1991 – 2001
Cooler than average
Average
Warmer than average
Extremely hot
Baseline (1951 - 1980) mean
Frequency of Occurrence
0.5
0.4
0.3
0.2
0.1
0
-5
-4
-3
-2
-1
0
1
2
3
4
5
Deviation from Mean
Source: NASA/GISS; Hansen, et al., "Perceptions of Climate Change," Proc. Natl. Acad. Sci. USA 10.1073, August 2012


2001 – 2011
Cooler than average
Average
Warmer than average
Extremely hot
Baseline (1951 - 1980) mean
The "extreme" temperature events used to cover 0.1% of the Earth. Now they cover 10%.
Frequency of Occurrence
0.5
0.4
0.3
0.2
0.1
0
-5
-4
-3
-2
-1
0
1
2
3
4
5
Deviation from Mean

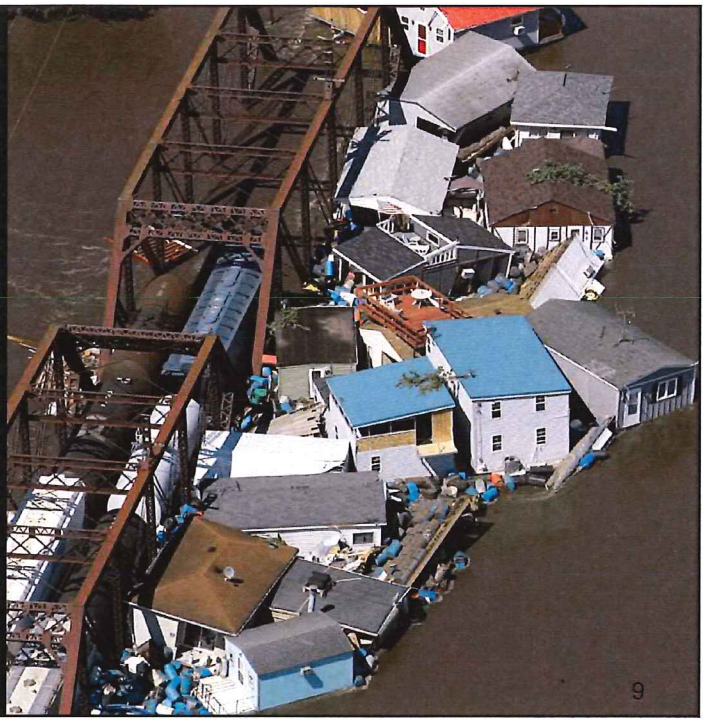

14 of the 15 Hottest Years on Record Have Occurred Since the Year 2000
2014
2010
2005
2007
2002
1998
2003
2013
2009
2006
2012
2011
2004
2001
Source:
NASA/GISS


© 2010 Sean R.
Heavey


Increase in Heavy Precipitation Days
Worldwide
2
1
0
-1
-2
-3
1950
1960
1970
1980
1990
2000
Data: Alexander, L. V., et al., "Global observed changes in daily climate extremes of temperature and precipitation," J. Geophys. Res., 111, D05109, doi:10.1029/2005JD006290, 2006. © 2006 American Geophysical Union. Reproduced by permission of American Geophysical Union.

Cedar Rapids, Iowa
June 14, 2008

Damages amounted to $5 – 6 billion



9

Shafu Town, Qinzhou City, China
June 11, 2014

Up to three million people were affected by flooding in China in June

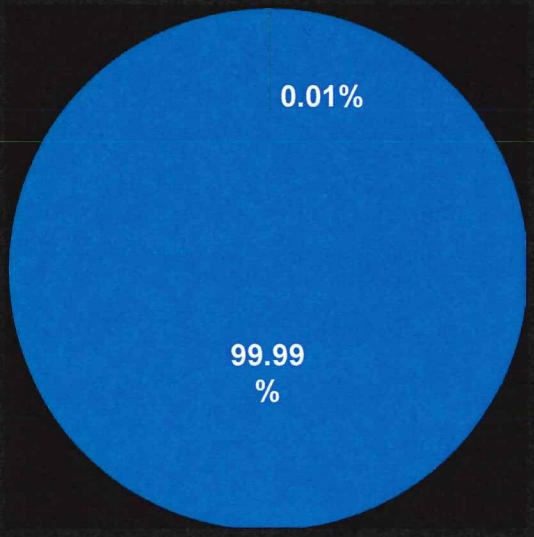
10

The Consensus of Climate Scientists

Peer-Reviewed Climate Papers
November 2012 – December 2013

9,136 authors agree that climate change is happening and is primarily caused by human activity.

One does not.

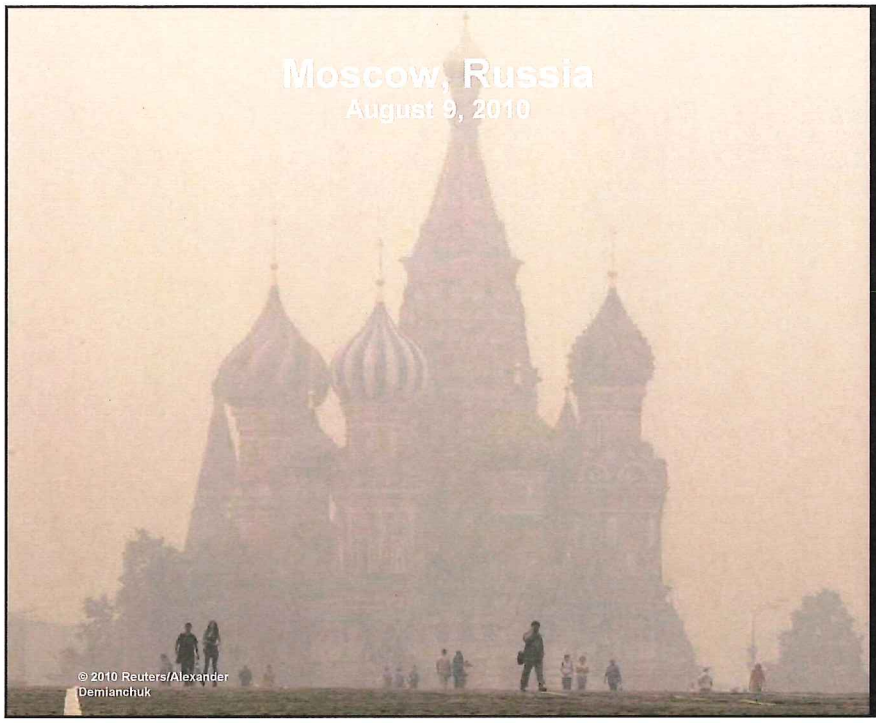


Source: 2014 James Lawrence Powell

October 13, 2014

U.S. Department of Defense
2014 Climate Change Roadmap

"Rising global temperatures, changing precipitation patterns, climbing sea levels, and more extreme weather events will intensify the challenges of global instability, hunger, poverty, and conflict."



55,000 people died

"The only plausible explanation for the rise in weather-related catastrophes is climate change."

Munich Re

One of the two largest reinsurance companies in the world

September 27, 2010


In 2013, wind power in Iowa provided 27.4% of all in-state electricity, enough to power more than 1.4 million homes
Source: The Post Bulletin; American Wind Energy Association
Photo: © 2014 AP Photo/Charlie Neibergall
Adair, Iowa
17


Kalona Solar Park, Kalona, Iowa
Iowa's largest solar park opened in July 2014.
© Farmers Electric Cooperative
18


Source: NASA
19