

**REDUCE, REUSE, REMAKE,  
RECYCLE**

Circularity makes good sense!



# OUR AGENDA

- The Why
- The What
- The How
- The When

## SOME BACKGROUND

- Our ancestors –
  - Built homes, tore out the things they could reuse
  - Burned the rest
  - Collected the nails from the ashes to use them for new construction
  - It was efficient, effective, and productive



# GROWTH

- The population grew and the need for more homes went up
- Towns and cities didn't want people burning their homes
- They created dumps
- Homes would be torn down and the materials would be hauled to a dump and burned



MASS  
PRODUCTION

- Henry Ford built cars better than anyone else
- Other industries saw this as a boon for them
- They mass produced
- We didn't need the nails from the old house, and the beams were only good for decoration
- Suburbia!
- The dumps grew
- Take, Make, and Toss!



THE SHIFT  
FROM  
ARTISAN  
CRAFT

- Automobiles
- Homes
- Factories
- Office Buildings
- Strip Malls
- Drive Thrus
- Moved us to more volume with better quality
- With shorter life spans



## REUSING SPACE

- Renovating downtowns
- Creating Malls away from City Center
- Spreading, Tearing Down, and Building Up
- The old was moved to landfill operations (aka – Dumps)



## TODAY'S MARKET

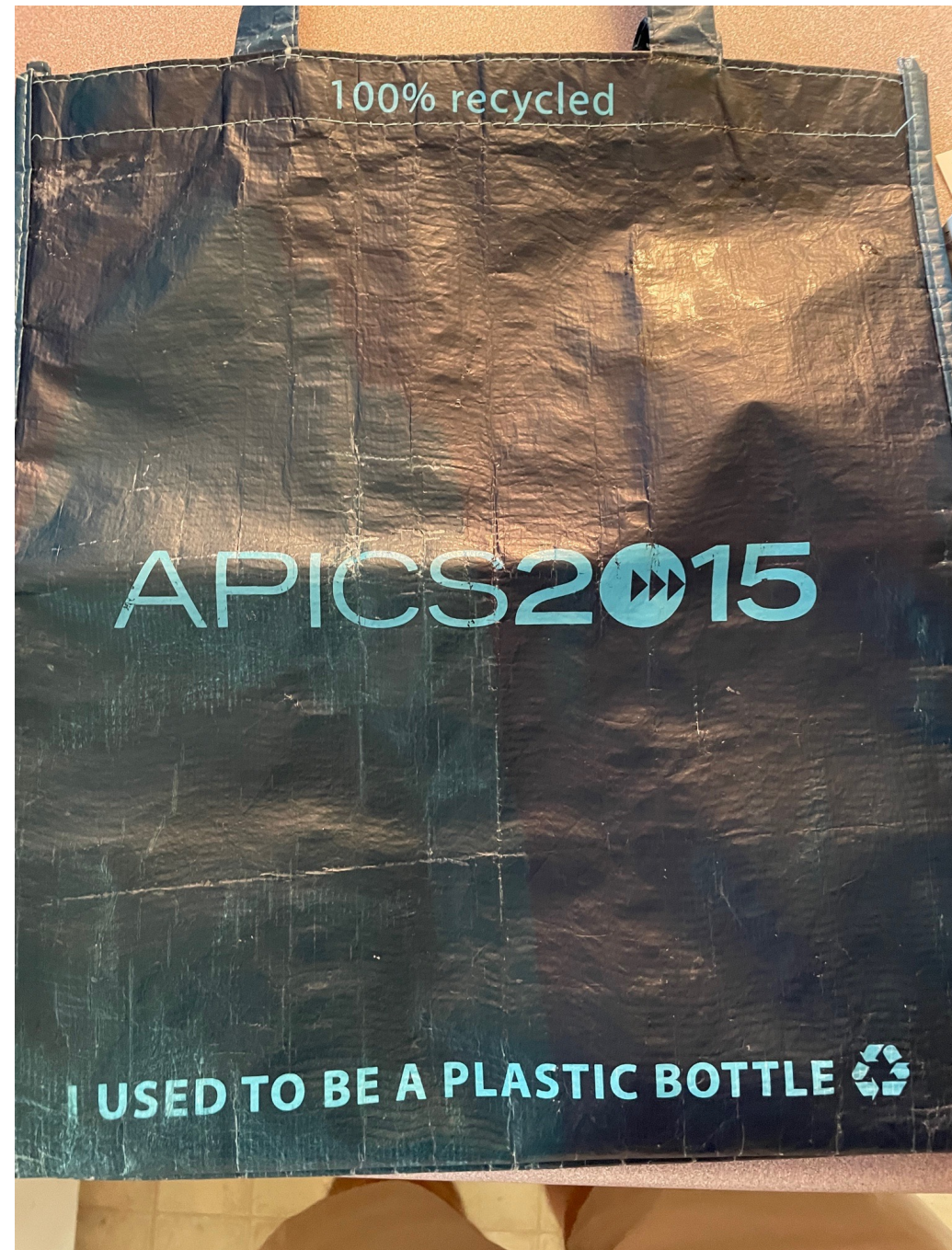
- We need more housing in single family dwellings
- On miniscule tracts of land
- We Tear Out, Remodel, and Flip
- We have dumpsters that collect the Torn Out material and efficiently move it to the Landfill where it joins the inner appointments from used autos, “old computers,” and packaging materials



# REDUCE!

- We have made waste handling more efficient, but not more effective.
- How do we collect the nails to reuse them?
- One example – Using aqueous solvents to replace oil-based solvents

WE HAVE  
BEGUN TO  
CREATE  
AWARENESS





# AWARENESS

- Al Gore's name on a movie about climate change
- Scoffing – ridicule – resistance
- Remember –
  - Paper Drives
  - Picking up empty bottles and returning them for the deposit
  - Still doing that in your state?



## DAVE'S GOAL

- Dave Williams owned IPC
- It is now Freudenberg-NOK
- Molding custom parts out of rubber, steel, and silicone
- The waste went to dumps
- Why not burn it? EPA – smell – etc.
- Today – it gets processed into pellets and gets blended with fuel oil to provide heat to the molds
- The electricity is provided by the company's own hydroelectric generators



## PLASTIC PACKAGING

- One of our largest waste streams at about 90 million tons per year
  - ~50 million tons get recycled\*
  - ~08 million tons get burned for energy
  - ~32 million tons go to landfills

## DEPOSITS AS INCENTIVES

- In a few states you pay a deposit on many containers and the recycle rate is higher than that in TX.
- Pepsico and Anheuser Busch and others are using a new packaging process that uses recycled plastic
  - Tops and bottles are the same material
  - Return to the store for refund
- It's another step toward circularity!
- More than 200 companies have joined Recycling 2day! They print instructions on their packaging to guide recycling.



## REFURBISH OR REMAN

- Cable boxes and cell phones
- Diesel Engines, transmissions, fuel pumps, injectors, etc.
- Buildings and bridges (see dumps above)
- Furniture
- Taxis



NOT NEW,  
BUT  
GETTING  
NEWER

- The first papers on Circularity were written in the early 1960's
- They were further developed in the 1980's as we got serious about pollution.





## KEYS TO IMPROVEMENT

- Developing mass reuse and reprocessing needs to grow from artisan to big business
- Finding alternatives to petroleum-based products
- Creating a new social/economic scheme that will allow for sustainability

THANK YOU!