Changing Environmental Behavior

Annette Frahm

Sage Environmental

What's the point?

- "If we build a brochure, they will come" doesn't work
- Information alone does not change behavior!
- Message bombardment
- How to:
  - Get people's attention
  - Produce behavior change

>150,000 TV ads by age 35

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Workshop objectives

- At the end of the workshop, students will be able to:
  - Set clear, realistic objectives
  - Select an appropriate audience
  - Do basic audience research
  - Use several tools to make programs more effective
  - Develop an evaluation scheme

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It’s all about behavior change

Goal	Objectives
Improve health	Eat more whole grains, less fatty foods
Protect the environment	Reduce solid waste Use fewer pesticides
Prevent injuries	Store chemicals away from children
Involve the community	Vote!

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Ways to change behavior

- Technology
  - Automatic seat belts
- Laws, regulations
  - Require seatbelt use
- Economics/taxes
  - Fees & fines
- Education & outreach
- Combination = most effective

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Ways to change behavior: Reduce solid/hazardous waste

Technology	
Laws/regulations	
Economics/taxes	
Education & outreach	

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Reducing pesticide use: review

- Largest reductions (51-90%) from both by-laws & education
- Education & outreach alone: 10-24% reduction
- Denmark: increased pesticide taxes 37%

- Learnings:
  - Wide variety of outreach tools used
  - Political and/or popular support critical
  - Pressure from media instrumental

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Why behavior change is tough

- We ask people to:
  - Be uncomfortable
  - Risk rejection
  - Reduce pleasure
  - Be embarrassed
  - Go out of their way
  - Spend more time
  - Spend more money

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Behavior change: science

- Theories and models can help us understand:
  - **Why** a problem exists
  - **What** you need to know for an effective program
  - **How** to shape program strategies
  - **What** to measure in program evaluations

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Some theories & models

- Individual behavior
  - Stages of change
- Interpersonal behavior
  - Social networks
- Community and group behavior
  - Diffusion of innovations
- Social marketing

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Stages of change

Precontemplation	Not thinking about a change
Contemplation	Thinking about it, but has barriers and concerns
Preparation	Actively preparing for change
Action	Attempting to change
Maintenance	Committed to behavior

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Possible strategies

Precontemplation	Raise awareness Address beliefs
Contemplation	Communication from significant others Norms
Preparation	Address beliefs about effectiveness, difficulty
Action	Detailed “how-to” info Prompts, reminders
Maintenance	Reminders, follow-up help

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Self-efficacy

- Confidence in one's ability to take action
- Specific to target behavior
- Changing self-efficacy
  - Do behavior & see self as successful
  - Learn by watching others
  - Persuasion (least effective)
  - Minimize stress while doing behavior

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Social networks

- Word of mouth is most effective advertising
- 6 degrees of separation
- Connectors
- Mavens
- Salesmen

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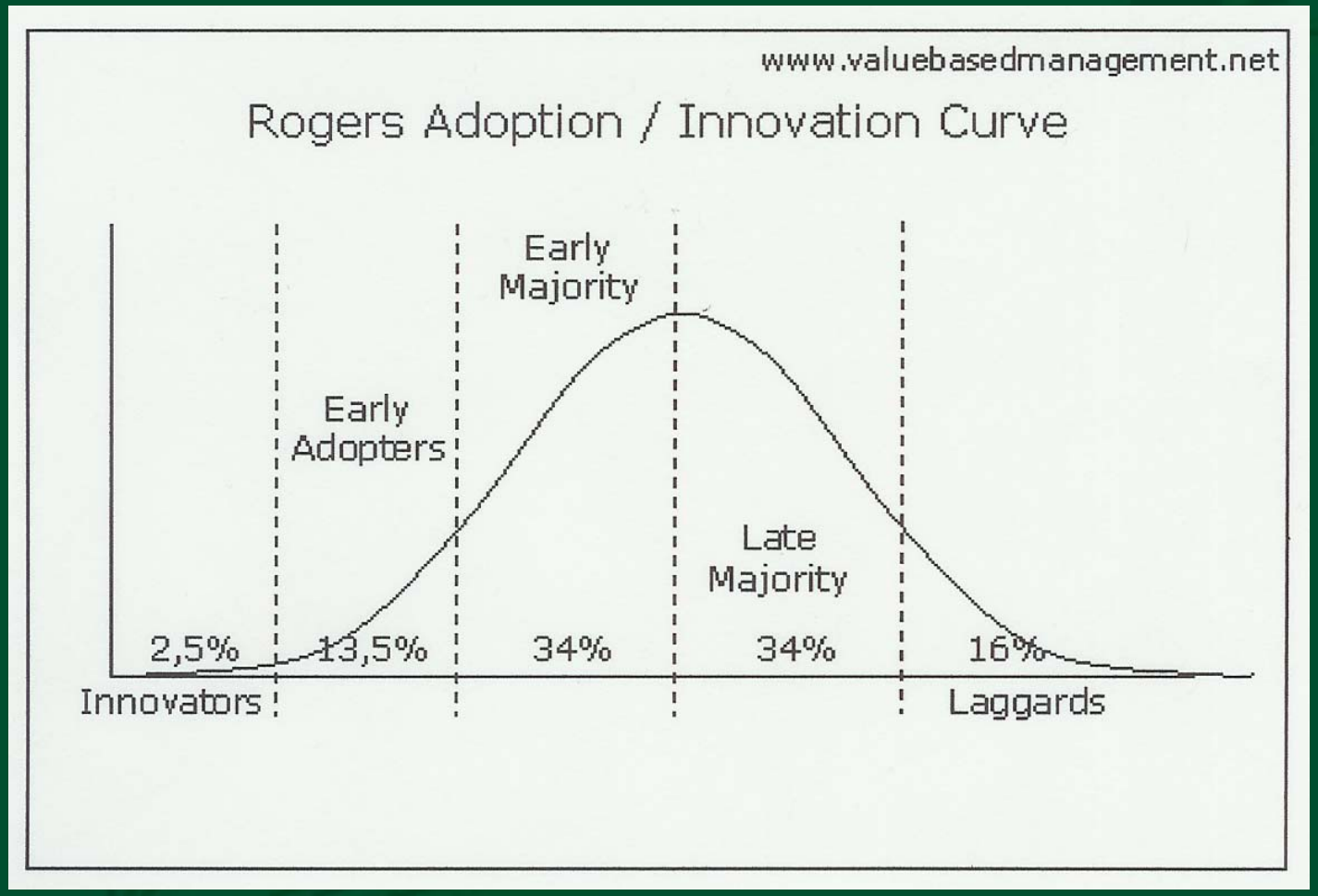
Diffusion of innovations



Social marketing

- Seeks to **influence** people to **change behavior** to **benefit** individuals, groups or society
- Applies both:
  - Marketing principles
  - Behavior change theories
- Audience-focused

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How social marketing differs

- From education
  - Information vs. behavior change
- From commercial marketing
  - Ideas & behaviors, not goods & services

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Basics of project planning

1. Set goals and objectives
2. Choose target audience
3. Find out about your audience
4. Explore barriers & benefits
5. THEN develop strategy
6. Develop evaluation plan

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The big picture

- Important step!
- What are your long-term goals?
- What objectives are steps toward goal?
- More specific = more useful

Goals, objectives are crucial

"If you don't know where you are going, you might wind up someplace else."

--Yogi Berra

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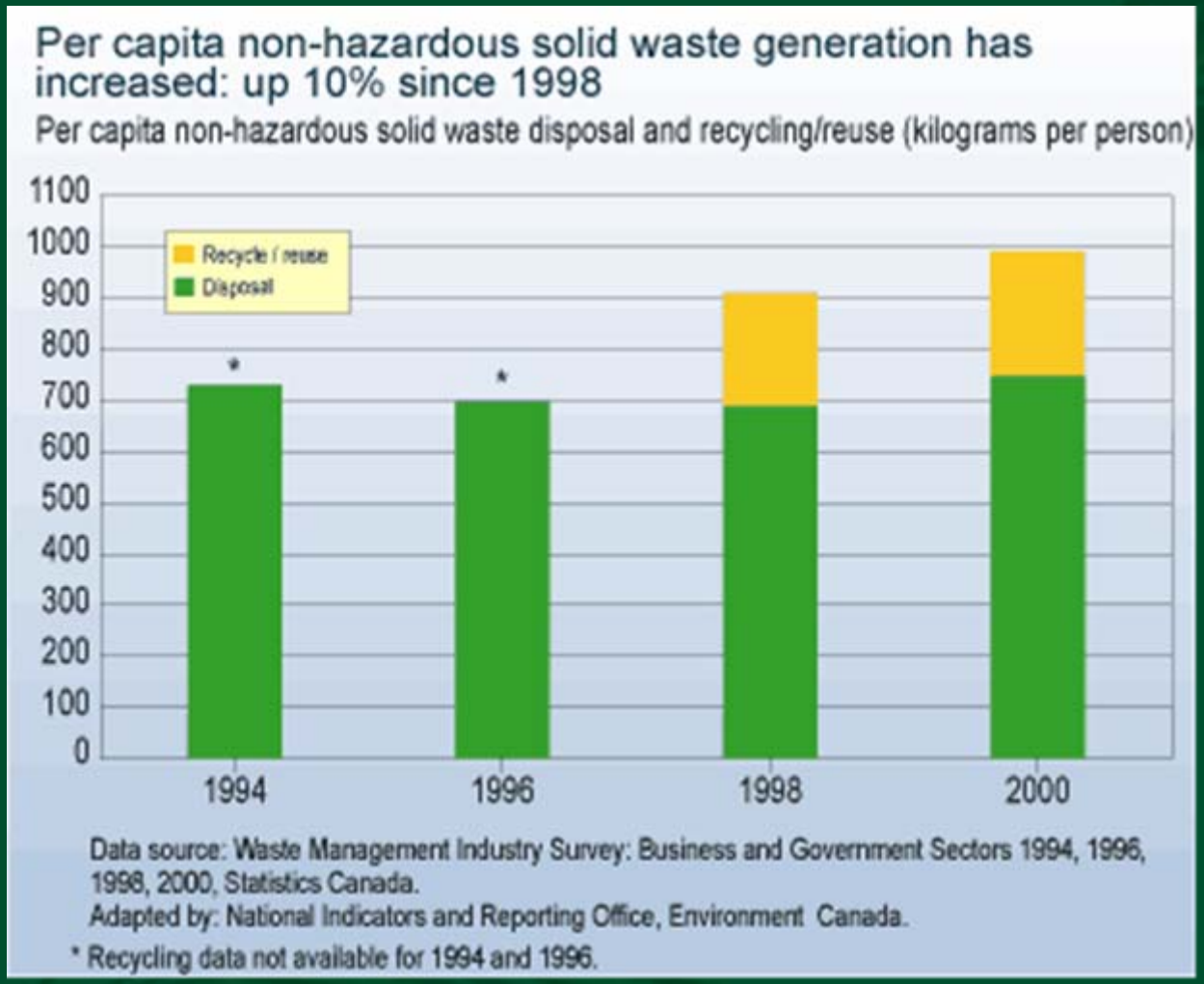
Waste generation is up



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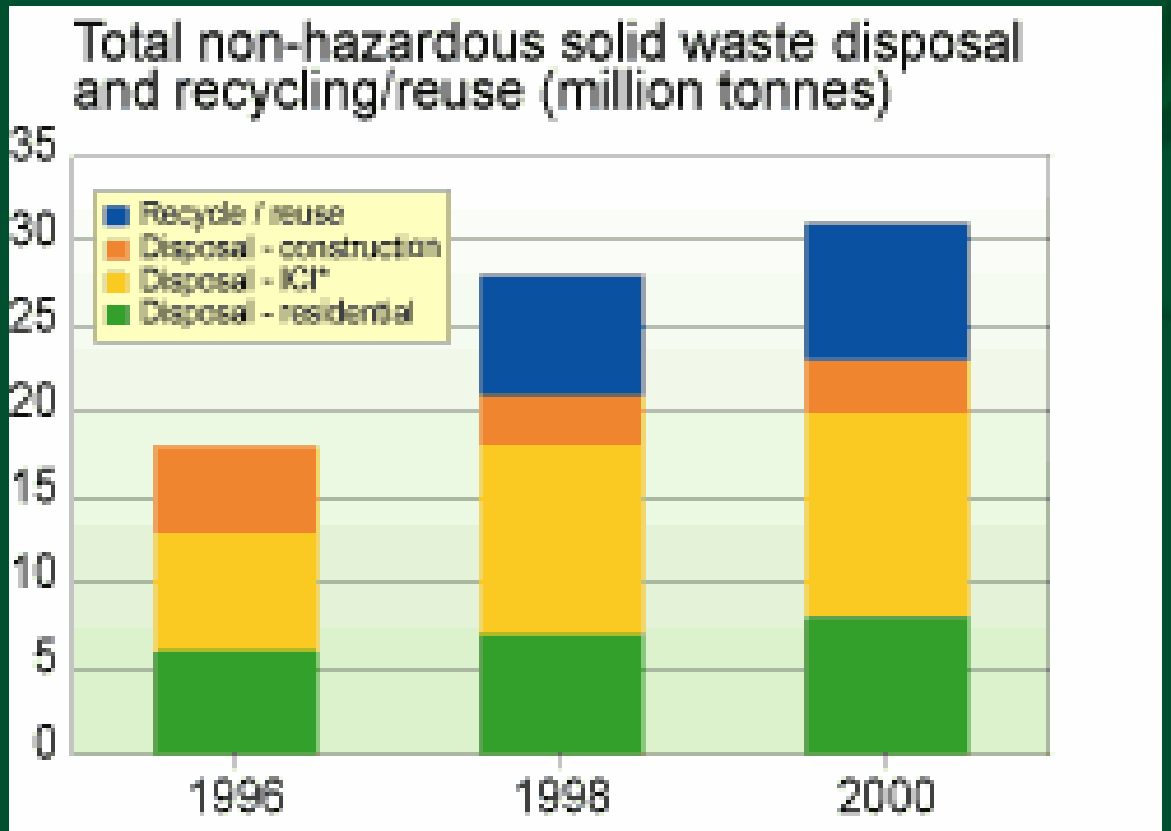
More recycling ≠ less waste



Data source: Waste Management Industry Survey: Business and Government Sectors 1994, 1996, 1998, 2000, Statistics Canada.
Adapted by: National Indicators and Reporting Office, Environment Canada.
* ICI - industrial, commercial, institutional

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Beyond Waste goals

- Reduce wastes and toxic substances used
- Use resources more efficiently; use excess materials as resources
- Balance business needs and environmental protection
- Use sustainability principles in making decisions

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Moving from goals to objectives

- Start with environmental goal
- Consider:
  - What is most beneficial to environment?
  - What can you do with your time and resources?
  - What falls within your program mandate?

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A good objective is concrete

- Realistic
  - Possible for you to do
- Specific
  - What? When?
- Measurable
  - How many? What will they do?

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Overall approach: Brainstorm

- How to meet goals & objectives
  - Technology?
  - Changes in laws, regs, policies?
  - Changing market, infrastructure?
  - Partnerships?
  - Outreach? To whom?
  - Other?

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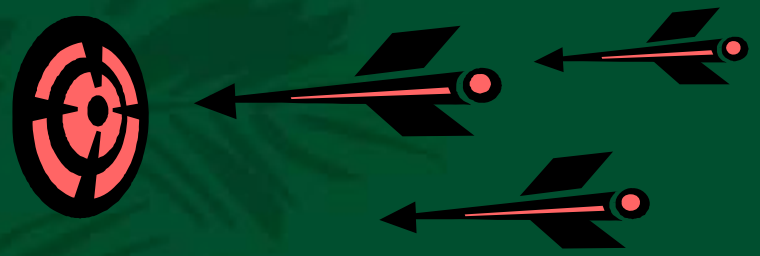
Selecting target audience

- Very important step: cannot affect entire universe
- Targeting has benefits:
  - More effective
  - More efficient
  - Helps allocate resources
  - Helps develop strategies



Selecting audience

- Pollutes most?
- Most at risk?
- Has most at stake?
- Makes decisions?
- Influences others?
- Reachable?
- Responsive?

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Audiences: Examples

Mercury: Dentists	14% of mercury loading to sewage treatment plant
Natural lawn care: Middle class male suburban homeowners	Most likely to use pesticides
Thermometer exchange: People older than 55	>50% have mercury thermometers

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Audience selection filters

- Demographic
  - Age
  - Income
  - Gender
  - Education
  - Household composition
- Geographic
  - Neighborhood
  - Workplace
- Psychographics (values & lifestyle)
- Behaviors
- Stages of change

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Making audience choices

- Brainstorm all possible groups
- Choose a group that is:
  - Large enough (but not too large)
  - Ready to change
  - Reachable
  - Efficient to reach
- Ones that:
  - Respond similarly
  - Can be reached together

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LA County stormwater audiences

Profile	% of Population	% Contribution
Concerned Non-contributors	20%	4-15%
Fix-It Foul-Ups	13%	22-41%
Neat Neighbors	50%	25-33%
Rubbish Rebels	9%	28-68%
Preoccupied Polluters	3%	Small
Prove-It-To-Me Polluters	5%	Small

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Setting audience objectives

- What do you want to change?
  - Specific behaviors
  - Precursors to behavior change
    - Awareness
    - Beliefs & perceptions
    - Knowledge
    - Skills
- Make your objectives:
  - Realistic, specific, measurable

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Natural Lawn Care Program

- Objectives:
  - Reduce use of pesticides, especially weed & feed
  - Reduce water use
  - Reduce grass clippings picked up at curb
- Audience: male homeowners, age 35-54

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Research your target audience

- Get outside and ask!
- Crucial questions:
  - Barriers to changing behavior?
  - Benefits, opportunities?

"No man really becomes a fool until he stops asking questions."
— Charles Steinmetz

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Barriers to change

- Multiple internal & external barriers
- Specific to activities
- People tend toward actions with high benefits & few barriers
- Perceptions differ among individuals

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Some possible barriers

Internal Barriers

- Knowledge
- Beliefs/perceptions
- Motivation
- Skills
- Social influence

External Barriers

- Availability
- Cost
- Convenience
- Regulations

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Other useful audience info

- Size
- Homogeneity
- Social interactions
- Organizational structure
- Credible information sources

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Lawn care focus group: What matters?

- Pride & aesthetics: straight lines, neat edges
- Pressure from neighbors
- Marketing by pesticide companies
- Possible effects on children
- “Convince me that I’m harming the environment”

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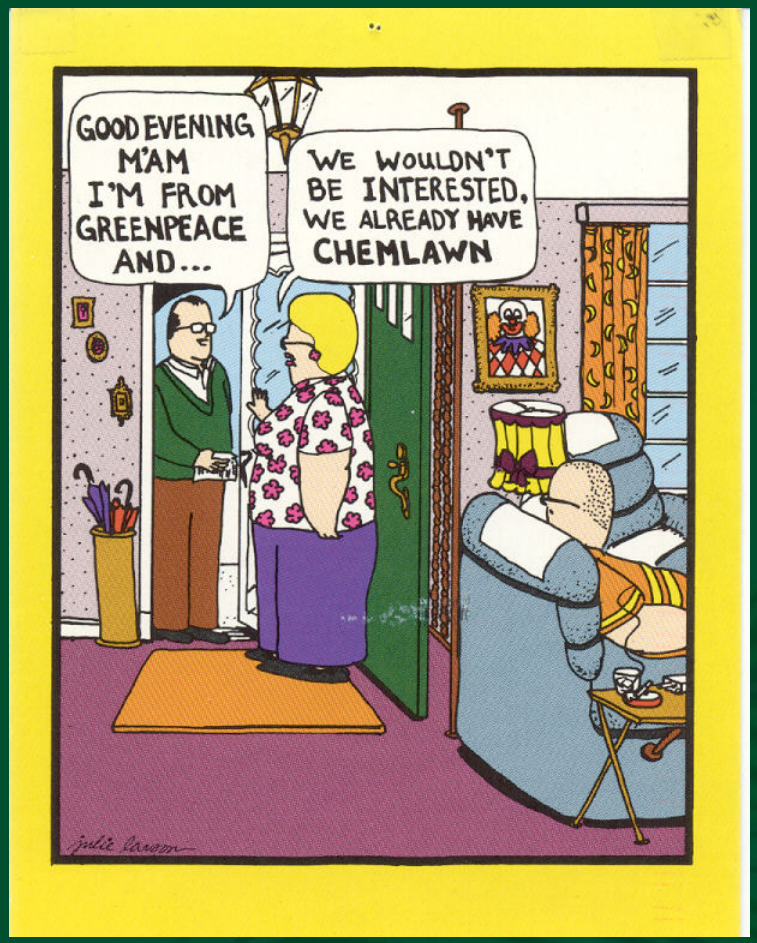
Landscaper advice: Barriers to lawn care changes



- Tolerance of some “weeds” in lawn
- Promotional power of chemical industry

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Benefits:
What might motivate change?

- Protecting children's health: most important
- Protecting water quality: 10 points less
- More important to women than men

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Audience research methods

- Literature review
  - Similar projects
  - Web research
  - Academic articles
  - Your audience's publications
- Observation
  - What do people actually do?

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Audience research (cont.)

Interviews

- “Key informants”
- Typical audience members
- Record their own words, perceptions
- Look for themes

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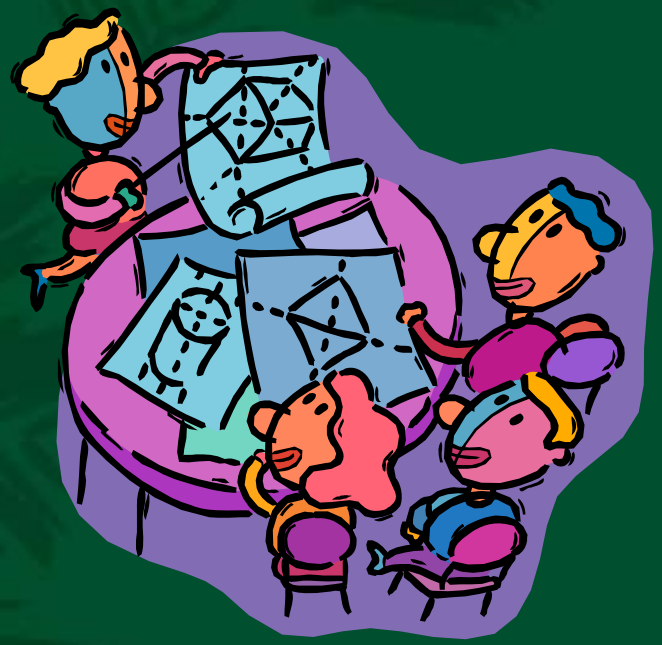
Audience research (cont.)

- Focus groups
  - In-depth discussion
  - Qualitative
  - Facilitation, recruitment important
  - 2 better than 1



Audience research (cont.)

- Surveys
  - Phone
  - Mail
  - On-line
  - Intercepts
  - Careful design important
  - Pilot first

Rubbish Rebels: Analysis

- Younger males
- Heavy, deliberate polluters
  - 9% of population, 28-60% of pollution
- Barriers, benefits, motivators
  - Concern with image, peers, being “cool”
  - Don’t care about environment, neighborhood
  - Interested in the future
- Car enthusiasts

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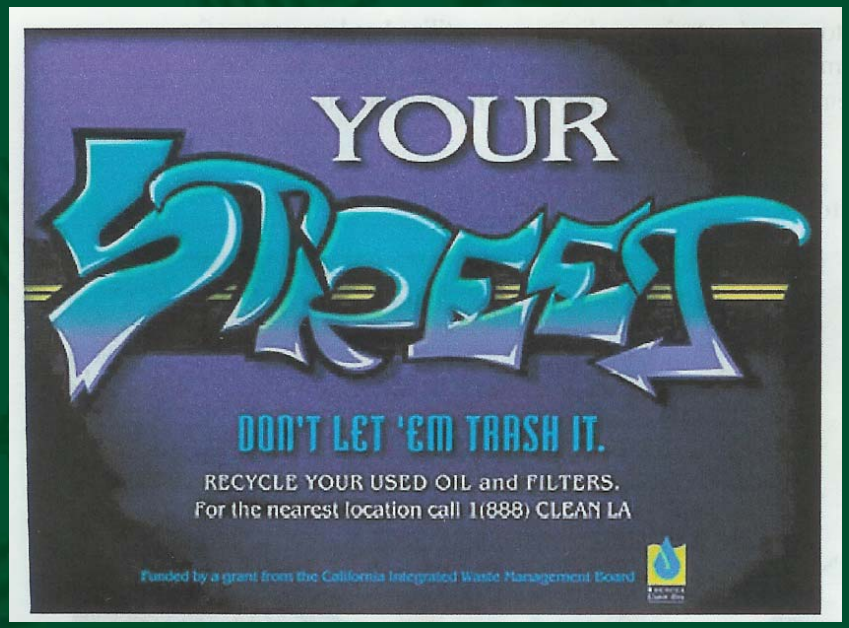
Rubbish Rebels: Used oil recycling strategies

- Partnerships with car clubs (credibility)
- Strategic radio advertising (targeted)
- Partnerships with auto parts stores
  - Posters, counter cards, floor graphics



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Rubbish Rebels: Results

- Used oil collection: 9% increase over previous year
- Calls to hotline for oil recycling info: 120% increase

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King County: Dentists & mercury

- Highly organized
- Highly educated
  - Scientific, technical approach
- Loners
  - Work alone
  - Organized groups: comradeship, info

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Dentists: Internal barriers

- Knowledge
  - “Infectious” vs. “hazardous” wastes
- Attitudes & motivation
  - Waste amalgam as hazardous waste?
  - Resent government interference
- Norms
  - No other dentists are recycling amalgam

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Dentists: External barriers

- Cost for hazardous waste hauler
- No haulers available in King County
- Not required to recycle amalgam

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Developing strategy

Perception is strong and sight weak. In strategy it is important to see distant things as if they were close and to take a distanced view of close things.

– *Miyamoto Musashi*

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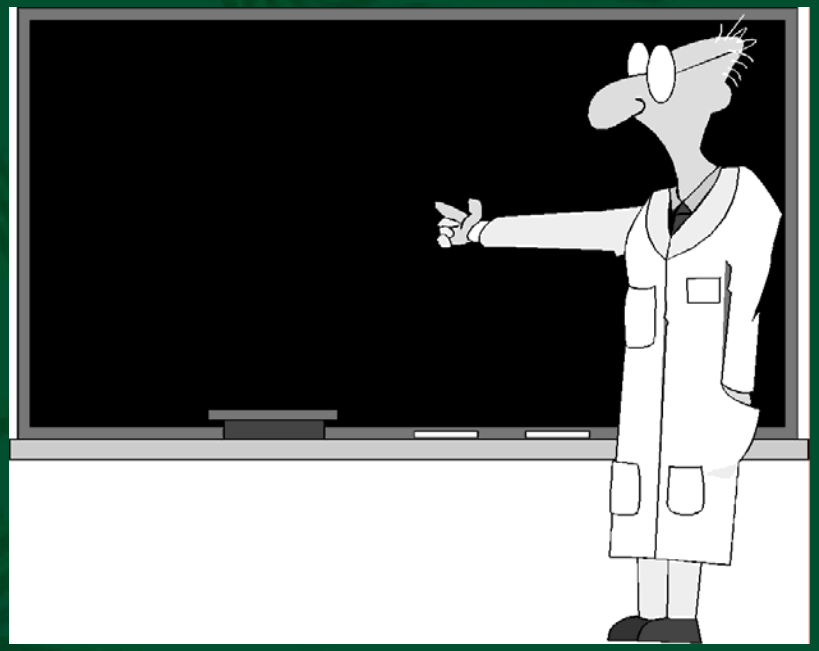
Craft a clear, coherent strategy

- Use audience research results
- What did you learn?
- How will that affect:
  - Messages
  - Delivery
  - Timing
- Where are opportunities?

Craft a clear strategy (cont.)

- Use key behavior change principles
  - Information ≠ behavior change
- Keep it simple



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Don’t reinvent the wheel!

- Take advantage of what’s been done before
  - Saves money, time
  - Increases effectiveness
- Learn from others’ experiences
  - www.toolsofchange.com/
  - www.cbsm.com/

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Look for partners

- Who else will benefit?
- Help leverage resources
- Help convey messages
- Public, private, nonprofit
- History of community involvement
- Customers are same

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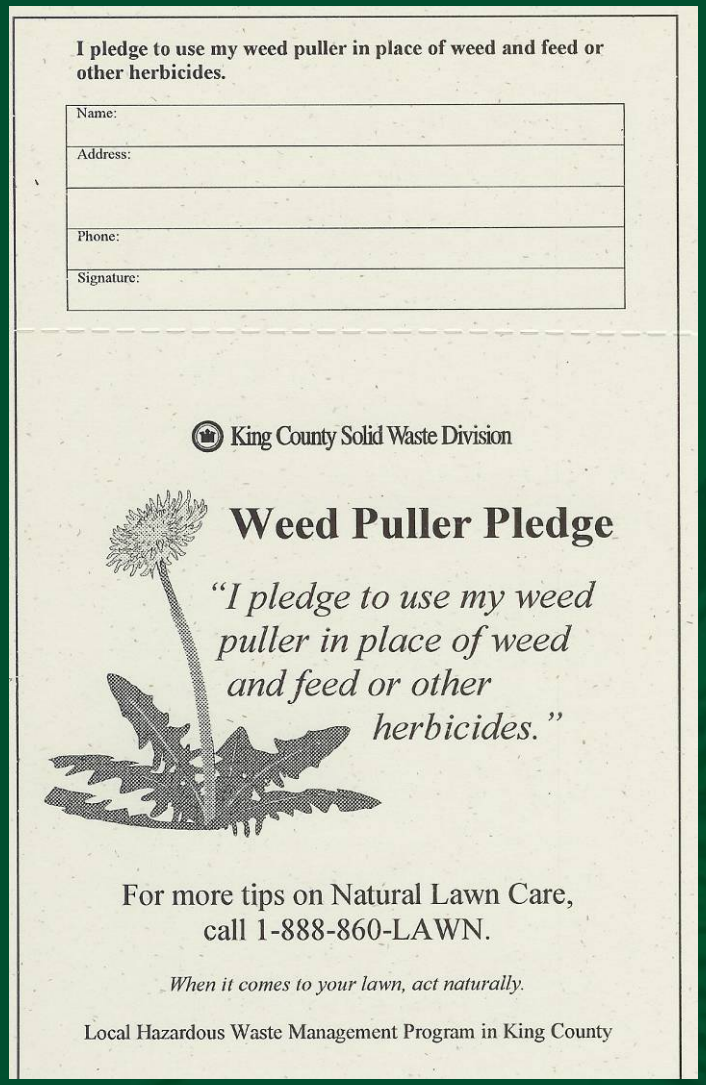
Commitments



I pledge to use my weed puller in place of weed and feed or other herbicides.

Name:
Address:
Phone:
Signature:

King County Solid Waste Division

Weed Puller Pledge

"I pledge to use my weed puller in place of weed and feed or other herbicides."

For more tips on Natural Lawn Care, call 1-888-860-LAWN.

When it comes to your lawn, act naturally.

Local Hazardous Waste Management Program in King County

- Small commitments lead to bigger ones: get people involved
- Making a commitment makes people more likely to act

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Commitments (cont.)

- Why commitments work
  - Commitments subtly alter self-perception
  - People want to act consistently

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Commitments (cont.)

- Making commitments more effective
  - Written commitments > verbal
  - Public commitments > private
  - Group commitments > private
  - Voluntary, not coerced

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Feedback and prompts

- Feedback and follow-up are important
- Reminders (“prompts”) are helpful

58% increase in sales of recycled products in grocery stores, 27% overall

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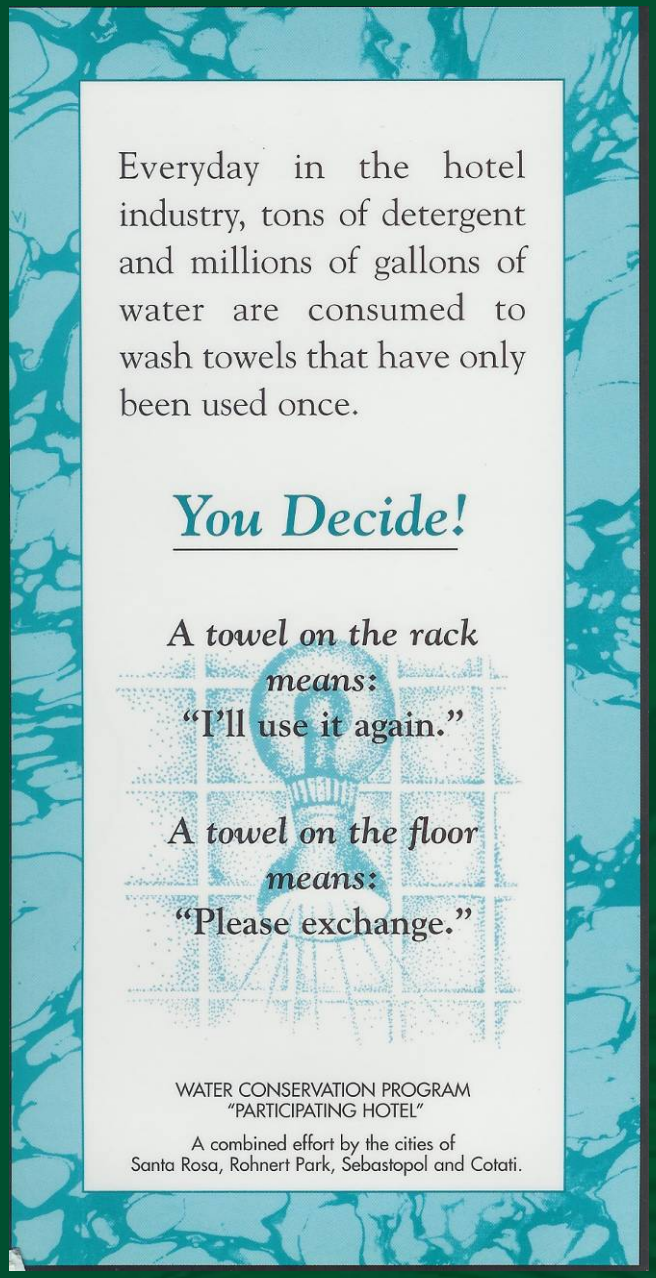

Prompts

- Visual/auditory cue
- More effective prompts
  - Close to desired behavior
  - Use for repetitious behaviors
  - Noticeable, self-explanatory

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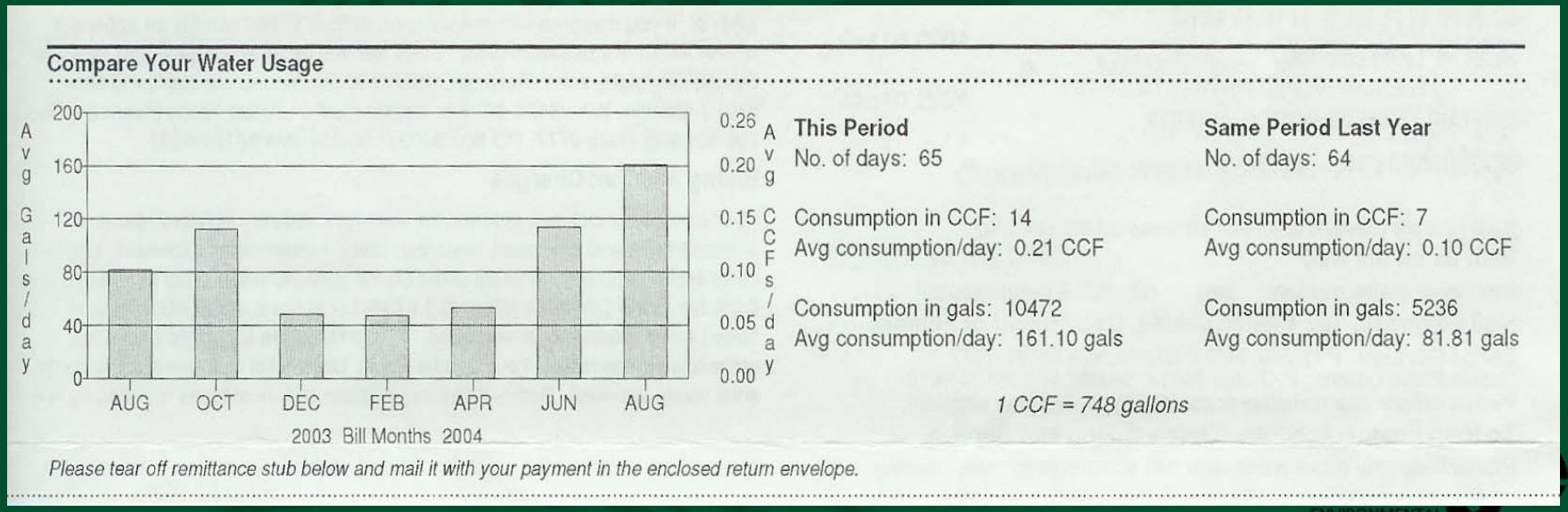
Feedback

- Helps to maintain behavior
- Provides information about impacts
- Comparative feedback is useful



Credibility

- People listen to those they trust
  - Friends, relatives, store staff, etc.
  - It might not be you!

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Increasing credibility

Ciscoe Morris, Seattle gardening expert

- Find trusted, respected people to deliver message
- Work through existing groups
- Create an organization or spokesperson

Bert the Salmon

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Who delivers the message?

- News media
  - More credible than ads
- Bert the Salmon
  - 32% have seen or heard of Bert
  - 73% named an environmental message from Bert

County officials suggest natural approach for treating lawns

Lawn-pesticide pollution worries county officials

Alternative steps urged to fight crane flies, protect streams

Lawn care blamed for pesticide in King County streams

Change agents: farm practices

- 1930s: goal of better farm practices
- Info pamphlets produced few results
- Demonstration projects: side-by-side with farmers
- Trained farmers served as models for others

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Change agents & role models

- Change agents spread innovations
  - Respected
  - Wide-ranging personal networks
- Behavior modeling is more powerful than information

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Norms

- The behavior of others affects how a person behaves
  - Peer pressure
  - Conformity

Using norms

- Make it visible
- Direct contact helps develop norms
- Stress how many in community are doing activity

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Of all Americans who change their own oil, only 10% of them dispose of their waste oil in the proper manner. Recycle used oil.

In College Station, an estimated 200,000 gallons of used oil are dumped improperly down the sewers, in empty lots, in holes in the ground, on weeds, and in landfills. All by people who change their own oil. Used oil and oil filters are banned from the landfill and dumping is illegal. Recycling is the only legal method of disposal.

A single quart of oil will foul the taste of 250,000 gallons of water. And as little as one pint of used oil can create an acre-sized slick on surface water. Oil kills the floating organisms in fresh water that feed fish. and it kills aquatic life.

We cannot afford to have our drinking water contaminated. Every one of us has to share the responsibility for transforming used oil from a liability into a major asset.

Don't Forget:

You can make a difference! If you change your own oil, don't dump it. Recycle it!

90 % don't do it!!

You can make a difference! If you change your own oil, don't dump it.

Recycle it!

For more information contact:

City of College Station
Public Works Department
2613 Texas Avenue
College Station, Texas 77842
(979) 764-3690

CLEAN TEXAS

COLLEGE STATION RECYCLES

Printed on recycled content paper.

Don't Dump It.

OIL

Recycle Used Oil and Oil Filters.

Give Your Dirty Oil and Oil Filter A Fresh Start!

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Testimonials from "people like you"

Upper Valley Agency
1155 Third Street
Room 101
Napa, CA 94559

Upper Valley Disposal Service
PO Box 362
St. Helena, CA 94574

Detach and Mail Today!

Desprenda y regrese la tarjeta para que reciba gratis un recipiente para almacenar el aceite usado.

Paid for by a grant from the California Integrated Waste Management Board

HERE'S WHAT SOME OF YOUR NEIGHBORS SAY ABOUT CURBSIDE OIL PICK-UP:

"It's great! It's a very handy program, and I'm absolutely satisfied... If you're going to recycle your oil, no doubt it makes it easier... Oil is a finite resource, and it should be recycled!"
Stephanie Strouss, Angwin

"I use the program every time I change the oil in my vehicles... I know other people in the community do too."
Robert Hollard, Angwin

"The program works well; it's a nice service from Upper Valley Disposal. It's so easy...you just call and they come. I don't have any complaints about it and we've used it for a long time...I'm sure other people do (too)."
Anonymous, St. Helena

"It couldn't be easier...everybody should use it; that's the bottom line!"
Julio Pesolo, Calistoga

"I use it every time the oil is changed."
Ellie Sanders, Calistoga

"We use the program once a month...When we change the oil we just put it in the container...It makes it very easy!"
Charlotte Rice, St. Helena

"It's worked very well for us... I just think that it's very important that all of us be responsible to not pollute our environment... we should put forward the effort, and I'm so thankful that we have a means of doing it without making it difficult."

Evelyn West, Angwin

Upper Valley Agency
1155 Third Street
Room 101
Napa, CA 94559

Descriptive Norm

Injunctive Norm

Are you one of the **20,000** residents in Napa County who change their own motor oil?

CURBSIDE OIL RECYCLING
"Free, Easy and Convenient"

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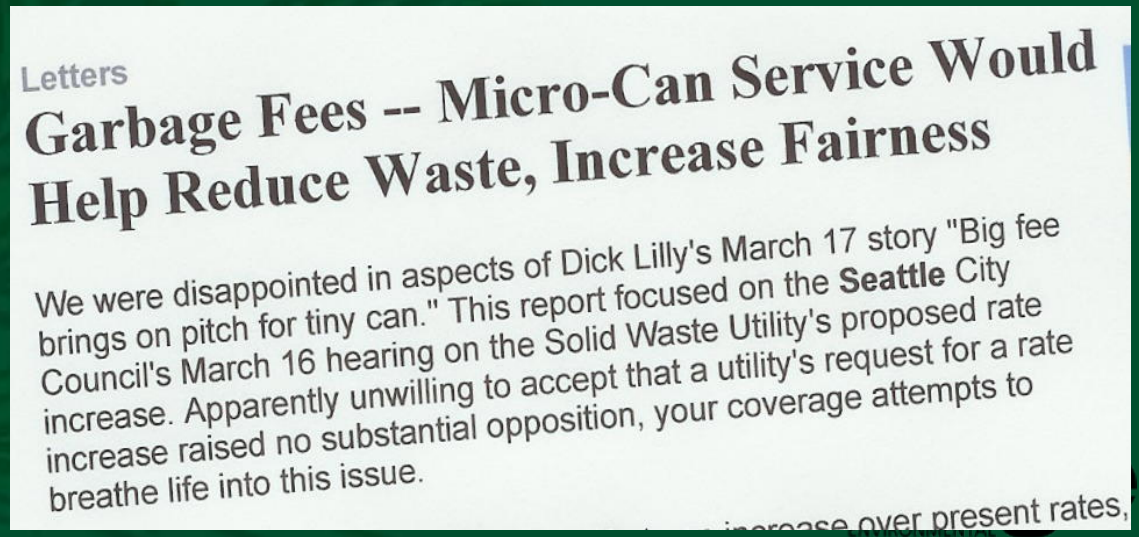
Attitudes & behavior

- People's attitudes and beliefs may/may not affect behavior
- More effective to focus on barriers to change

Incentives

- Incentives may be helpful if used carefully
  - Variable garbage fees
  - Bottle deposits
  - Energy retrofits



Letters

Garbage Fees -- Micro-Can Service Would Help Reduce Waste, Increase Fairness

We were disappointed in aspects of Dick Lilly's March 17 story "Big fee brings on pitch for tiny can." This report focused on the **Seattle** City Council's March 16 hearing on the Solid Waste Utility's proposed rate increase. Apparently unwilling to accept that a utility's request for a rate increase raised no substantial opposition, your coverage attempts to breathe life into this issue.

increase over present rates,

Presenting information

- If you need to provide information, present it effectively

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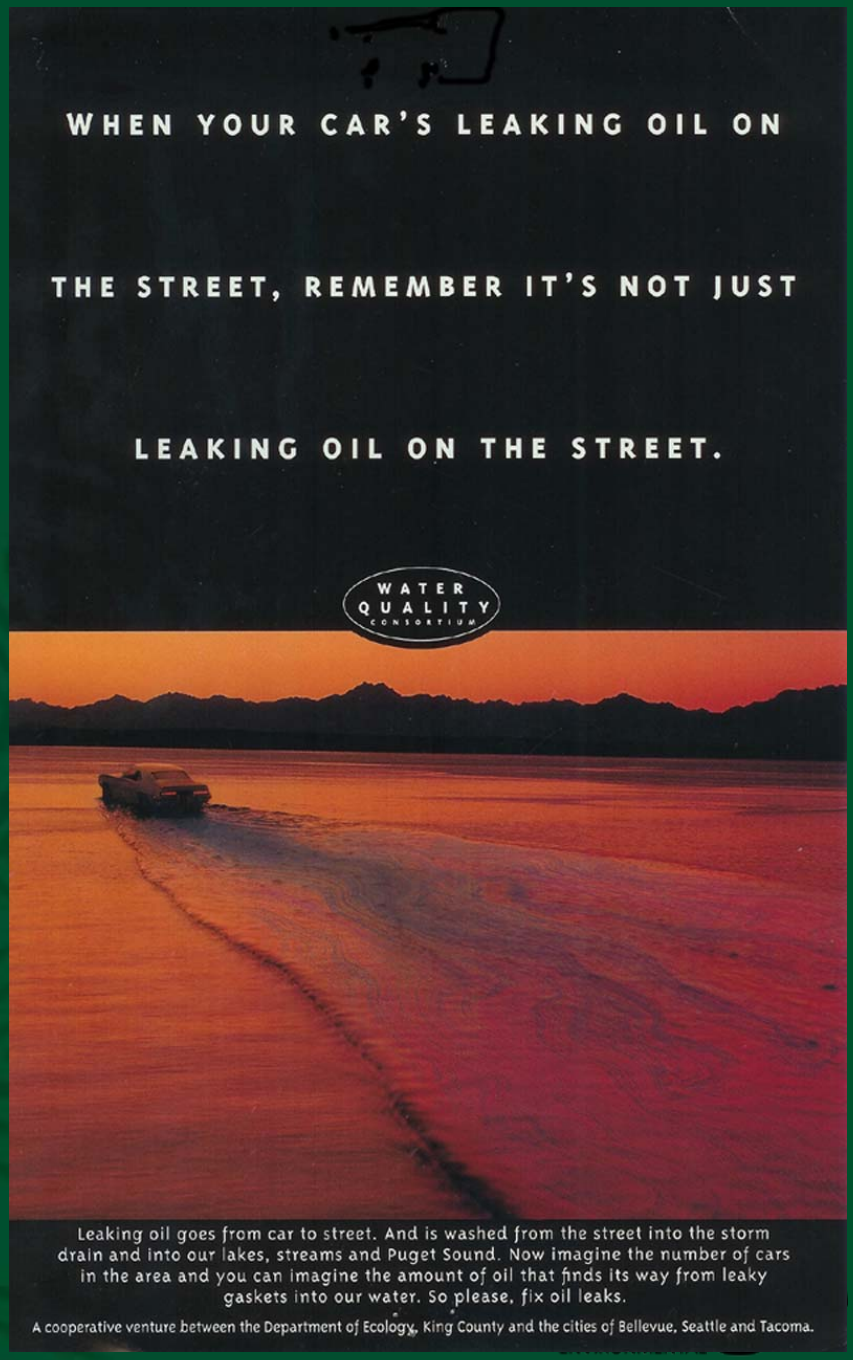
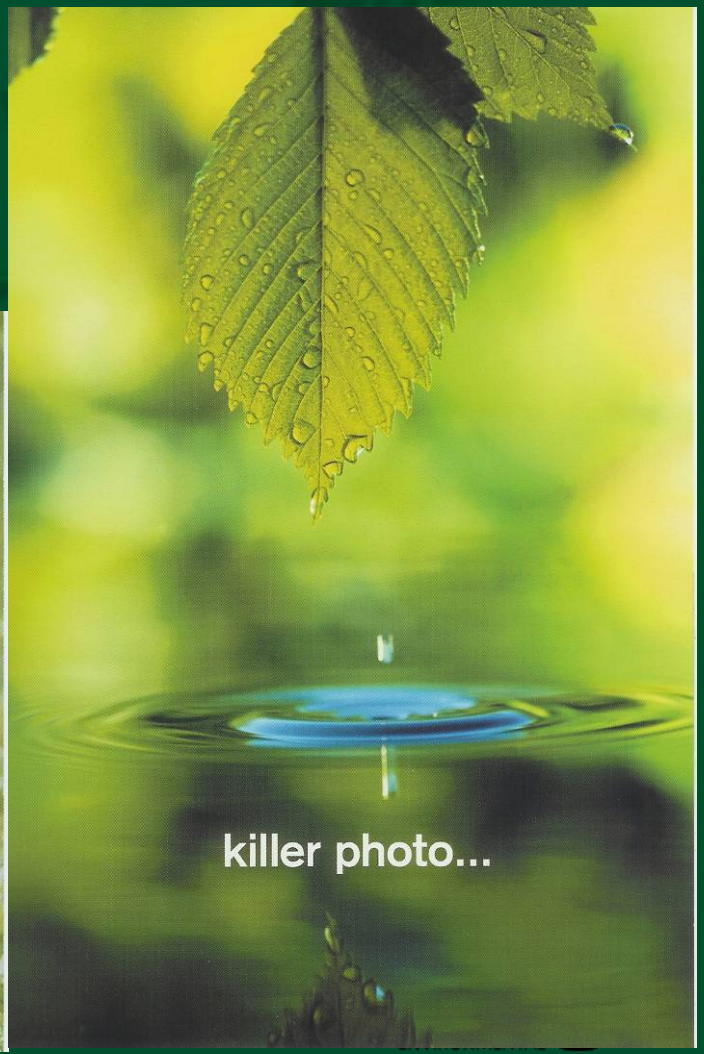
Presenting information

- Make it vivid, colorful



Presenting information

- Make it personal, emotional



Pesticide postcards

- Objectives
  - Increase concern about risk
  - Provide simple actions
- Audience: female suburban homeowners
- Results
  - Those who remembered postcards more likely to make positive behavior changes

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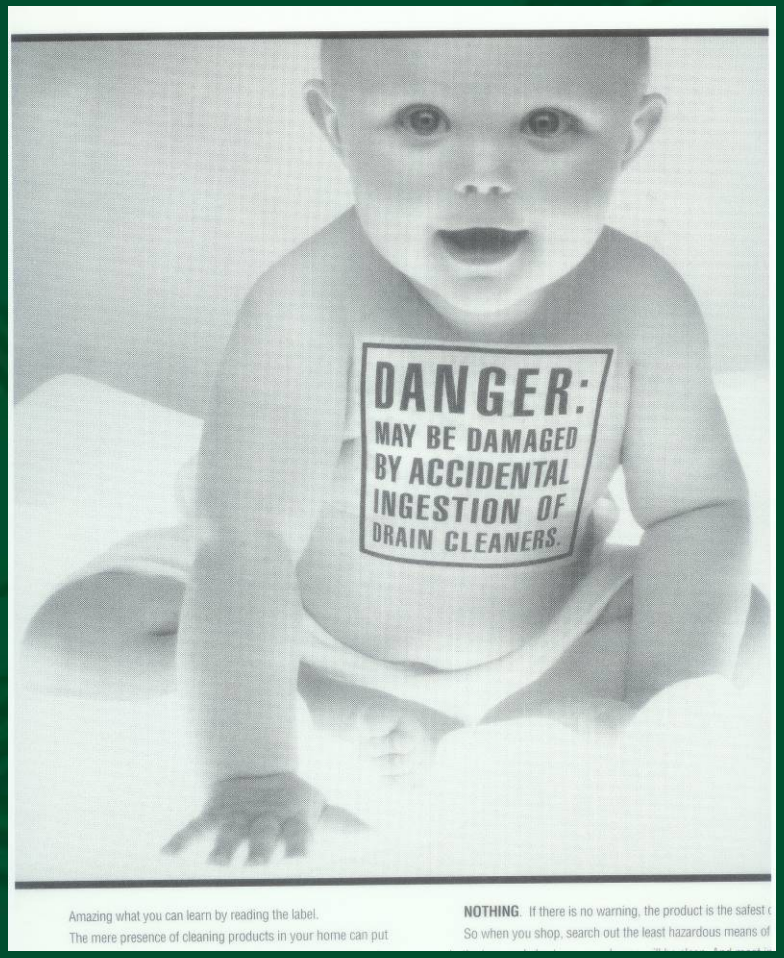
Presenting information

- Frame message in terms of loss rather than gain



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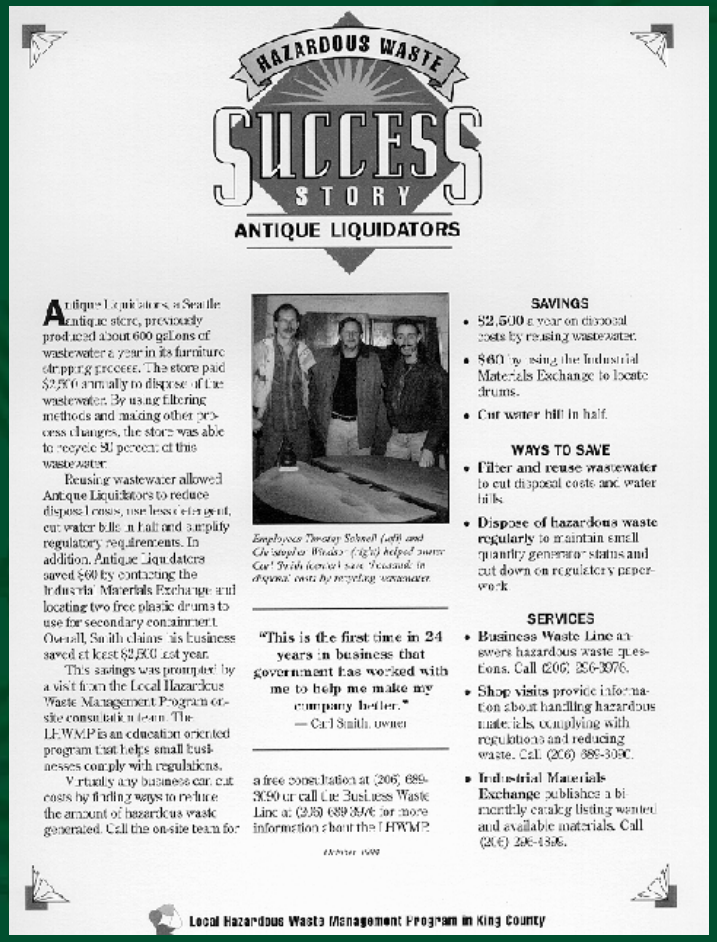
Presenting information

- Make it:
  - Specific and concrete
  - Easy to remember

Presenting information

- Tell a story
- Stories:
  - Increase impact
  - Help memory



HAZARDOUS WASTE SUCCESS STORY

ANTIQUE LIQUIDATORS

Antique Liquidators, a Seattle antique store, previously produced about 600 gallons of wastewater a year in its furniture stripping process. The store paid $2,500 annually to dispose of the wastewater. By using filtering methods and making other process changes, the store was able to recycle 80 percent of this wastewater.

Reusing wastewater allowed Antique Liquidators to reduce disposal costs, use less detergent, cut water bills in half and simplify regulatory requirements. In addition, Antique Liquidators saved $60 by contacting the Industrial Materials Exchange and locating two free plastic drums to use for secondary containment. Overall, Smith claims his business saved at least $2,800 last year.

This savings was prompted by a visit from the Local Hazardous Waste Management Program on-site consultation team. The LHWMP is an education oriented program that helps small businesses comply with regulations.

Virtually any business can cut costs by finding ways to reduce the amount of hazardous waste generated. Call the on-site team for a free consultation at (206) 689-3090 or call the Business Waste Line at (206) 689-3046 for more information about the LHWMP.

October 1998

Employees Tommy Schnell (left) and Christopher Wooldridge (right) helped owner Carl Smith learn how to save Thousands in disposal costs by recycling wastewater.

"This is the first time in 24 years in business that government has worked with me to help me make my company better."
— Carl Smith, owner

SAVINGS

- $2,500 a year on disposal costs by reusing wastewater.
- $60 by using the Industrial Materials Exchange to locate drums.
- Cut water bill in half.

WAYS TO SAVE

- **Filter and reuse wastewater** to cut disposal costs and water bills.
- **Dispose of hazardous waste regularly** to maintain small quantity generator status and cut down on regulatory paperwork.

SERVICES

- **Business Waste Line** answers hazardous waste questions. Call (206) 296-3076.
- **Shop visits** provide information about handling hazardous materials, complying with regulations and reducing waste. Call (206) 689-3090.
- **Industrial Materials Exchange** publishes a bi-monthly catalog listing wanted and available materials. Call (206) 296-4896.

Local Hazardous Waste Management Program in King County

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Evaluation plan

"Not everything that can be counted, counts. Not everything that counts, can be counted."

--Albert Einstein

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Why do evaluation?

Purpose	**Audience**
Find out what's working Do better next time	Project manager, staff
Fulfill grant	Granting agency
Secure funding, support	Decision-makers

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Types of evaluation

- Formative: What should we do?
- Progress: How are we doing?
  - Pilot test results
  - Adjust, improve strategy
- Post-program: Did we do it?

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Pretest

- Find out if your materials, methods communicate
- Possible methods
  - Focus groups
  - Expert reviewers
  - Audience members
  - Others?

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Pilot test

- Work out kinks, assess effectiveness, fine-tune strategy
- Select similar audience
- Test two groups if possible

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Progress evaluation

- What needs to be changed to make program more effective?
- Possible methods
  - Class evaluations
  - On-site surveys
  - Observation
  - Others?

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Post-program evaluation

Process evaluation	How did we do?
Outcome evaluation	What changes were made?
Impact evaluation	What were effects?

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Process measures

- Number of brochures distributed
- Reach and frequency
- Media coverage
- Total impressions
- Number who attended workshops
- Participation, contributions from others
- Assessment of implementation

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Outcome measures

- Changes in:
  - Behavior
  - Behavior intent
  - Knowledge
  - Beliefs
- Responses to campaign elements
- Awareness of campaign
- Levels of satisfaction

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Impact measures

- Sales data
  - Reduced/increased sales
- Trash sorts
  - Changes in disposal
- HHW collection data
- Water quality monitoring
- Follow-up visits: waste prevention

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Evaluation design

- Data from existing (baseline) measures
- Comparison to a standard
- Single group, pretest/posttest
- Two groups, control
- Two groups, two different approaches
- Longitudinal

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Evaluation methods

- Surveys
  - Phone
  - Mail
  - Intercept
  - On-line
- Observation
- Quantitative methods
- Qualitative methods

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SoundStats survey results

	1997	2001	2002
Don’t use weed & feed	47%	61%	58%
Don’t care about lawn weeds	23%	32%	28%
Prefer environmentally friendly landscaper	9%	47%	50%

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Home & garden store sales data, 2000-2002

- Sales of most pesticides: small decrease
- Weed & feed sales decreased
- Pesticides found in streams: sales declined by 32%
- Carbaryl sales up 1100%
- Less-toxic pesticides are small fraction of sales

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When objectives aren’t met

- Right target audience?
- Realistic objectives?
- Clear, doable behavior?
- Barriers too high?
- Benefits outweigh costs?
- Messages on target?
- Right media channels?
- Implementation worked?

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Final thoughts

"The wise man is he who knows what he does not know."

--Zen proverb

"Everything we do is futile, but we must do it anyway."

--Mahatma Gandhi

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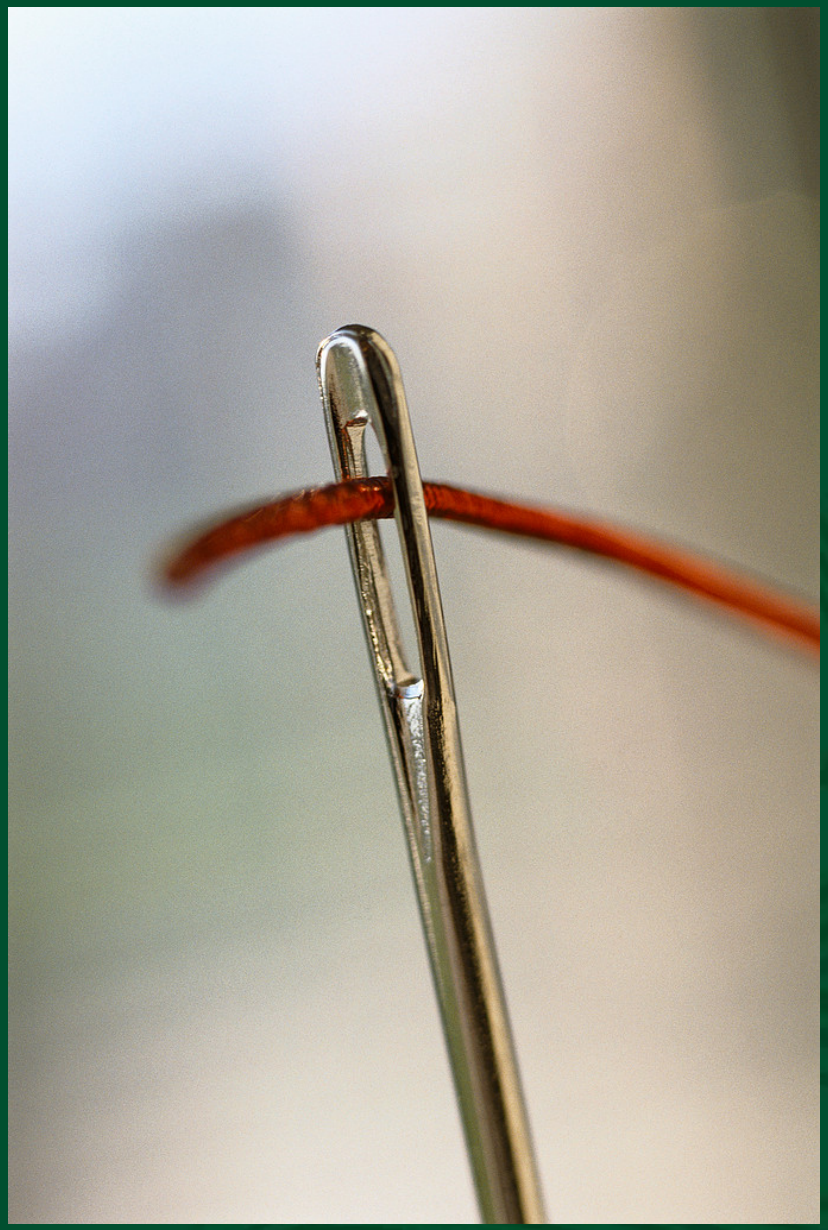

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