

**PAY AS YOU THROW,
RECYCLING STRATEGIES,
AND TOXICS IN PACKAGING**

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NH DES Training

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PAY AS YOU THROW - PAYT

AKA

**Unit-Based Pricing,
Variable Rate Pricing,
User Pay, or SMART
(Save Money and
Reduce Trash)**

OVERVIEW

- Incorporates : “polluter pays principle” & “shared responsibility”
 - ✓ Waste generators are charged for their waste generation
- Its up to the individual to recycle/compost
- Optimal system: measures the amount of individual waste collected & charges the waste producer a fee = cost of generation

GARBAGE AS A UTILITY

- Trash as “sacred ground” for “free” collection or a single “all you can dispose of” rate
- Waste vs. electricity use, sewer usage, etc.
- Few would contemplate paying for electricity or water use out of property taxes or even paying a flat rate for “all you can use” electricity or water

IMPACT OF “FREE OR FLAT RATE GARBAGE”

- Relatively low rate of recycling
- Impact on municipal/town budgets
- Amounts to an unfair tax subsidy
- No “price signal”
 - ✓ Generators don’t know the actual costs of disposal
 - ✓ Generators usually pay little attention to the quantity of waste produced
- No incentive to reduce, reuse, recycle, or compost

BENEFITS OF PAY AS YOU THROW

- Gives residents control of disposal costs
- “Fairer system”
 - ✓ Disposal as a utility
 - ✓ Generators charged for the service they use
- Reduces disposal costs for communities



PAYT BENEFITS, cont.

- Reduces waste disposal costs
- Preserves tax revenue for other uses
- Allows for expansion of services, new equipment purchases, new staff
- Reduces or eliminates need to raise taxes or fees due to waste disposal

PAYT BENEFITS, cont.

- Waste reduction, increased diversion, improved environmental quality
 - ✓ On average, results in a 20-45% decrease in waste generation
 - ✓ Doubling of recycling rates
- Preserves shrinking landfill space/forestalls need for more capacity
- Systems are flexible
 - ✓ Can be structured to fit local governments, haulers, customer needs

CONS OF PAYT

- Opposition to Change
 - ✓ Outreach & education of residents
 - ✓ Requires residents to be aware of guidelines, how the system works, & their responsibilities
- Winners and Losers
 - ✓ Large families & residents on fixed incomes
 - ✓ Low income and/or elderly PAYT program discounts

CONS OF PAYT, cont.

- Need adequate funding for supervision, billing, enforcement, outreach, & education
- Dumping and Collection of Unmarked MSW
 - ✓ Illegal dumping – roadside or in commercial dumpsters
 - ✓ Typically is limited or is short-term
 - ✓ Have regulations, monitoring programs, and enforcement in place prior to implementing PAYT
- Rental units & apartments

PAYT AROUND THE COUNTRY

- Only two states mandate PAYT: Vermont & Minnesota
- 7,100 communities in the US
 - ✓ Massachusetts - 59%+
 - ✓ Iowa - 56%+
 - ✓ California - 50%
 - ✓ New York State - 42%



PAYT IMPLEMENTATION

- Measure waste by weight or volume
- Volume-based models use a range of “units” for identifying how charges will be levied
 - ✓ Bags, tags, containers RFID

DESIGN VARIABILITY

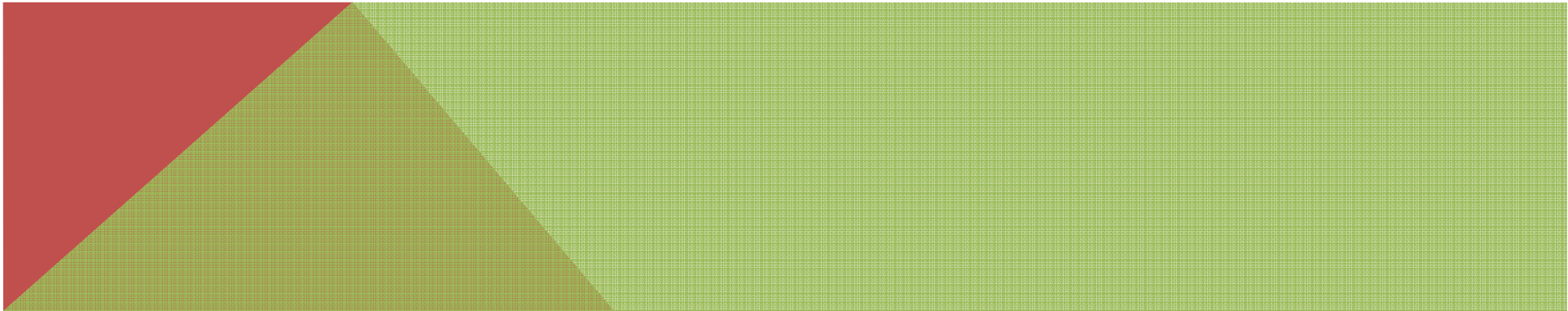
- “Full-unit pricing”
 - ✓ Users pay for all the garbage they dispose
- “Partial-unit pricing”
 - ✓ No charge for disposal of set base amount
 - ✓ Additional bags or containers paid for by the resident
- “Variable-rate pricing”
 - ✓ Residents choose to rent a container or purchase bags
 - ✓ Price corresponds to the volume

ECONOMIC, ORGANIZATIONAL
AND TECHNOLOGICAL ISSUES
HAVE TO BE INTEGRATED IN AN
EFFICIENT PAYT MODEL DESIGN



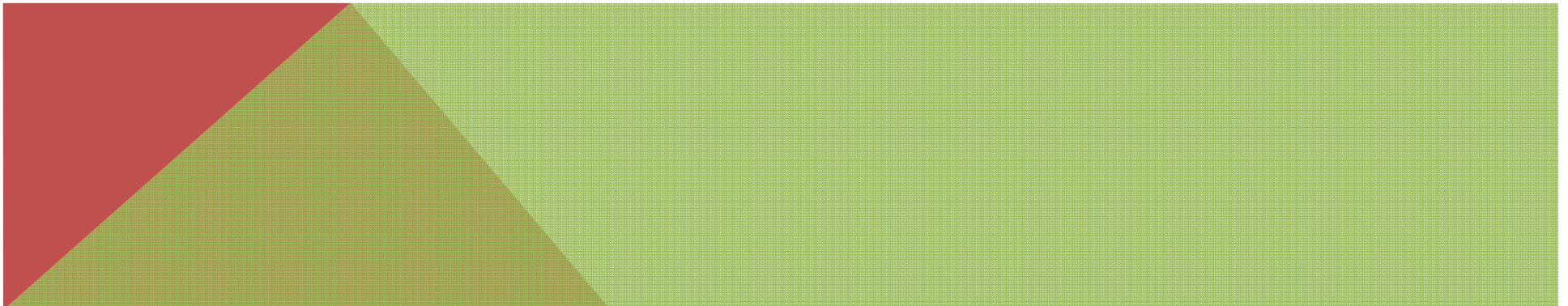
BAG SYSTEMS

- Imprinted trash bags
 - ✓ Varying sizes 20-35 gallon bags
- Price covers bag cost & part or all of the cost of hauling/disposal
- Drop-off or curbside collection
- Avoids need for billing



NEW

PAYT
BAG
RETAILER



STICKERS

- Stickers are purchased to affix on specific sized bags or containers
- Price of each sticker covers the cost of the sticker & part or all of the cost of hauling and disposal
- Applicable for curbside collection or drop-off
- Avoids need for billing

TRASH TAG

- All trash must be in a bag with a tag or it will not be picked up
- Maximum weight: 30 pounds
- Recycling will reduce your need for trash tags



No. 000001

PER BAG PUNCH CARDS

- Residents purchase punch cards
- Price is based on the number of dots or bags offered on the card
- Drop-off facility operators punch the dots for each bag disposed
- Not appropriate for curbside collection
- Avoids need for billing

CARTS OR CANS

- Increasing charge for larger containers or collection of multiple containers of same size
- Haulers may charge flat fee per cart to defray embedded hauling cost, but must add unit-based disposal charge per container
- Used primarily for curbside collection
- Requires billing system



OLYMPIA, WASHINGTON

- **20-gallon:** \$20.82 w/recycling | \$20.82 w/o
- **35-gallon:** \$35.96 w/recycling | \$45.10 w/o
- **65-gallon:** \$49.10 w/recycling | \$61.54 w/o
- **95-gallon:** \$85.08 w/recycling | \$106.60 w/o

HYBRID

- Residents receive a smaller limited volume of service for flat fee or “no cost”
- Additional containers or bags incur a cost
- Allows for phase in of PAYT into existing town or municipal system

WEIGHT-BASED SYSTEMS

- Containers, bags, or vehicles are weighed
- Charged on weight of trash disposed
- Drop-off or curbside programs
- Requires billing or direct payment to drop-off center operators

IMPLEMENTATION STEPS

- Prepare & adopt an ordinance that requires residents to use the system & makes any other form of disposal illegal
 - ✓ Include an ordinance setting forth the rates to be charged for collection/disposal services
 - ✓ Adopt an ordinance requiring all haulers & facilities in the jurisdiction to utilize a PAYT system
- Estimate the total amount of waste that will be generated once PAYT is fully established

IMPLEMENTATION STEPS, cont.

- Decide the system: bags, stickers, containers, hybrid
- Identify additional collection services to be offered – e.g., bulky item collection
- Consider whether or not recycling, composting & other waste reduction programs should be started or enhanced

IMPLEMENTATION STEPS, cont.

- Consider implementing special procedures for residents of multi-family residences
- Consideration of special procedures for elderly & low-income households
- Estimate both system start-up & ongoing costs
- Develop a preliminary PAYT pricing rate structure

PRICING OF UNIT-BASED SYSTEM

- Per unit fee should cover the cost of disposal for that unit of solid waste
 - ✓ Equipment, curbside collection, hauling to landfill, disposal tip fee
- Include any solid waste district/municipal surcharge and state franchise fee
- May be priced to cover all or part of collection/processing of recyclables and/or organics diversion

PRICING, cont.

- Price could also cover staffing costs (transfer station attendant, hauler employees, other municipal waste employees)
- Alternatively flat fee charged to residents or property taxes may cover employee and equipment costs relating to solid waste management

EDUCATION/PROMOTION

- Elected officials
- The public
- NOT an added cost – just changes the way residents pay for waste services
- Transparency
 - ✓ Benefits
 - ✓ Garbage as a utility

EDUCATION/PROMOTION, cont.

- Users must be made aware of:
 - ✓ Collection schedules
 - ✓ Rates
 - ✓ Billing cycles
 - ✓ Penalties for noncompliance
 - ✓ Locations for purchasing bags or tags/stickers or distribution of carts
- Methods
 - ✓ Press releases, PSA's, newsletters, direct mailings, flyers, utility bill inserts, public speaking engagements

COMMUNICATING THE TRANSITION

- Public perception that the fee or bag cost is a tax
- Adverse effects on low-income households
- Increases illegal dumping
- Higher administration costs

BUILDING PUBLIC SUPPORT

- Sell the program to Decision Makers
 - ✓ Briefing documents that analyze costs; address potential concerns
 - ✓ Develop program options that allow choice

BUILDING PUBLIC SUPPORT, cont.

- Gather public input
- Educate the public—address concerns, misperceptions
- Provide program specifics
- Explain the costs that go into the fee systems

BUYING/DISTRIBUTING CONTAINERS/BAGS

- Decide - type, size, design of bags, stickers, or containers
- Contact vendors for price quotes & other pertinent information
- If bags or tags/stickers are selected, arrange with local retailers & government offices for distribution

BUYING AND DISTRIBUTING, cont.

- If cans are selected, plan & implement a delivery system, locate place for storing excess cans
- Consideration for can repair/maintenance
- Starting or expanding recycling programs

ADMINISTRATION

- Train existing staff/hiring new employees
- Set up a new billing system, if necessary
- Arrange for ongoing sales of bags, stickers, containers
- Process for handling customer questions & complaints

START-UP COSTS

- Media/public education campaigns
- Educate/train collection/administrative staff
- Purchase of bags, stickers, or containers
- Purchase collection vehicles, equipment
 - ✓ If needed
- Billing software

ONGOING COSTS

- Salaries/benefits of employees
- Landfill tipping fees
- Replacement containers/bags, stickers
- Fuel, vehicle maintenance, utilities
- Public outreach

MONITORING/EVALUATING

- Participation & waste reduction rates
- Cost & revenue data analyses
- Customer surveys
- Analyzing problems & issues

PAYT “ADD-ONS”

- Establish full cost accounting & enterprise funds
- Complementary programs
 - ✓ Christmas tree, food waste composting
 - ✓ Special recycling events, HHW programs
- Employ qualified personnel to enforce anti-litter & illegal dumping laws

PAYT IN NEW HAMPSHIRE

- 26% of residents live in PAYT communities
- Lyman (Population 533)
- Piermont (Population 709)
- Tilton (Population 3,500)

PAYT IN NEW HAMPSHIRE, cont.

- Somersworth (Population 11,766) – started PAYT in 1992
- Concord (Population 42,904) – started PAYT in 2009
- Manchester (Population 110,506)

PAYT SUCCESS STORIES

- Boulder, Colorado implemented its first PAYT program in 2011 and realized a 33% increase in recycling & 25% reduction in garbage costs
- San Jose & Seattle successfully included multifamily buildings in their PAYT programs & offer reduced-rate services for low-income households

PAYT SUCCESS STORIES, cont.

- Athens, Georgia phased in PAYT over 18-months
 - ✓ Allowed for slow changes of waste collection payments- simultaneous decreasing taxes & increasing a charge that appeared initially on residents' municipal water bill
- San Jose, California conducted extensive public surveys & engagement through the program design phase
 - ✓ Less than a year after program launch, 80% of residents were satisfied with it; 90% after 3 years

PAYT SUCCESS STORIES, cont.

- Worcester, MA - \$94.5 million financial impact
 - ✓ \$46.8 million in revenue, \$26.3 million in operational savings & \$21.4 million in disposal savings (1993 and 2014)
- An EPA study focusing on New England found a 49 percent reduction in the amount of waste generated in 228 PAYT communities



RECYCLING SOLUTIONS

ENSURE EASY ACCESS TO RECYCLING

- Curbside
- Convenient Drop-off locations
 - ✓ Located in places typically frequented
 - ✓ Within a reasonable travel distance
 - ✓ Sites accept multiple items
- Special collections
- Consistent/sufficient funding for recycling

EASY ACCESS, cont.

- All residents have the opportunity to recycle & compost at home, work, school, special event, & public places
- Recycling (& composting) services are at least as convenient as disposal
- Easy access to information & programs about waste reduction, reuse, recycling, & composting

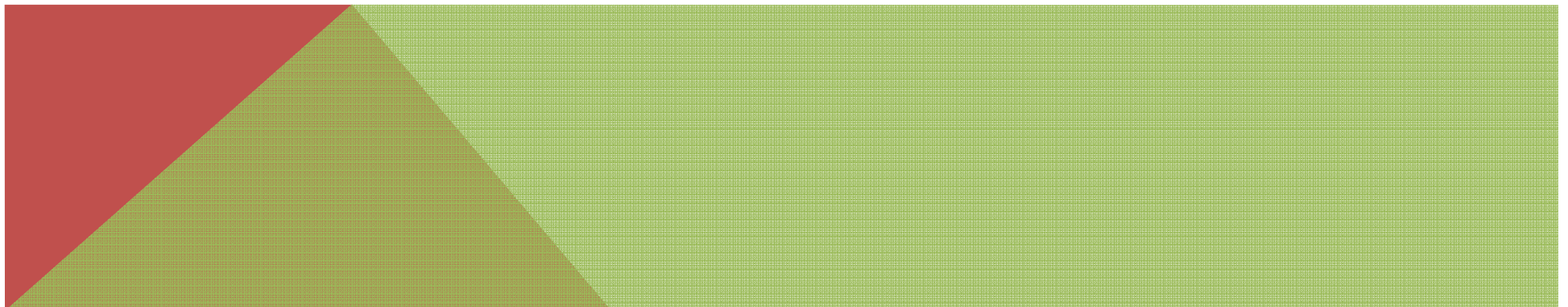
INCENTIVES

- Incentives & policies that reward & foster reduction, reuse, & diversion over disposal
- Incentives & policies that reward & foster the use of less toxic materials in products/services & promote proper disposal

INCENTIVES, cont.

- Coupons & Prizes
 - ✓ Work with businesses to offer prizes or discounts to recognize “outstanding” recycling
 - ✓ “Get your hands Green” – Green rewards, Be Green recognition, etc.
 - ✓ RecycleBank
- *Make financial sense*
 - ✓ PAYT
 - ✓ Higher trash disposal fees
 - ✓ Lower or no recycling/organics collection fees

OLYMPIA, WASHINGTON



DROP OFF LOCATIONS OR EVENTS

- Reuse, Exchange, or Swap
 - ✓ “Sheds” or events
- Repair cafés
- HHW Collection Sites/Events
 - ✓ HHW or paint swaps
- Batteries & fluorescent bulbs drop-offs

DROP OFF LOCATIONS OR EVENTS

- Textiles reuse/recycling
- Paper shredding
- Hard to recycle collections
- Bulky plastics recycling/swaps

Reuse or Swap Sheds







Toy Exchange or Swap





RECYCLING BINS IN PUBLIC SPACES

- Makes recycling more visible
- Sets an example
- Leverage existing core services to cover costs

BETTER COMMUNICATION

- Communicate with the public
 - ✓ Goals, benefits, program updates, changes, metrics of success
- Communicate elected officials
 - ✓ Statistics, benefits, success, invite input, appreciate outreach & program endorsements
- Reinforce Recycle Right or Recycling IQ training
- Promote buy recycled to help improve markets & show what materials are made into

COMMUNICATION, Cont.

- Use simple, direct language
 - ✓ Bullet & bold important information
 - ✓ Images
- Use a standardized recycling guide
 - ✓ Include a list of acceptable materials, how to recycle right, recycling tips
 - ✓ Provide contact information for missed pick-ups; bulky item pick-up, etc.

COMMUNICATION TOOLS

- Make your website effective!
 - ✓ Link directly from the municipal home page
 - ✓ Clear, accurate, & concise information
 - ✓ Make sure it is updated regularly!
- Targeted radio, TV commercials
 - ✓ Get a YouTube channel & use it for “how to” videos

COMMUNICATION TOOLS, cont.

- Use social media: Facebook, Twitter, Instagram
 - ✓ Update regularly
 - ✓ Use effectively for announcements, program updates, etc.
- Use community newspapers & newsletters
 - ✓ announce program success, updates, etc.
- Form a citizens solid waste/sustainability advisory committee

CONSIDER PSYCHOLOGY & BRANDING

- Biggest barriers to recycling:
 - ✓ Convenience, confusion about recycling rules; potential “yuck factor”
- Use positive motivations
 - ✓ Avoiding unnecessary waste, economic benefits, community/social benefits
- Keep rules simple
- Ask for a concrete commitment or action

TARGET NON-RECYCLERS

- Target messages to specific communities
- Talk with haulers
 - ✓ Which areas recycle less? Have greater contamination?
- Leverage community leaders to spread the word
- Use public space to advertise
- Know the objections or barriers to recycling
 - ✓ Know how to address them!

TARGET SCHOOLS

- Establish or expand school recycling
- Start school food scrap composting
- Promote special collections
 - ✓ Batteries, cell phones, locker clean-outs, HHW events/lab chemical clean-outs

ENGAGE NEW HOMEOWNERS

- Distribute “welcome packets” with solid waste & recycling program specifics
 - ✓ The community’s recycling & diversion goals, programs, recycling guidelines, etc.
 - ✓ Food waste/organics collection or home composting information
 - ✓ Tips for reducing hazardous materials & proper disposal

EVENT RECYCLING & COMPOSTING

- Provide free bins
- Provide “how to” information
- Provide technical assistance
- Why?
 - ✓ Serves as a great education tool
 - ✓ Reaches a wide & diverse audience
 - ✓ Makes recycling & composting more visible

REVITALIZE YOUR RECYCLING GOAL

- Goals provide targets to strive for
- Make the goal visible
 - ✓ Website, social media
- Announce the current recycling rate, goal rate, target date for achieving the goal
- Provide ongoing feedback on progress

Manage Materials

- Explain why not everything is recyclable
 - ✓ Nonrecyclable packaging may make more environmental sense—lower weight, less shipping/transportation costs
- Changing material landscape – promote reduction & reuse
- Add food waste & organics composting

ADDRESS MULTI-FAMILY RESIDENTS

- Provide curbside recycling to multi-family housing on the same routes as single-family collection
- Address PAYT issues
- Promotion – target schools, children
 - ✓ Fun, easy to understand signage
 - ✓ Use images

EXPAND CURBSIDE RECYCLING

- Provide curbside recycling for communities with medium to high densities
- Provide curbside recycling carts to increase the volume of recyclables collected
 - ✓ Serves to elevate the importance of recycling as compared to waste disposal



TOXICS IN PACKAGING

**AND, WHY WE
SHOULD CARE**

WHY SHOULD YOU CARE?

- Toxics in packaging can leach into people & the environment
- Can be present in leachate when packaging is landfilled or in emissions when incinerated
- Ends up in waterways through littering

THE ISSUE

- Chemical compounds - Perfluoroalkyl and polyfluoroalkyl substances (PFAS)
- High Persistence
- Connection to potential health effects
- Disposable food serviceware projected to increase 3.9% annually

THE ISSUE, cont.

- Fluorinated compounds in disposable food serviceware
- 130 products tested – 58% were fluorinated
- Used to impart water-and grease-resistance to single-use products

NO OR LOW-FLUORINE

- Bamboo
- Clay-coated paper or paperboard
- Clear PLA
- Paper-lined with PLA
- Paper with unknown coatings
- Uncoated paper

FLUORINATED

- All molded fiber products
- Typically, does not contain visible liner, instead fluorinated compounds are mixed into molded fiber slurry

PHTHALATES AND BISPHENOLS

- Present in nearly every type of food packaging
- Bisphenols & certain phthalates are endocrine disruptors
- Phthalates have adverse effects on reproductive systems; birth defects; other disorders

POLYVINYL CHLORIDE (PVC)

- Is common in food packaging
 - ✓ Shrink wrap & other plastic packaging
- PVC is a known carcinogen

STYRENE

- Polystyrene- rigid and foam –
 - ✓ Effects the central nervous system, presents an increased risk of leukemia & lymphoma, is a potential carcinogen, & is linked to other disorders
- 100% of Americans tested have styrene in their bodies

ALTERNATIVES

- Reusable food serviceware
- Non-fluorinated, Non-polystyrene disposables
- Recyclable containers
- Certified compostable serviceware

NEW HAMPSHIRE & TOXICS REDUCTION

- Regulations phasing out lead, cadmium, mercury, and hexavalent chromium in packaging adopted 1996

TOXICS AND PACKAGING CLEARINGHOUSE

- Toxics in Packaging Clearinghouse (TPCH) maintains the Model Toxics in Packaging Legislation
- It coordinates implementation of state legislation, based on the Model, on behalf of its member states, with the goal of promoting consistency across states
- New Hampshire is member

NERC CAN HELP

We're experts in

- Waste reduction & recycling
- Recycling program design & implementation
- Food scraps/Organics management
- Green procurement
- C&D reuse & recycling
- Electronics recycling
- School reuse, recycling & composting
- Textile recycling programs
- Multi-stakeholder dialogues & negotiations
- & More!

Fee for Service
makes NERC's expertise
available at a
reasonable price with
outstanding results

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