CONSUMPTION, CLIMATE, ZERO WASTE AND THE GREEN NEW DEAL

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For

The National Recycling Coalition's Zero Waste Conference

Berkeley, CA March 18-19, 2020

ABSTRACT

Solutions to climate change are usually limited to alternative energy, alternative transportation, energy conservation, and related topics. This is based on contribution of carbon to the atmosphere by electrical generation, buildings, and transportation sectors. But in 2009 USEPA presented a paper at a zero waste conference in Devens, MA, showing an alternative view of carbon emissions to the atmosphere. In this systems view, EPA showed that materials management, specifically, production, transportation and use of consumer goods, packaging and food accounted for about half of carbon emissions to the atmosphere. Looked at this way, it becomes clear to professionals in the fields of waste prevention, reuse, recycling and composting, that these methods, aka Zero Waste solutions, together are a long-neglected but productive way to combat climate change. And yet, this information, this EPA pie chart, is not known by those who have been devising Green New Deals or other programs to combat climate change. The purpose of this paper is to draw the connections between consumption, climate change, zero waste and the Green New Deals that are being discussed across the US so that those who are developing and voting on them will be doing so with this critical information about carbon sources and solutions.

QUESTIONS TO ANSWER

What does the Green New Deal have to do with Zero Waste?

Where does the carbon come from?

How important to climate are upstream activities vs. downstream?

How much do zero waste strategies reduce GHG emissions?

How Climate Impact Plans started using Zero Waste elements as early as 2004 to reduce GHG emissions

Since production of goods, packaging, and food are responsible for HALF of the GHG emissions, therefore zero waste strategies should be very important in reducing GHG emissions)

Green New Deal – To Fight Climate Change (GHGs). There's No Zero Waste in the Green New Deals At ALL !! Which strategies can we use?

A WORD ON CLIMATE …

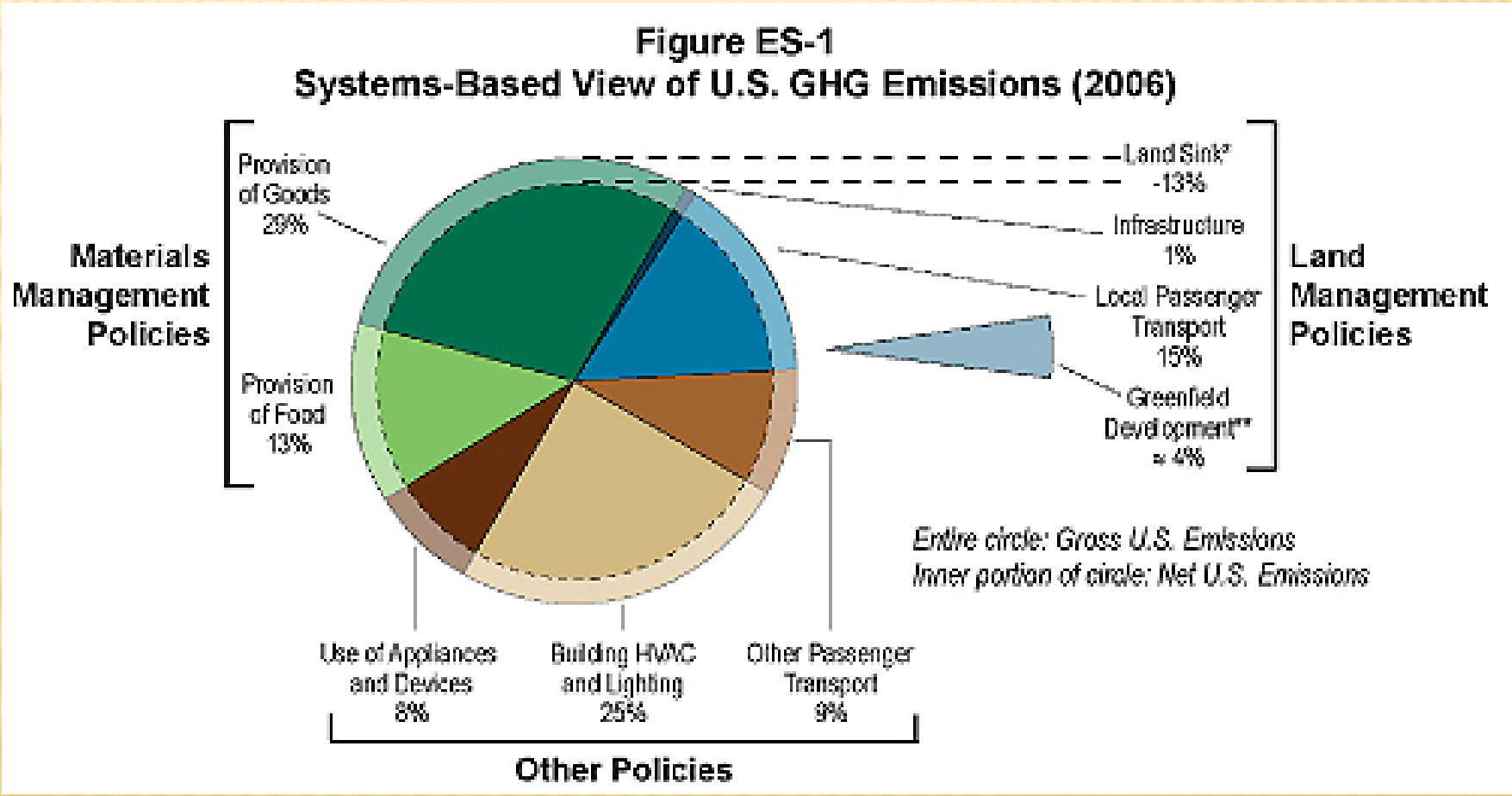
- 350 ppm ambient CO_2 had been the agreed upon limit that we couldn't exceed or we couldn't go back. (It was 280 before the industrial revolution)
- We passed 415 ppm in spring 2019 due to increased carbon emissions
- Between 2030 and 2045, NYC will have 500 year storms every 5 years

This is what that looks like →

Then there's the 1,000 year storms…

WHERE DOES THE CARBON COME FROM?

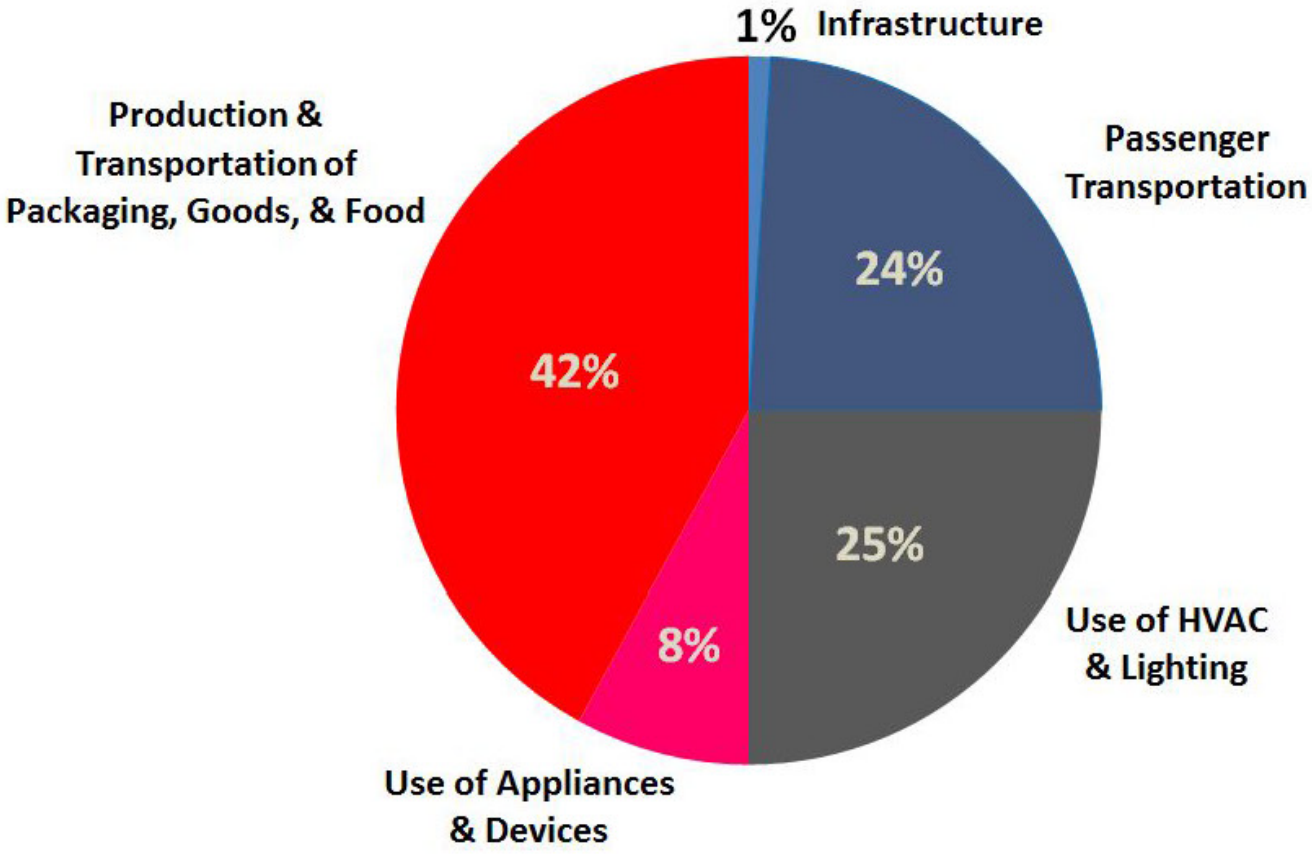
The 2006 report from the USEPA suggests that way Americans procure, produce, transport, use and dispose of goods and services — what the agency refers to as "materials and land management" — accounts for 50% of the nation's greenhouse gas emissions.



Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices, U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response, September, 2009

The Most Important Graph Re-Expressed

Systems-Based View of Greenhouse Gas Emissions (EPA, 2006)



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Re-expressed by Maggie Clarke, Ph.D., 2019

REDUCING CONSUMPTION IS KEY TO REDUCING CARBON EMISSIONS

- "For every pound a consumer throws away, there's 70 pounds of upstream waste. We've got to reduce consumption and produce our products better"[1]
- Upstream: mining, logging, refining, manufacturing, and transportation inbetween.
- Waste Prevention and Reuse are far more effective at reducing climate impacts than Recycling and Composting.

[1] "The Next Efficiency Revolution: Creating a Sustainable Materials Economy" , John Young and Aaron Sachs, Worldwatch Institute, 1994, p. 13.

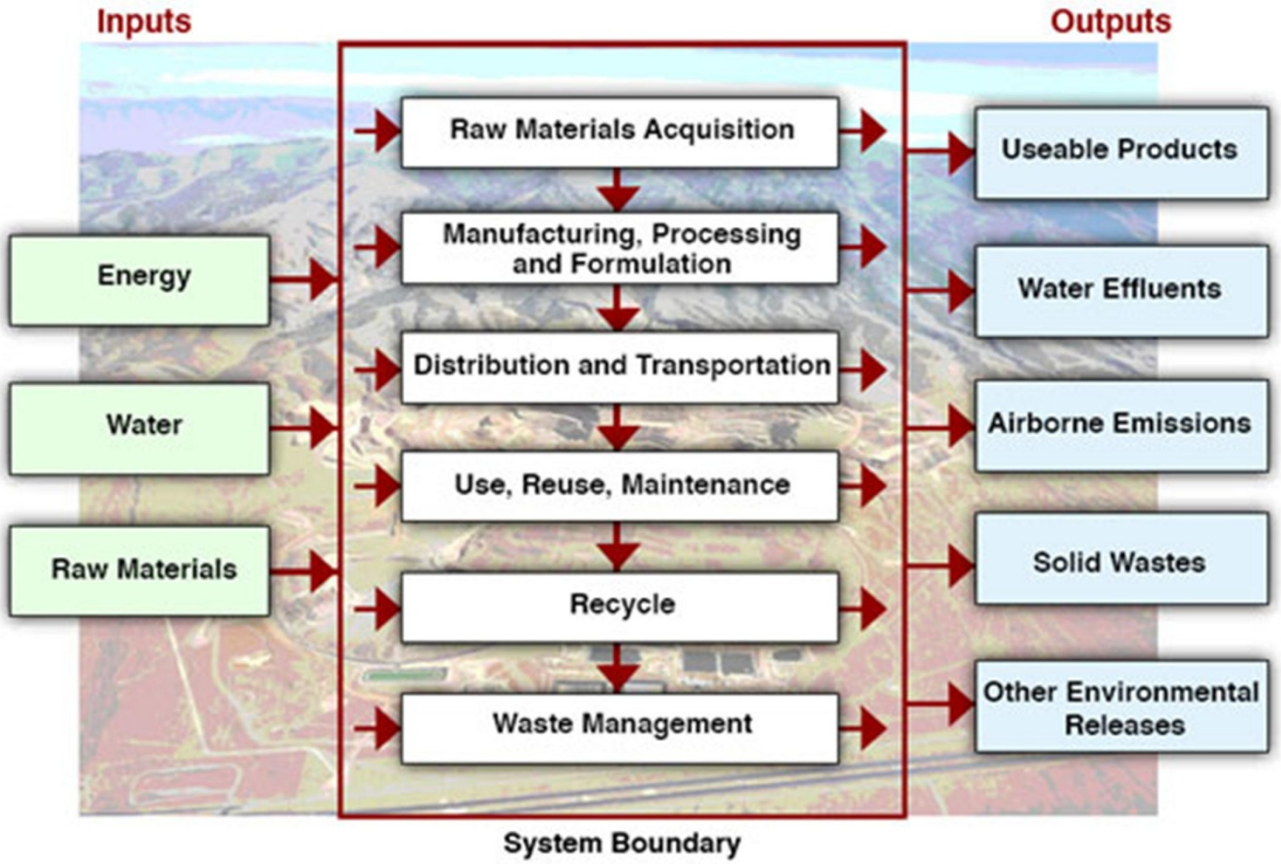
MATERIALS PRODUCTION IS A SIGNIFICANT PART OF THE CARBON FOOTPRINT

EPA recognized as far back as 1990 that the largest impact of waste is in materials production as compared with downstream (recycling and disposal) in the life-cycle of waste. EPA realized that reducing the demand for consumer goods, packaging and food would reduce emissions generated in the extraction of materials (e.g., logging and mining), refining and manufacturing processes, and transportation of materials between these steps.

Reducing the use of paper and wood products allows the trees to remain as carbon sinks in the forests.

Reducing landfilling and incineration by using zero waste methods like recycling reduces carbon emissions to the atmosphere.

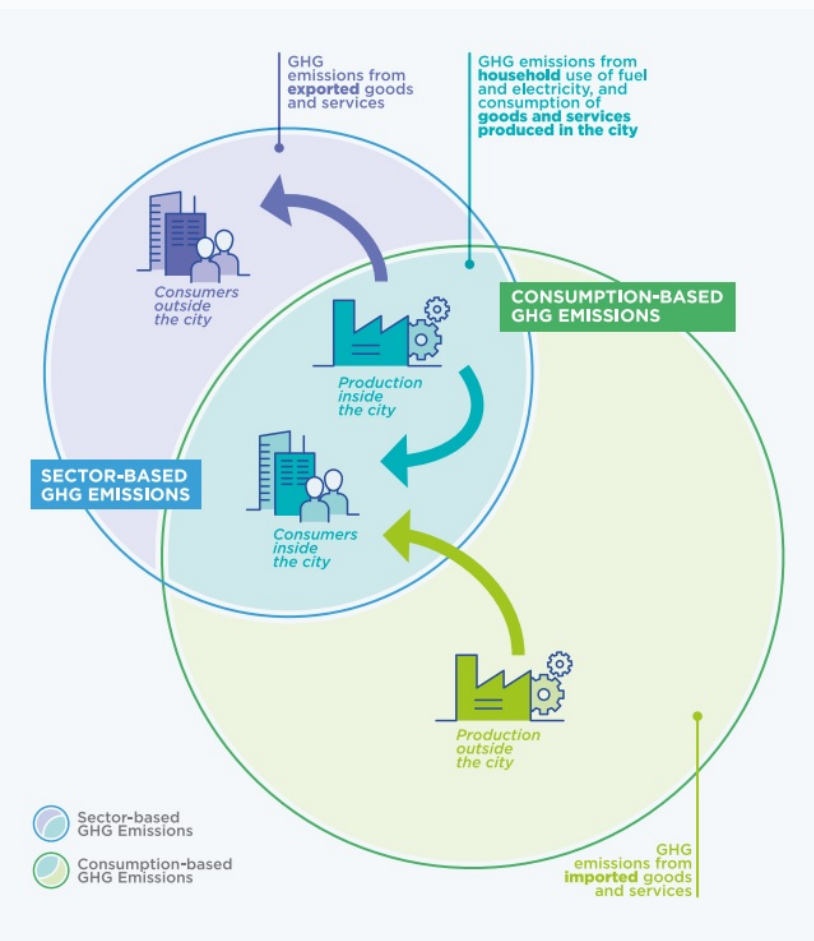
Life cycle Assessment (LCA) Overview



Sustainable Facilities Tool, General Services Administration. https://sftool.gov/plan/400/life-cycle-assessment-lca-overview

PROPER ACCOUNTING FOR GENERATION OF GHGs

Consumption-based GHG emissions accounting properly assess emissions to those who demand products, packaging and food



Source: Consumption based GHG emissions of C40 Cities Climate Leadership Group, Leeds, UK March 2018

CLIMATE ACTION PLANS

As far back as 2004, cities like San Francisco have included zero waste programs as part of their citywide Climate Action Plans, which also include alternative energy projects like wind energy and solar energy, and energy conservation. There are many municipal zero waste plans including zero waste.

EPA advises state & local jurisdictions on writing Climate Action Plans & has plan listing on website: "A climate change action plan lays out a strategy, including specific policy recommendations, that a local government will use to address climate change & reduce its greenhouse gas emissions"

SAN FRANCISCO'S 2004 PLAN INCLUDED ZERO WASTE

- EPA advises state and local jurisdictions on writing Climate Action Plans and has a listing of plans on its website:
- "A climate change action plan lays out a strategy, including specific policy recommendations, that a local government will use to address climate change and reduce its greenhouse gas (GHG) emissions" San Francisco's 2004 Climate Action Plan includes sections detailing zero waste measures accomplished and planned.
- These represent 302,000 tons of CO_2 reduced from a total of 2,614,000 for all categories of actions (also including transportation, energy efficiency, and renewable energy).

Solid Waste Action Categories	Estimated CO_2 Reduction (tons)
A. Increase Residential Recycling and Composting	70,000
B. Increase Commercial Recycling and Composting	109,000
C. Expand Construction and Demolition Debris Recycling	57,000
D. Support Alternate Collection Methods for Recyclable Materials	66,000
E. Promote Source Reduction, Reuse and Other Waste Reduction[85]	–
F. Expand Municipal Programs[86]	–
Total	**302,000**

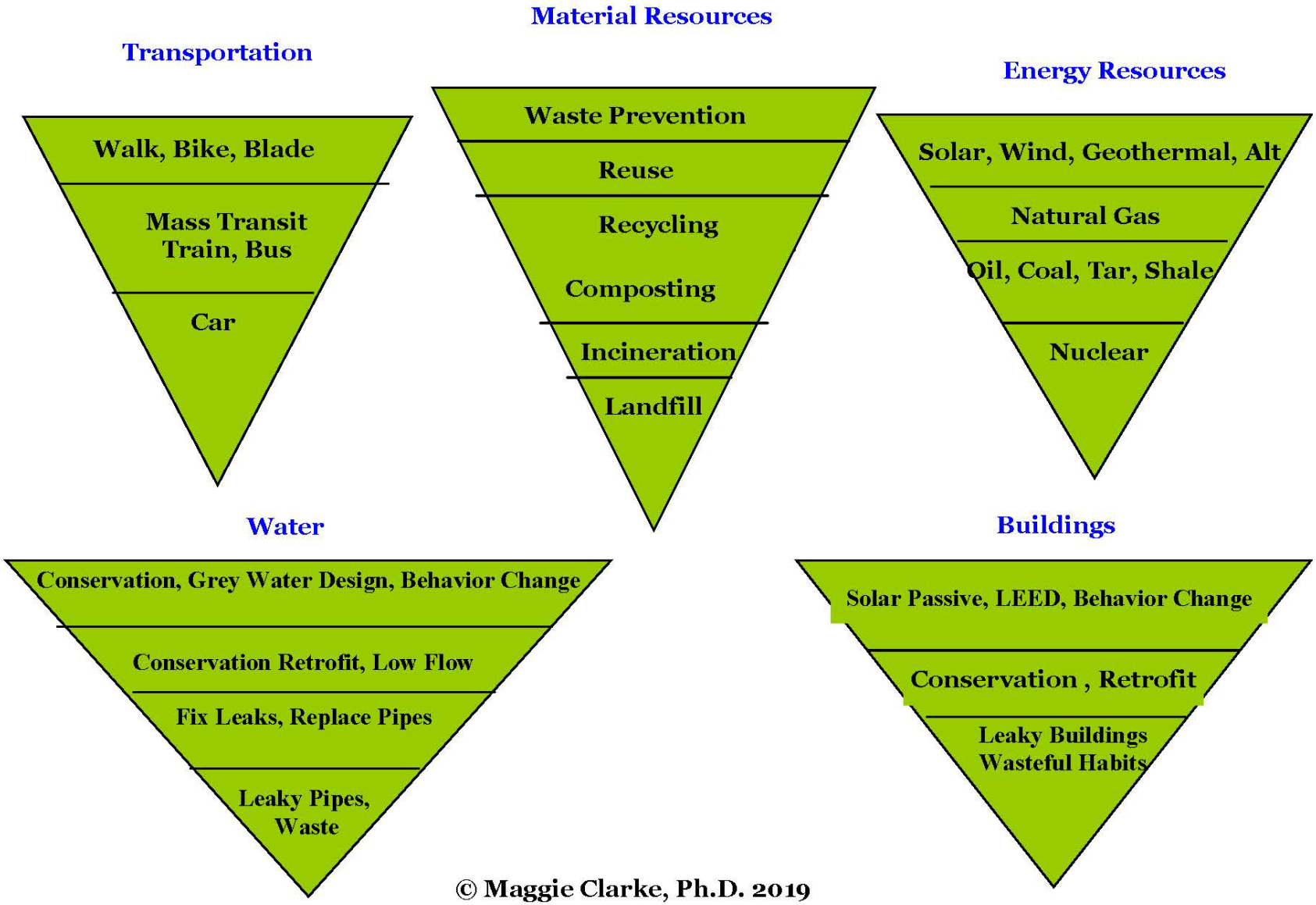
GREEN NEW DEAL

- House Resolution 109
- Says the US creates 20% of GHG –ignoring that our consumer demand has us offshoring even more
- Correct injustices, like original New Deal –

  Creates jobs, vulnerable, color, migrant, rural, low-income, disabilities, youth, etc
- New jobs in large-scale investments: zero-emission technologies, sustainable infrastructure, new energy grid, high speed rail, clean manufacturing, eliminate pollution and GHG in agriculture

Zero Waste in the Context of Sustainability

All Sectors have hierarchies, lowest impact, most jobs on top



JOB BENEFITS OF ZERO WASTE

The Green New Deal legislation also refers back to the original New Deal, which prioritized job creation.

More jobs are created at the top of sustainability hierarchies than at the bottom.

Repair and reuse of products creates orders of magnitude more local jobs than landfilling and incineration do on a per ton basis.

Table 7: Job creation in the U.S. from reuse and recycling versus disposal

Type of Operation	Jobs per 10,000 TPY
Product Reuse	
Computer Reuse	233
Textile Reclamation	93
Misc. Durables Reuse	69
Wooden Pallet Repair	31
Recycling-based Manufacturers	
Paper Mills	19
Glass Product Manufacturers	29
Plastic Product Manufacturers	102
Conventional Materials Recovery Facilities	**11**
Composting	**4**
Landfill and Incineration	**1**

TPY = tonnes per year
Note: Figures are based on interviews with selected facilities around the U.S.
Source: Brenda Platt and Neil Seldman, *Wasting and Recycling in the United States 2000* (GrassRoots Recycling Network, Athens, Georgia, U.S.: 2000), p. 27.

FLAWS IN GREEN NEW DEAL:

- Nuclear power is not off the table!!!
- No specific recommendations like cap and trade or carbon taxes
- the most glaring omission in the GND is its lack of any climate solutions employing ZERO WASTE strategies!

Successfully challenging mindless, unfettered, virgin-material consumerism and economic growth that has adverse environmental externalities are the final third rail we have to conquer in order for the environmental movement to mature

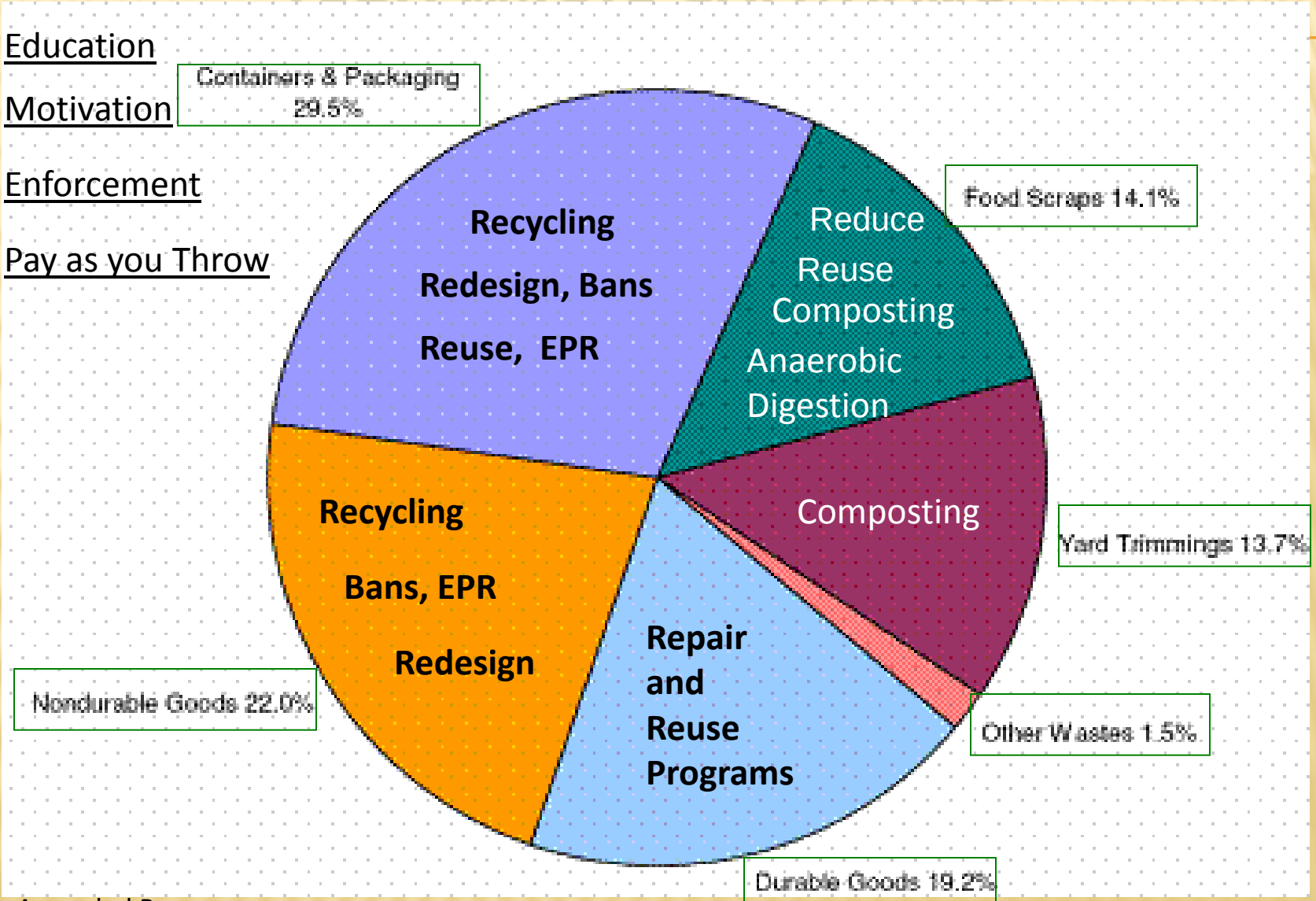
ZERO WASTE SOLUTIONS

Education

Motivation

Enforcement

Pay as you Throw



Amended By
Maggie Clarke, Ph.D.

Source: Municipal Solid Waste in the United States, 2009 Facts and Figures, USEPA Office of Solid Waste, EPA530-R-10-012, December 2010

CONCLUSIONS & RECOMMENDATIONS

- Since sustainable materials management addresses 42% of the carbon emissions problem, zero waste solutions and the circular economy should become high priority solutions for any Green New Deal legislation, program budgets and statewide plans with the purpose of reducing climate change.
- State and local budgets for zero waste solutions are typically starved while disposal budgets dominate.
- It is a mistake that Zero Waste solutions are not emphasized in Green New Deal legislation. This all must change to take advantage of the serious reductions to climate change that would occur if zero waste programs, legislation, billing systems like Pay as you throw, improved education and enforcement were to be adequately funded and prioritized in the state.
- The pie chart showing a goods-, packaging-, and food-based view of our "waste" stream, along with the zero waste solutions that each slice of the pie can utilize. Despite the fact that much of these materials are disposed in incinerators and landfills, most can be prevented, reused, recycled or composted with proper programs and legislative support.
- The best solution is a plan for 2030 with milestones laid out in each year addressing all slices of the pie with programs and legislation, fully paid for, and which add up to 90% reduction/diversion.

BOTTOM LINE –
THE GREEN NEW DEALS
MUST HAVE ZERO WASTE INITIATIVES!

1. Environmental groups should be aware and spread the word: Create Outreach: website, social, print
2. Legislators should understand the link between carbon emissions and zero waste solutions
3. Legislators must be encouraged to include Zero Waste initiatives in the Green New Deals on federal, state and local levels.

   There may still be time.

MSWAB REDUCE, REUSE, AND REPAIR GRANT

For instructions, application – will be available soon:

http://www.manhattanswab.org/reduce-reuse-repair-grant

Grants of up to $2,000 will be awarded to groups and researchers to start new reduce, reuse, or repair projects, undertake related research projects leading to replicable reduce, reuse or repair models taking place in New York City.

Since 2017, 33 grants for $50,576 have been awarded for reduce, reuse and repair projects in New York City.

Questions?

For more information and copies of papers on zero waste, climate, behavior change, citizen's alternative solid waste planning and more:

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