#	Category	Title	Assumptions	Calculation	References
1	**Transportation**	No Idle Zone!	17.2% of vehicle fuel is consumed by idling. Turning your engine off when stopped can result in savings of approximately 8%.	To calculate car emissions, we can either calculate from: 1) The fuel purchased (using US EPA emission factors) 2) The make and model of your car, where we lookup your model in the EPA's fuel consumption database, and calculate your carbon emissions from your car's fuel efficiency and the number of km entered 3) We ask for a car type - Compact, Mid-size, Large car, Light truck, and calculate emissions for these categories based on the Greenhouse gas emissins protocol.	http://www.fueleconomy.gov/feg/atv.shtml
2		Buying Diesel? Make it Biodiesel!	Assume use of B20 blend (20% biodiesel, 80% petroleum diesel). Reduces your car carbon impact by **19%**.	The greenhouse gas protocol lists that diesel fuel consumption releases 10.39 kg co2 per gallon consumed. The Simplified Emissions Inventory Tool from the EPA voluntary emissions program lists B20 biofuel as having a emissions factor of 8.03 kg co2 per gallon. Comparing these factor gives a savings of about 19%. The greenhouse gas emissions protocol is available from www.ghgprotocol.org. The emission factor for diesel is taken from the Mobile Combustion CO2 Emissions Worksheet, version 1.2. The Simplified Emissions Inventory Tool is available from the US EPA voluntary emissions website. Emission factor taken from SEIT calculation workbook, version 1.0	Comparing SEIT and GHGprotocol emission factors; http://www.biodiesel.org/resources/reportsdatabase/reports/gen/19980501_gen-339.pdf
3		Ridesharing	Reduces your car carbon impact by **50%**.	We assume that a rideshare reduces impact by 50% by doubling the number of people who drive in a car	N/A
4		When you drive, drive smart!	Reduces your car carbon impact by **20%**.	To calculate car emissions, we can either calculate from: 1) The fuel purchased (using US EPA emission factors) 2) The make and model of your car, where we lookup your model in the EPA's fuel consumption database, and calculate your carbon emissions from your car's fuel efficiency and the number of km entered 3) We ask for a car type - Compact, Mid-size, Large car, Light truck, and calculate emissions for these categories based on the Greenhouse gas emissins protocol.	Estimates for the effect of speed on MPG are based on a study by West, B.H., R.N. McGill, J.W. Hodgson, S.S. Sluder, and D.E. Smith, Development and Verification of Light-Duty Modal Emissions and Fuel Consumption Values for Traffic Models, Oak Ridge National Laboratory, Oak Ridge, Tennessee, March 1999; Alternative source: International Energy Agency: http://www.iea.org/; http://www.iea.org/textbase/nppdf/free/2005/fuel_efficient.pdf; http://www.cemt.org/jtrc/
5		The wave of the future - telecommuting!	Reduces your flight carbon impact by the percentage of flights you choose to reduce.	Flights are calculated after derivations in the GHG emissions protocol, mobile combustion worksheet, available at www.ghgprotocol.org. This is based on the fuel efficiency of a Boeing 737, and calculates a specific emission factor per mile traveled based on an set amount of emissions per passenger per takeoff, and a per mile factor for cruising altitude. In addition, following a 1999, Intergovernmental Pannel on Climate Change report, Aviation and the Global Atmosphere, available from www.ipcc.ch, we apply a multiplier of 2.7 to account for the increased radiative forcing of releasing emissions at altitude.	www.ghgprotocol.org
6		Destination: the inflation station!	Reduces your car carbon impact by 3.5**%**.		http://www.iea.org/textbase/nppdf/free/2005/fuel_efficient.pdf
7		Flex your purchasing power - buy a hybrid!	Reduces your car carbon impact by **25%**.	A comparision of fuel efficiency in the Environmental Protection Agency Green Vehicle Guide: comparing similar models that are available both with and without hybrid technology. A comparision of these car results in a 25 and 30 percent in fuel efficiency (and thus carbon emissions) for hybrid versus non-hybrid vehicles.	http://www.epa.gov/otaq/tcldata.htm
8		Get on the bus!	Whatever portion of your car travel is replaced by public transit will be multiplied by the emission factor of an urban bus rather than your car emission factor.	Comparing the per km emissions factor for a typical car and a bus, the factor is about 4. Factors were calculated with the GHG protocol worksheet, available from www.ghgprotocol.org	www.ghgprotocol.org
9		Give up your car - just for a day!	The % traveled by walking or biking has no emissions, replacting the emission factor for a car.		
10		Use low-viscosity motor oil	reduce driving-related emissions by **2%**	Low-viscosity motor oil lubricates the moving parts of the engine better than ordinary oils and reduces friction. The best oils can reduce fuel consumption and CO2 emissions by more than 2.5% (Fowler, 2006).	
		Become a one-car household!			
		It's all about efficiency			
11	**Consumer Choices**	Choose locally produced, in-season food	reduce emissions by 73 kg	Based on analysis conducted for City of Seattle, average local GHG emissions: Average difference X 3 (to total a dinner of 1.5 lbs) x 3 meals per day x 365 days	http://courses.washington.edu/emksp06/SeattleFoodSystem/Final_GHG_Report.pdf
12		Go organic!	reduce emissions by 35 kg	Based on analysis conducted for City of Seattle, average local GHG emissions: Average difference X 3 (to total a dinner of 1.5 lbs) x 3 meals per day x 365 days	http://courses.washington.edu/emksp06/SeattleFoodSystem/Final_GHG_Report.pdf
13		Grow your own food	Erases the transportation impacts of the food you choose to grow yourself.	**DNQ**	**DNQ**
14		Re-package the way you think about packaging!	reduce the amount of packaged food by a % on a slider.	20% of landfilled garbage in Seattle is recyclable paper/cardboard/newpaper. Should be used as maximum. Currently uses canadian data on the amount of packaging waste in different categories produced by a typical household. Source reduction on this amount of waste in different categories is calculated using the data in the US EPA document "Solid Waste Management and Greenhouse Gases", which provides data on the greenhouse gas emsions associated with source reduction, recycling, and landfilling. Available from www.epa.gov	http://epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf; http://www.seattle.gov/util/About_SPU/Garbage_System/History_&_Overview/SOLIDWAST_200312020923287.asp
15		If it comes recycled, buy recycled!	Reduce amount of virgin source material in product purchases. Use paper as a proxy.	Saving from buying recycled paper as opposed to regular paper can be calculated from the data in the Environmental Defence Paper Calculator, online at www.papercalculator.org. (Use paper as a proxy).	www.papercalculator.org; http://epa.gov/climatechange/wycd/waste/calculators/ReCon_home.html; efactors explained in exhibit 3-1: http://epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf
16	**Home Energy**	Keeping the temperature just right!	Reduce heating emissions by 5%	From the U.S.DOE - about 1% savings per degree turned down while you're away/asleep, if you're away/alseep for 8 hours or more. Savings assumes a typical, single-family home with an 8 hour daytime setback and a 10 hour nighttime setback of 8°F in winter and 4°F in summer.	http://www.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12720
17		Adjust your water heater	6% of water heating energy reduced; Hot water heating makes up about 13% of the average City Light customer's load.	Reduce energy emissions by: 6% of 13% of total load.	http://www.eere.energy.gov/consumer/your_home/water_heating/index.cfm/mytopic=13090; http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf
18		Appliances = out with the old, in with the new!	Replacing current appliances with ENERGY STAR models results in savings of about 10% overall.	Appliances account for approximately 1/3 of average US energy load. Reducing that third by a third results in an approximate reduction in household energy consumption by 10%. All data from the US DOE and US EIA. Multiplying the savings listed in the Energy star website by the per unit average energy consumption listed in the EIA and comparing the results with the average household electricity consumption gives a 10% reduction.	http://www.energystar.gov/index.cfm?c=appliances.pr_appliances; http://www.eia.doe.gov/emeu/reps/enduse/er01_us_tab1.html
19		Check your furnace filter	Reduces the carbon impact of your home heating by **5%**.	Reduce home heating emissions by 5%.	http://www.fypower.org/res/tools/energy_tips_results.html?tips=heating

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20		Purchase Green Power	Consumers choose level of participation in the City Light Green Power Program: $3 for 25%, $6 for 50% or $12 for 100%	Zero out electricity emissions in amount selected (25-100%).	Seattle City Light
21		Get a home energy audit	**DNQ**	**DNQ**	**DNQ**
22		Dishwasher: Fill it up!	Reduces the carbon impact of your dishwasher by **20%** and your domestic water consumption by **5%**. As with clothes washers, the majority of a dishwasher's energy (about 80 percent) is used not to run the machine but to heat the water—which means that the best way to improve efficiency is to cut down on hot-water consumption	Average dishwasher uses 935 kWh/yr; Assume 1/2 current loads are 1/2 full, so could reduce number of cycles to 75% of today's #, = .75*935 kWh	https://www.rmi.org/images/PDFs/HEBs/E04-16_HEB6_CleanApps.pdf; http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf
23		Washing Machine: Fill it up!	Heating water accounts for most (85–90 percent) of the energy required to wash clothes, minimizing the use of hot water is the simplest way to reduce energy use: Half the energy consumed in heating water for washing and rinsing can be saved by changing temperature settings from hot to warm. Using smaller load settings can reduce water use by up to 50%.	Average washing machine uses 1080 kWh/yr; Assume 1/2 current loads are 1/2 full, so could reduce number of cycles to 75% of today's #, = .75*1080kWh	https://www.rmi.org/images/PDFs/HEBs/E04-16_HEB6_CleanApps.pdf; http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf
24		Replace incandescent bulbs with compact fluorescent bulbs	Assume replace 5 incandescent bulbs with fluorescents. Assume each bulb results in 100 lbs CO2e reduction over life of bulb.	5 bulbs would result in 500 lbs of CO2e savings.	http://ec.europa.eu/environment/climat/campaign/pdf/table_appliances_en.pdf
		Install water-saving devices			
25		Install high-efficiency windows	Lower heating impact by 10% (Assume no cooling load)	Reduce home heating emissions by 10%	RMI, Cool Citizens, Everyday Solutions to Climate Change, http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf
26		Install a high-efficiency furnace or heat pump	Lower heating impact by 20% with ENERGY STAR rated furnace. (NUMBERS WILL BE DIFFERENT FOR HEAT PUMPS)	Reduce home heating emission by 20%	RMI, Cool Citizens, Everyday Solutions to Climate Change, http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf; Energy Star: www.energystar.gov; http://www.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12530
27		Weather seal your home	Lower heating impact by **7%** (Using national averages for home heating and weatherization)	Reduce home heating emissions by 7%	RMI, Cool Citizens, Everyday Solutions to Climate Change, http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf; Consumer Federation of America
28		Insulate your home	Lower your heating impact by **25%** (for attic (10%) and wall (15%) insulation)	Reduce home heating emissions by 25%	RMI, Cool Citizens, Everyday Solutions to Climate Change, http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf; Consumer Federation of America
29		The Golden Rule - Turn it Off!	Reduces your lighting electricity consumption by **17%; 10% of the average Seattle electric load is devoted to lighting.**	Reduce 10% of electric emissions by 17%	RMI, Cool Citizens, Everyday Solutions to Climate Change, http://www.rmi.org/images/PDFs/Climate/C02-12a_CoolCitizens.pdf; http://ec.europa.eu/environment/climat/campaign/powersaver/index_en.htm (this is a fun resource); Seattle City Light
30		Use a push mower	A typical gas-powered mower emits 80 pounds of carbon dioxide per year and produces as much pollution in one hour as driving a car 140 miles.	Reduce emissions by 80lbs.	Seattle Public Utilities
31	**Waste Reduction**	Recycle and Compost	Use national averages from EPA WARM Model: MSW Landfilled: 240 kgCO2/ton Mixed Recyclables Recycled: -500 kgCO2/ton Mixed Organics Composted: -110 kgCO2/ton	Reduce waste-related emissions by the factor relevant to either recycling or composting.	http://epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf; EPA WARM Model: http://epa.gov/climatechange/wycd/waste/calculators/Warm_Form.html
32		Do I need this?	**DNQ**	**DNQ**	**DNQ**
33		Printing - Make it a Double	Per capita US Paper consumption = 727.5 lbs annually.	1/2 GHG emissions of average household paper use	Abramouitz and Mattoon, Paper Cuts: Recovering the Paper Landscape, Worldwatch Institute, 1999.
34		Use cloth bags for grocery shopping	compare life-cycle GHG of paper bag v. cloth bag	The US EPA document "Solid Waste Management and Greenhouse Gases" provides information on embodied energy of plastic. Estimate the weight of a plastic bag, multiply by a credible number of bags saved over the lifetime of a cloth bag, and multiply by emissions factor. For example, if a cloth bag is used for 6 months, and replaces 4 regular plastic bags each week, and a plastic bag weights 50 grams, a cloth bag saves 5160 g of plastic, which is 0.01 o short tonnes of co2 per cloth bag. Numbers need to be finalized.	Devise credible protocol for calculation.
35		Make it an experience!	**DNQ**	**DNQ**	**DNQ**
36	**Civic Participation**	Get others involved!	**DNQ**	**DNQ**	**DNQ**
37		Create a neighborhood-level climate protection project!	**DNQ**	**DNQ**	**DNQ**
38		You're making changes at the personal level - what are local, regional, and state governments doing?	**DNQ**	**DNQ**	**DNQ**
39		Start or join a study circle!	**DNQ**	**DNQ**	**DNQ**
40		Invite a speaker	**DNQ**	**DNQ**	**DNQ**