



## **Increasing Climate Literacy: White Paper**

by Kevin Tuerff, Social Entrepreneur and Marketing Communications Consultant

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The mission of the Office of Sustainability is to provide leadership, influence positive action through engagement, and create measurable benefits for Austin related to climate, food, resource efficiency, and resiliency.



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At the inaugural South by South Lawn, a new innovation summit organized at the White House, President Barack Obama was joined on stage by climatologist Katharine Hayhoe to discuss solutions for global climate change. Hayhoe, a professor at Texas Tech University, was recently named one of *Time* magazine's 100 Most Influential People for her work as a climate scientist and communicator – “an environmental evangelist.” She doesn't believe her conservative political philosophy conflicts with being an advocate on climate change. That's why she works with fellow evangelical Christians to educate and empower churches to address climate issues.

I really appreciate her comments about the complexities of understanding climate change in relation to changing public opinions and public policy:

*“One of the biggest lessons I've learned as a scientist is we think that facts and information are what will make people care. So many times I have someone coming to me saying, ‘If you could just come and talk to mother or my brother-in-law,’ or ‘if you could just come and talk to our city council and give them the facts that climate change is real. It's us. It's bad. We have to fix it ... that will change their mind.’”*

*“The biggest thing I've learned is that facts are not enough. The most important thing to do is not to pile up scientific reports, it's to connect this issue to what's already in our hearts. One of the most insidious myths is that I have to be a certain type of person to care about climate change. And if I'm not that person, then I don't care about it. But the reality is if we're a human living on this planet, this is the only planet we have. If we are a parent, we would do anything for our children's sake. If we're a businessperson, we would care about the economy. We care about the community that we live in. We care about our health. We care about wanting clean air to breathe. We want to have enough water to drink. We want to have a safe and secure environment in which to live.*

*The single most important thing I've learned is we already have all the values to care about climate change in our hearts, no matter who we are, and what part of the political spectrum we come from. We just need to figure out how to connect those values to the issue of climate.”*

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One way to connect those values is by increasing literacy on the issue of climate change solutions and sustainability. But as Hayhoe points, out simply piling up facts is not enough. We need to provide information that connects with people – hits them where they live.

With more than 25 years of experience in environmental behavior change, I've seen the positive results that can be achieved with comprehensive media, community and school outreach efforts. These campaigns have significantly increased recycling rates, conserved hundreds of millions of gallons of water and increased purchases of clean, renewable energy. Surveys consistently show people want to do the right thing for the environment, but they need a nudge and simple, easy tips.

Research guided the development of these successful campaigns. In each case, we found that most Americans simply don't know basic facts that are key to their lifestyle – such as the natural source of their drinking water, or what type of fuel provides electricity to their home.

For example, after educating consumers in Central Texas that the Colorado River is the primary source of their water, research showed people were twice as likely to conserve it. During the most recent drought, a combination of outdoor watering restrictions and public education helped the city of Austin achieve its seven-year water conservation goal four years early.

In 2015, the Austin City Council approved Austin 2050: Net-Zero Community Climate Plan, which calls for several strategies to reduce pollution from transportation, energy and waste. Among many strategies to reduce greenhouse gas pollution locally, each of these areas require behavior change education to succeed.

For Austin to reach its 2050 greenhouse goals, everyone needs to be more literate about sustainability and climate. Of course, we should teach this type of literacy in schools, but we really need to educate adults on these issues.

*The Handbook of Sustainability Literacy: Skills for a Changing World* uses the term *sustainability literacy* to indicate the "skills, attitudes, competencies, dispositions and values that are necessary for surviving and thriving in the declining conditions of the world in ways which slow that decline as far as possible."

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Record-breaking temperatures, extreme weather (tornadoes, floods, droughts and hurricanes) and wildfires across the country have increased awareness that climate change is real and happening now. Other impacts include the increased frequency of diseases like Zika and West Nile virus. There are also financial impacts, like increased food production costs and higher electricity bills caused by running air conditioners longer throughout the year. Warmer ocean temperatures are threatening coastal cities with rising tides and storm surges. Scientists are now seeing massive changes to ocean ecosystems that threaten species extinction and seafood production.

How do we get people started on the road to climate change literacy? Here's my list of top five terms everyone should know:

- 1. Greenhouse gases:** Greenhouse gases in the atmosphere trap and hold heat at the Earth's surface. These gases include carbon dioxide and methane. Carbon dioxide occurs naturally, but it's also created by burning fossil fuels (chiefly oil, natural gas and coal) to make energy and for transportation. The highest methane emissions come from agriculture, energy production, and from rotting food and green waste in landfills.
- 2. Carbon footprint:** Think of this as each individual's combined daily share of pollution created by the use of electricity, transportation, fuel, food and the production of stuff (which ends up as waste). Recent studies on Austin/Travis County's carbon footprint reveal 50 percent comes from energy, 43 percent comes from transportation, and 7 percent comes from materials and waste management. In all, the region produces 14 million metric tons of carbon dioxide-equivalent per year. An area's carbon footprint will vary based on geography, types of industry and its number of single-occupant drivers.
- 3. Climate mitigation:** In 2015, the United States and more than 190 nations agreed to the Paris Climate Agreement, which set ambitious goals to reduce greenhouse gases globally. The U.S. Congress still needs to sign off on this agreement, implement pollution regulations and provide related funding. The best way to fix this pollution problem is to burn less fossil fuel. This may be achieved through regulations that require innovative technologies that reduce air pollution from factories, power plants and other sources. It can also be achieved through voluntary measures by the automotive and airline industries to burn less fuel through energy efficiency.

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- 4. Climate adaptation:** When someone loses a limb, they have to adapt and use a prosthetic device. In the same way, climate change is likely to cause our planet to lose plants, animals – and perhaps even whole ecosystems – and we'll have to adapt to these changes. We know climate change is happening, so how do we adapt in every sector of society? Should we continue to allow development in coastal or flood zones? If droughts are inevitable, should farmers in drought-prone areas continue business as usual? If we know power outages are inevitable during extreme weather, should we bury electric power lines underground to avoid power outages during heavy winds, or encourage broader use of backup electrical generators? If vector-borne diseases continue to spread due to standing water, should we invest in better drainage systems or fine people who don't drain standing water? These are all hard questions every business and government agency should be addressing now.
- 5. Carbon trading and fees:** For some industries, it's very difficult to reduce greenhouse gas emissions. Emissions trading, which has been around in Texas since the 1990s, allows certain industrial facilities – ones that can run more efficiently than their "capped" pollution limit – to sell their pollution credits to other facilities. The proceeds go to fund other emissions reduction strategies. This is referred to as, "cap and trade" and it is currently used in California and other countries, including Canada and the members of the European Union. Even China plans to start "cap and trade." There has been little political momentum to implement a nationwide cap and trade system in the U.S. There is some discussion of establishing a carbon fee (OK, call it a tax) on every unit of fossil fuel burned in transportation and energy production for both electricity and manufactured goods. Likely companies would pass along this fee/tax to the consumer, resulting in higher prices for gas, electricity, water and consumer goods. But smart companies will use innovation to find ways to maximize the energy efficiency of their products and vehicles. This would give them a competitive advantage, and consumers would likely opt for the less expensive, less-polluting product.

There is much to be done to change hearts and minds when it comes to addressing the climate change crisis. I encourage you to increase your climate and sustainability literacy by reading about these and many other related issues. This will allow you to have more effective conversations with family and friends as well as government and business leaders. Connect the dots between values and solutions. Provided below are just a few online resources available for additional study.

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**Additional Resources:**

City of Austin Climate Program: <http://www.austintexas.gov/climate>

2015 Austin City Council Resolution that adopted the Community Climate Plan to achieve net-zero community-wide greenhouse gas emissions by 2050:

<http://www.austintexas.gov/edims/document.cfm?id=234102>

U.S. Global Change Research Program Climate Literacy resource guide:

<http://www.globalchange.gov/browse/reports/climate-literacy-essential-principles-climate-science-high-resolution-booklet>

No Oregon Child Left Inside Environmental Literacy Plan:

<http://www.ode.state.or.us/gradelevel/hs/environmental-literacy-plan-2013.pdf>

Washington State Environmental and Sustainability Literacy Plan:

<http://www.k12.wa.us/environmentsustainability/pubdocs/WAESLPFinalJuly2011.pdf>

The Journal of Sustainability Education, Review of the Handbook of Sustainability Literacy: Skills for a Changing World: [http://www.jsedimensions.org/wordpress/content/review-of-the-](http://www.jsedimensions.org/wordpress/content/review-of-the-handbook-of-sustainability-literacy-skills-for-a-changing-world_2011_03/)

[handbook-of-sustainability-literacy-skills-for-a-changing-world\\_2011\\_03/](http://www.jsedimensions.org/wordpress/content/review-of-the-handbook-of-sustainability-literacy-skills-for-a-changing-world_2011_03/)

*Kevin Tuerff is an entrepreneur with a bent toward social good. He started a college radio station, a national recycling awareness day and two successful companies focused on finding authentic health and environmental solutions.*

*Along with business partner Valerie Salinas-Davis, he co-founded EnviroMedia in 1997 and Green Canary Sustainability Consulting in 2008.*

*Tuerff focused the companies in a unique niche based upon authentic improvements to public health and environment. In 2015, Tuerff led EnviroMedia's effort to join an elite group of businesses that are "Certified B Corporations" and members of 1% for the Planet. Fewer than 60 companies nationwide have earned recognition from both of these sustainability organizations.*

*Major accomplishments include winning a 20-year contract with the federal government, which allowed EnviroMedia to become one of 16 firms to provide marketing services to the U.S. Centers for Disease Control. Tuerff led corporate marketing and consulting contracts for Dell, Green Mountain Energy and Daimler's car2go, among others. Tuerff is a co-founder of America Recycles Day (Nov. 15) in 1997, now managed by Keep America Beautiful.*

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