A 10-Year Bridge Strategy to Build a

Zero Waste Community

Building
Zero Waste Communities
EPA Webinar
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Who is Eco-Cycle

- since 1976
- 80 employees
- $5 million/year
- 50,000 tons/year
- “Zero Waste Social Enterprise”

eco·cycle®
Working to Build Zero Waste Communities

KIDS


TRUCKS

Zero Waste going mainstream

"In the broad history of waste management, it might just be a true sea change moment. The National Solid Wastes Management Association (NSWMA) came out with a statement supporting the concept of zero waste."

Waste News, May 2010

But do we share the same vision?

BioCycle Magazine…July 2011

"Zero Landfill Is Not Zero Waste"

July 2011, Vol. 52, No. 7, p. 44
Commentary

BIOCYCLE®

The presentation today

1) What is Zero Waste ?
2) Why a 10-year plan ?
3) How do we get to 90% recycling levels ?
4) What to do with “whatever’s left” ?

What is Zero Waste ?

ZW is a total commitment to:

- **Maximizing downstream resource recovery** (recycling and composting);
- **Maximizing mid-stream longevity** (reuse, repair and durable design);
- **Maximizing upstream waste reduction** (Product Redesign, ZW Purchasing, Producer Responsibility and New Rules)

What is Zero Waste ?

- ZW is not …
  - ZW is not "integrated" solid waste management (ISWM)- ZW is a total commitment to pursue zero;
  - ZW does not require getting to zero;

    (ZW Int'l Alliance accepts 90% recovery for now);
  - ZW does not accept current waste-to-energy technologies (except anaerobic digestion) or current landfilling practices.

"The environmental, public health and economic *externalities* from burying and burning waste dictate that waste management is a

social issue first, and a market issue second."

The Public Policy Shift upon which we build

Why a 10-year plan? 4 key reasons

1) **Prevent expensive mistakes**
   - $500 million for a new incinerator breaks the bank (Frederick, MD)

2) **Physical infrastructure shift**
   - Six facilities needed to reach 90% recovery

Why a 10-year plan? 4 key reasons

3) Regulatory market changes

- "New rules" for the marketplace so the cleanest companies *win the profits.*

4) Cultural behavior shift

- ALL discards sorted at the source into recycling, composting and "whatever's left."

The ZW "Big 6" Facilities
Public Ownership/Private Operation

1) Materials recovery facility (MRF)
2) Organics recovery facility (ORF)
3) Construction, Deconstruction & Demolition facility (CD&D)
4) Center for Hard-to-Recycle Materials (CHaRM)
5) Reuse & Repair facilities (R&R)
6) Residual "sort, stabilize & bury" (ZW Transfer Station)

Center for Hard-to-Recycle Materials (CHaRM)

Non-traditional recycling center

E-scrap **Styrofoam**
Plastic bags Books
Big Durables plastics
Textiles and shoes
Toilets and sinks
Bicycles and parts
Cooking oil HHW
YOGA MATS!

Zero Waste Transfer Station (ZWTS)

Mixed-waste Sort, Stabilize & Transfer facility

"MRBT-to-landfill system"

Sorting Residuals in Italy & Partnering with Industry

- **Capannori,** Italy – ZW Research Center
  - ✓ First target – **coffee capsules**
  - ✓ Dialogue with Lavazza, "Italy's favorite coffee"

ZERO WASTE EUROPE

If you are not for Zero Waste, how much waste are you for?

Policies, Programs, Incentives Timeline & Strategies

To Divert 90%

&

Reduce Total Discard Stream

Years 1-4: Access to services →50% recovery

- Plan & Build the Big Six Facilities!
- ZW resolution or goal
- Universal curbside recycling
- Organics collection from SFUs
- PAYT rates

Years 1-4: Access to services →50% recovery

- C,D&D recycling deposit for building permit
- Government leads by example
- Zero Waste events
- Fund community education: $2/pp/year

Years 5-8: Public participation

→70% recovery

- "Separated Waste" for recycling and composting required in Residential and high organic generators.
- Universal Organics for MFUs and ICI
- Biweekly trash service, weekly organics
- C,D&D recovery mandates increase

Years 5-8: Public participation

→70% recovery

- Product fees/taxes
- Product Stewardship: electronics, paint, mercury products
- Community education fund: $3/pp/year

Years 9-10: Whatever's Left

→90% recovery

- Aggressive EPR (packaging, carpet, mattresses)
- Disposal bans
- Self-haul loads
- Source separation enforcement

Years 9-10: Whatever's Left

→90% recovery

- Waste reduction
- Zero Waste labeling
- Economic signals (purchasing!)
- Hammer down on mixed waste

Handling “whatever’s left”

What to do with what’s left?

Don’t let the “tail” wag the dog!

What to do with the residue?

1) Assume less material each year
2) Low financial investment
3) Minimize environmental hazards
4) Must bio-stabilize mixed waste
5) Identify remaining materials and source
6) **"Rates-and-Dates approach with teeth"** to reducing amount of stuff in the ZWTS.

MRBT - to - Landfill
(mechanical recovery, biological treatment)

1) "Now we know" 70% recycling rates are real
2) WTE investment for only 30% of waste stream?
   - ✓ very expensive, requires put-or-pay contracts
   - ✓ more toxic releases than dry tomb inert landfill
3) Much cheaper and cleaner to “sort for recyclables, stabilize the biowaste, and bury”
4) MBT-to-IRF = pretreatment before landfilling in an "inert residue fill"

Waste-To-Energy: Mass Burn or Conversion Techs?

- **Wall Street knows…**
  - ✓ No new WTE plants since 1995
  - ✓ High Risk: "put or pay contracts"
  - ✓ Mass-Burn only market ready tech

  - ❑ **"Conversion technologies"**
    No full scale … only pilots
    (pyrolysis, plasma, gasification)

- **"Can co-exist with Zero Waste?!"**
  - ✓ "solid-waste statistics show a 'disturbing trend' (down) … "We don't want to turn off what we've turned on...but **we're also not promoting recycling** in a big way right now."

--Lake County, FL in Orlando Sentinel, Dec. 2009

We need to build Zero Waste Parks at the entrance to every landfill

No new landfills or incinerators for 100 years!

Action Needed Now: Next steps for all large cities

1. Organics out of landfills
2. Separation of waste required
3. Local climate action plans and jobs

#1. Organics out

- ✓ Biodegradables in a landfill = bad
- ✓ Prioritize prevention of landfill gas over capture
- ✓ Flaring or LFGTE should be required, not subsidized

#2. Separated Waste Required

"We'd be at 90% if everyone participated fully." Jack Macy, SF

Glass and Plastic Bottles
Aluminum and Steel Cans
4%

Recycled Paper
21%

Food Scraps
20%

Plant Trimmings
5%

Compostable Paper
& Fiber 10%

Other
15%

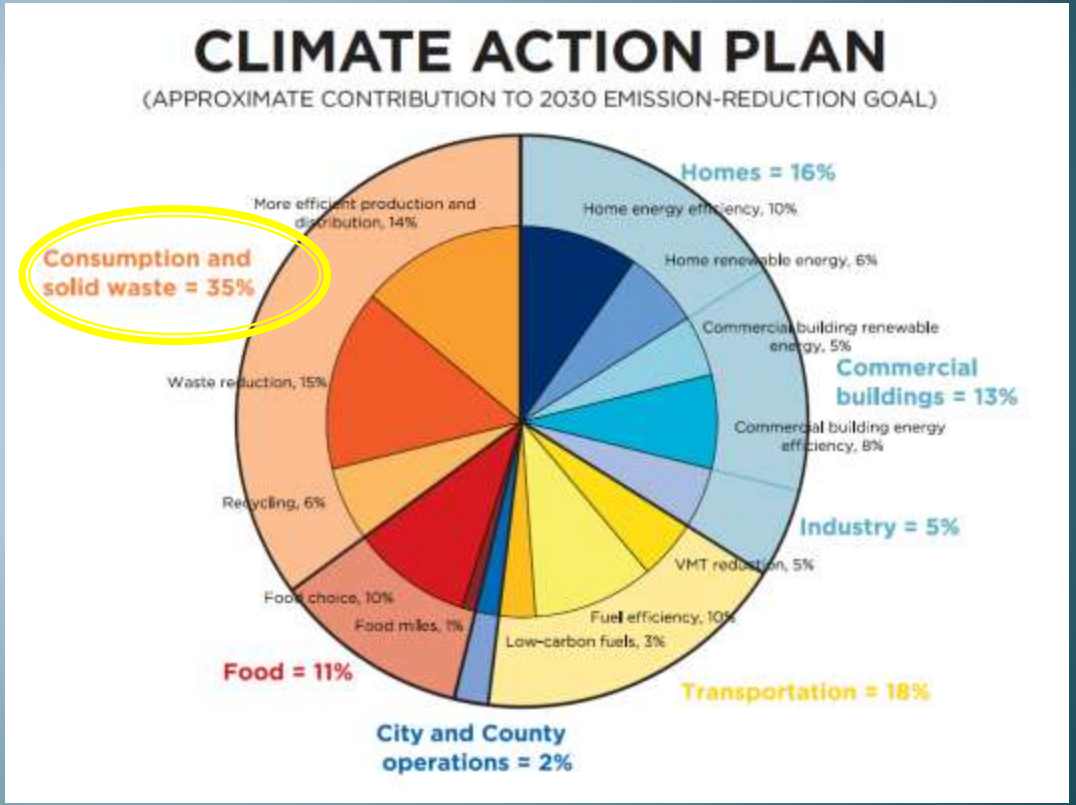
Construction and
Demolition Waste
25%

Slide courtesy of Jack Macy, SF Dept. of Environment.

#3. Waste and climate: Local Perspective

- Fastest
- Cheapest
- Proven

GHG reduction strategy



Portland Climate Action Plan, 2009.

In Closing … why bother?
Jobs

- **1.5 million new jobs**
  if 75% recycling by 2030
- *ZW Millionaires* tapping the $11 Billion/yr buried
- College MBA's love this new challenge

Eco-Cycle custom-design Commercial organics truck

More Jobs, Less Pollution:
Growing the Recycling Economy in the U.S., 2011

In Closing … why bother? It's cheaper!

- 121 community curbside 3-bin programs
- 55 Canadian, 66 USA

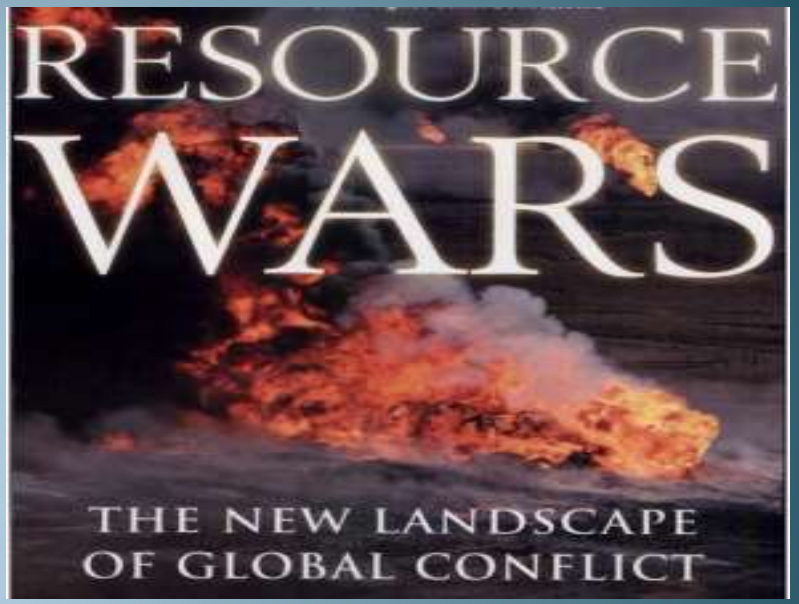
Avg. Collection Costs (3-sort)	= $22/HH/month
Avg. Tip Fee Recycling	= you get paid !!
Avg. Tip Fee Composting	= $44/ton
Avg. Tip Fee Landfill	= $61/ton
Avg. Tip Fee Incinerator	= $92/ton

Beyond Recycling: Composting Food Scraps and Soiled Paper

Anderson, Liss, Sherman, 2010

In Closing … why bother?
World Peace

"The roots of conflict in the 21st Century will be to gain access to natural resources."



On our One Earth
with exploding populations and shrinking resources,
we have an *ethical and moral responsibility*
to our children, and the children of all living things
to ***stop wasting !***

Make Compost, Not War

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