TED TALK

CHAZ CHAT … @ CHANGE

EPA 1976 IN THE SOURCE SEPARATION PROGRAM

BUT HAD A SUMMER JOB IN COLLEGE WORKING AT A DUDE RANCH IN THE COLORADO ROCKIES

- NOT THE ROMANTIC COWBOY
- A MORE PROSAIC JOB WHICH INCLUDED COLLECTING ALL THE GARBAGE EVERY MORNING
- PUTTING IT IN 55 GALLON DRUMS & DRIVING 30 MILES TO THE COUNTY DUMP
- WHERE I UNLOADED IT, SET IT ON FIRE & DROVE AWAY
- IT WAS PERFECTLY LEGAL
- & WE DON’T DO THAT ANYMORE

JUST THINK HOW MUCH OUR INDUSTRY HAS CHANGED IN THE LAST FIVE DECADES

- & THE MOST DIZZYING CHANGES HAVE OCCURRED IN THE LAST DECADE

& THAT IS THE THEME OF THIS PRESENTATION:

CHANGE

SO I WILL BE TALKING ABOUT CHANGE
- NOT A BORING HISTORY LESSON

I AM GOING TO FOCUS ON THREE KEY TRENDS

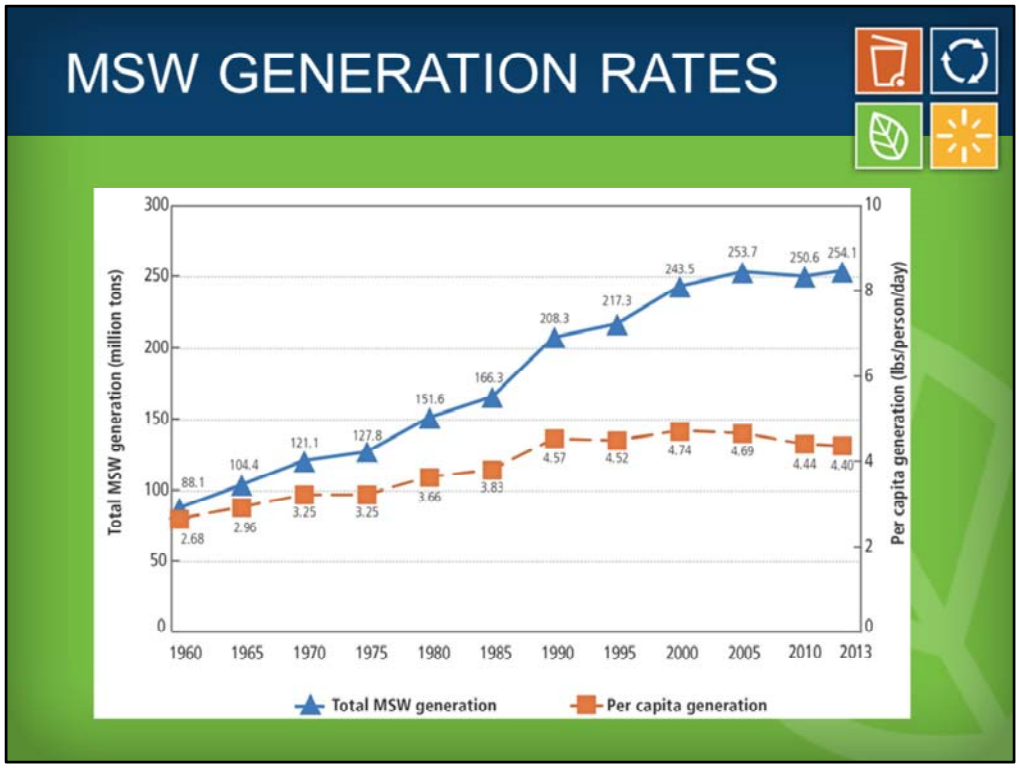
THE EVOLVING TON IS THE HEART OF THIS PRESENTATION B/C OUR RAW MATERIALS DEFINE WHAT WE DO

MARKETS CONTROL OUR DESTINY

SUSTAINABLE MATERIALS MANAGEMENT IS THE FUTURE:
- A NEW WAY TO LOOK AT WASTE & RECYCLING

MY FIRST POINT IS SIMPLE: WE ARE NO LONGER THE SAUDI ARABIA OF WASTE
- & THIS IS VERY GOOD NEWS

<u>LET'S START W/OUR RAW MATERIAL</u>



THIS IS EPA DATA: 1960 – 2013 TOTAL AMOUNT OF MSW WE GENERATED BEFORE RECYCLING & COMPOSTING
(<u>NOTE ALL DATA EPA</u>)

THE BOTTOM LINE IS PER PERSON
- DOWN 7.2 % SINCE 2000

THE TOP LINE IS TOTAL WASTE GENERATION

KEY POINT: GARBAGE GENERATION HAS SLOWED DOWN DRAMATICALLY
- *NOTE HOW MUCH GARBAGE GREW BETWEEN 1980 & 1990 (37.4%)*
- *& HOW THE GROWTH SLOWED DOWN BETWEEN 1990 & 2000 (16.4% EVEN THOUGH THE ECONOMY WAS STRONG)*
- *& VIRTUALLY STOPPED B/W 2000 & 2010 (2.86%)*
- *& EVEN SLOWER 2010 – 2013 (1.47%)*
- *GROWTH IN 2013 1.22%: POPULATION GROWTH 0.7% , GDP GROWTH 2.2%*
- *SEATTLE POPULATION UP 9%, PER CAPITA DOWN 5%*

HAD WASTE GROWN AT THE SAME RATE AS THE PREVIOUS TWO DECADES WE WOULD HAVE HAD AN EXTRA 77 MILLION TONS TO WORRY ABOUT IN 2010.

WHAT HAPPENED

THESE FIVE REASONS ARE USUALLY GIVEN

IT'S NOT **RECYCLING & COMPOSTING**
- THEY ARE END OF THE PIPELINE WASTE MANAGEMENT STRATEGIES

IT'S NOT THE **RECESSION**
- EPA DATA SHOWS THAT ECONOMIC GROWTH & WASTE GENERATION HAVE BEEN DISCONNECTED FOR YEARS
- EXCEPT FOR C&D & PERHAPS SOME COMMERCIAL ACTIVITY SUCH AS EATING OUT THAT REPRESENTS DISCRETIONARY SPENDING
- WSJ ON THE GROWTH OF SPENDING ON SERVICES (CELLPHONE CHARGES, HEALTH CARE, TRAVEL) AT THE EXPENSE OF CONSUMER GOODS
- PERHAPS 5% SHIFT AWAY FROM CONSUMER GOODS SINCE 2000.

SO…WHY IS "WASTE" GROWING SLOWLY?
THREE REASONS:
- THE EVOLVING TON
- SOURCE REDUCTION
- & ZERO WASTE

<u>LET'S START W/THE EVOLVING TON</u>

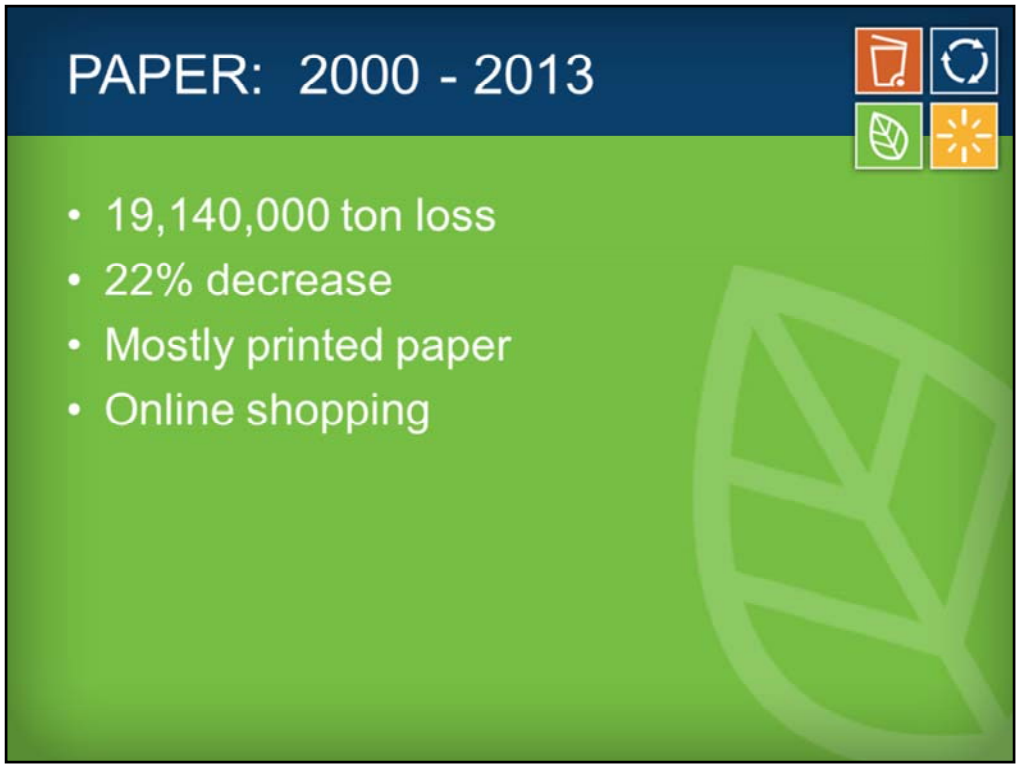
THE EVOLVING TON IS ABOUT CHANGES IN **OUR** RAW MATERIALS:

- LESS PAPER
- MORE PLASTIC
- ELECTRONICS PRODUCTS
- FUTURE PRODUCTS

(NOTE SOME SLIDES USING A DIFFERENT BACKDROP. THESE ARE SLIDES PREPARED BY DYLAN DETHOMAS EDITOR OF RESOURCE RECYCLING MAGAZINE FOR A WEBINAR THAT THE 2 OF US DID FOR EPA ABOUT 4 MONTHS AGO – I HAVE A LINK TO THAT WEBINAR IN MY POWER POINT TALKING POINTS FOR ANYONE WHO WOULD LIKE TO SEE IT)

https://www.epa.gov/smm/sustainable-materials-management-smm-web-academy-webinar-changes-waste-stream-future-curbside

<u>LET'S LOOK AT PAPER FIRST</u>



PAPER: PAPER GENERATION DOWN BY MORE THAN 19 MILLION TONS 2000 - 2013

- VIRTUALLY ALL OF THE PAPER LOSS IS IN **PRINTED** GRADES: NEWSPAPER, MAGAZINES, PRINTING & WRITING PAPER
- USE BITS & BYTES, NOT PAPER, TO TRANSMIT KNOWLEDGE
- *MORE DECLINES THIS YEAR & NEXT*
- THIS CHANGE IS IRREVERSIBLE
- WILL STABILIZE EVENTUALLY
- ONP 6 – 7 & 8 & MIXED PAPER 1, 2, & 3 DISAPPEAR AT THE END OF THIS YEAR
- REPLACED BY SORTED CLEAN NEWS – SORTED RESIDENTIAL PAPERS & MIXED PAPER

PAPER **PACKAGING**: CORRUGATED BOXES: DOING FINE THANKS TO ON-LINE SHOPPING

- *2016 FIRST QUARTER – 7.8% OF RETAIL SALES*

***NON-PRINTED OR PACKAGING PAPER**: (PLATES, TOWEL, TISSUE. ETC.) HOLDING STEADY*

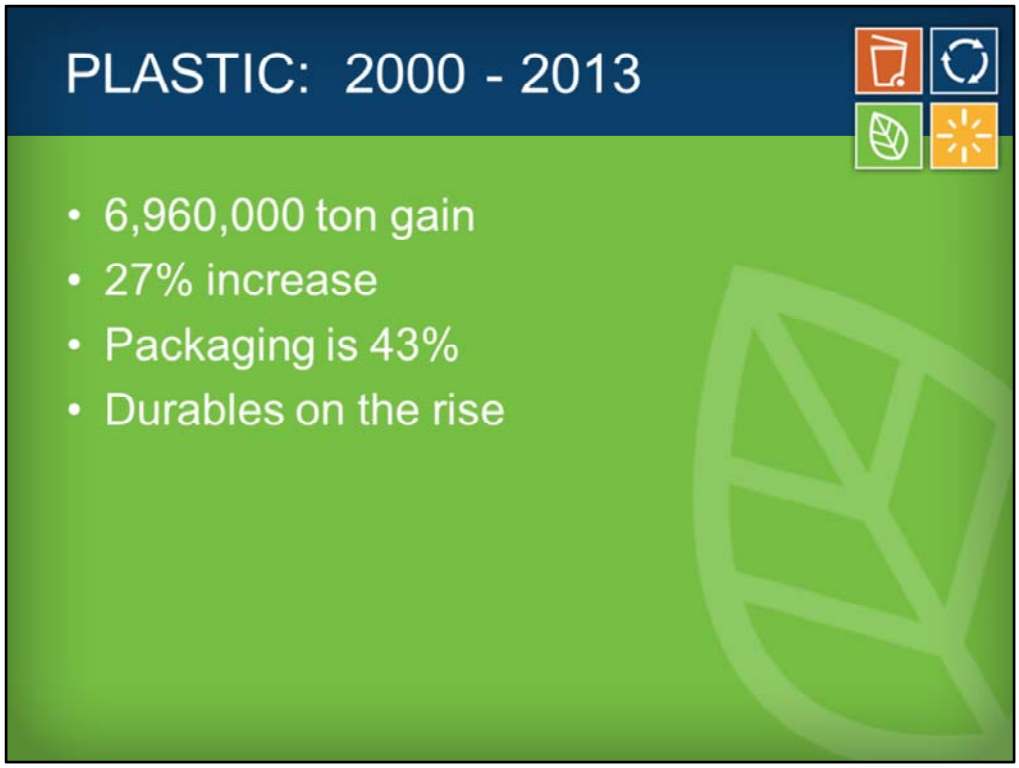
<u>WHAT ABOUT PLASTIC</u>?

***NOTE:** MRFS HAVE HISTORICALLY RELIED ON PAPER FOR BOTH TONNAGE & REVENUES*

POST OFFICE PEAKED IN 2006 WITH 213 BILLION PIECES OF MAIL & 13 MILLION TONS

- *2013: 158 BILLION PIECES & 10.2 MILLION TONS*

PAPER PACKAGING DOWN 1.38 MILLION TONS
TISSUE PAPER, PAPER PLATES, ETC. UP 450,000 TONS
GLOBAL PRODUCTION UP 0.2%: PACKAGING & TISSUE UP: GRAPHIC PAPER DOWN



PLASTIC: UP 6.9 MT: 27%

WHERE PLASTIC CAN BE FOUND IN THE WASTE STREAM HAS CHANGED DRAMATICALLY SINCE 2000

- **MORE DURABLES, LESS NONDURABLES & PACKAGING MARKET SHARE**
- *PACKAGING IS 43%:*
- *TONNAGE UP: 2.44 MILLION TONS: SHARE DOWN 2%*
- *NONDURABLES (FILMS, PLATES & CUPS, ETC.) ARE 20%*
- *TONNAGE UP: 300K TONS: SHARE DOWN 4%*
- *DURABLES (ELECTRONICS, FURNITURE, APPLIANCES, ETC.) ARE 37%*
- *TONNAGE UP: 4.3 MILLION TONS: SHARE UP 6%*

<u>LET'S LOOK AT ANOTHER EXAMPLE OF CHANGE</u>

ELECTRONICS: TOP VS BOTTOM
- CELL PHONE – VIDEO CAMERA – LAPTOP – WALKIE TALKIE – PHOTO CAMERA – WALKMAN – WATCH – PAGER
- ALL REPLACED BY A SMART PHONE THAT FITS IN YOUR POCKET

ELECTRONICS ARE *"DEMATERIALIZING"* – SMALLER & MORE SOPHISTICATED
- RECYCLING RATE UP, RECYCLING TONNAGE DOWN
- ONTARIO WILL NOT MEET ITS 2015 ELECTRONICS RECOVERY TARGET B/C TARGET WAS SET IN 2009 <u>BEFORE</u> THE INTRODUCTION OF TABLETS.

THE EVOLVING TON: THINGS CHANGE, DON'T THEY?

PROBLEM: LOOKING AT THE EVOLVING TON, WHO PREDICTED LESS PAPER, MORE PLASTICS OR THE iPHONE IN THEIR SOLID WASTE MANAGEMENT PLANS?
- OR THE IMPACT OF THESE CHANGES ON THE REVENUES OF MRFS?

HAVE TO STOP RELYING ON SOLID WASTE PLANS/STUDIES BASED ON THE IDEA THAT WHAT'S IN THE WASTE STREAM WILL NOT CHANGE & WILL INCREASE AT PREDICTABLE RATES
- STOP OVERPLANNING
- BECOME MORE FLEXIBLE

& LET'S THINK ABOUT IT – WHEN WILL 3-D PRINTING START HITTING THE WASTE STREAM?

<u>HOW DOES SOURCE REDUCTION FIT IN</u>?

I MENTIONED **SOURCE REDUCTION** AS A REASON FOR CHANGE

CHANGES TO ELECTRONIC PRODUCTS & THESE TWO WATER BOTTLES ARE A GOOD EXAMPLE OF LESS WASTE THROUGH LIGHTWEIGHTING PRODUCTS

HERE WE SEE A 5.4 GRAM REDUCTION OR 37% REDUCTION IN THE WEIGHT OF A WATER BOTTLE OVER A 7 YEAR PERIOD.

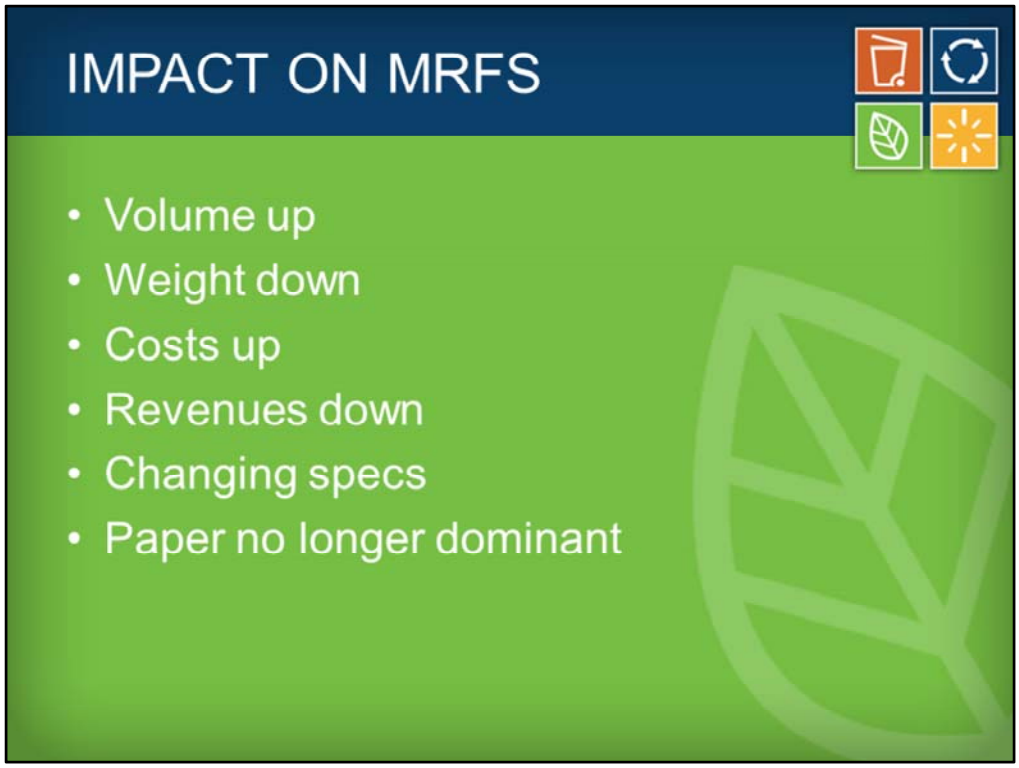
60% INCREASE IN THE NUMBER OF BOTTLES IN A TON OF PET
- 62,136 TO 98,607

ALSO IMPORTANT B/C BOTTLED WATER SALES ARE NOW GREATER THAN THOSE OF SOFT DRINKS
- NON CARBONATED DRINKS USE LIGHTER PACKAGES THAN CARBONATED BEVERAGES

SAME IMPACT ON ALUMINUM CAN
- LIGHTWEIGHTING LEAD TO COLLAPSE OF BUYBACKS B/C TOO MANY CANS IN A POUND

GREAT FOR THE ENVIRONMENT:
- LESS MATERIALS USED, LESS ENERGY TO TRANSPORT, ETC.

BAD FOR MRFS & RECYCLING RATES



VOLUME UP (37%)
WEIGHT DOWN (UP 8%, BUT DOWN IN TERMS OF SHARE)
COSTS UP *(20% INCREASE 2008 – 2015 RRS)*
REVENUE DOWN
SPECS ARE CHANGING

PROCESSING IS MORE EXPENSIVE AS INCOMING STREAM HAS PROPORTIONALLY MORE LIGHTER PLASTIC & HEAVIER GLASS

- PROCESSING LINES SLOWER
- MUST BE MORE PRECISE
- QC MORE INTENSE

PAPER IS A SMALLER COMPONENT IN BOTH TONNAGE & VOLUME

- FROM 80% TO 2/3s OR 50% LESS
- MORE BROWN PAPER IN THE MIX AS RESIDENTIAL PROGRAMS COLLECT MORE BOXES

PLASTIC & GLASS ARE A BIGGER COMPONENT AT MRFS

- FROM 20% TO 1/3 OR >

<u>ZEROO WASTE IS ANOTHER IMPORTANT FACTOR ON LESS WASTE</u>

"ZERO" WASTE IS SIMPLY SMART CAPITALISM
- TURN A COST CENTER INTO AN ASSET/REVENUE CENTER

BUSINESSES HAVE NATURAL ADVANTAGES IN ACHIEVING ZERO WASTE:
- THEY CONTROL WHAT COMES INTO THEIR FACILITIES & WHAT GOES OUT
- THEY ARE PROFIT MOTIVATED
- THEY CAN REWARD INDIVIDUALS WHO ACHIEVE GOALS THROUGH BONUSES

LOCAL GOVERNMENTS HAVE LIMITED OPTIONS:
- *PAYT*
- *TAXES: LESS DISPOSABLE INCOME*

- *GRASSCYCLING/BACKYARD COMPOSTING*

THE ADOPTION OF ZERO WASTE BY INDUSTRY IS THE BIGGEST UNTOLD STORY OF WASTE MANAGEMENT

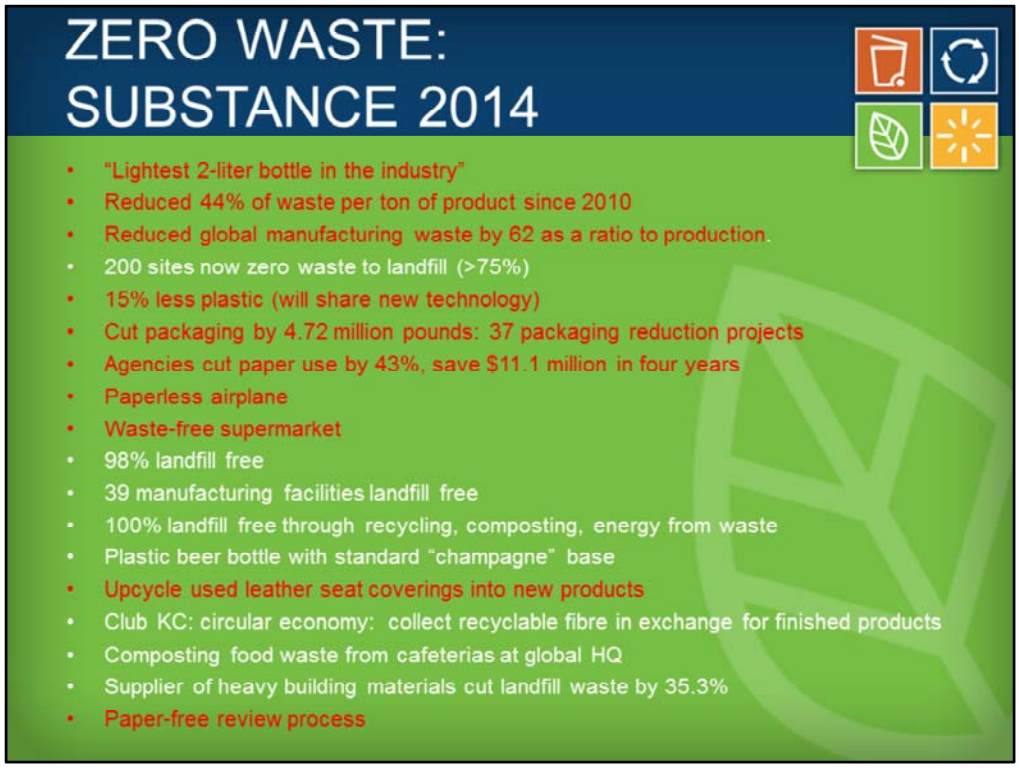
<u>LET'S SEE SOME EXAMPLES</u>

ZERO WASTE FIRST HIT THE NEWS W/THE LANDFILL FREE SUBARU COMMERCIALS

- NOW ITS EVERYWHERE

THIS SLIDE IS SOME COMPANIES IN THE NEWS FOR THEIR “ZERO WASTE” ACCOMPLISHMENTS IN THE MIDDLE 6 MONTHS OF LAST YEAR

<u>THE NEXT SLIDE SHOWS WHAT THEY HAVE DONE</u>



DOVE BODY WASH: BREAKTHROUGH IN BOTTLE TECHNOLOGY WHICH USE GAS-INJECTION TO CREATE GAS BUBBLES IN THE MIDDLE LAYER OF THE BOTTLE WALL & REDUCE THE DENSITY OF THE BOTTLE & THE AMOUNT OF PLASTIC REQUIRED

HORMEL: 4.7 MILLION POUNDS (2350 TONS) LESS MATERIAL USE IN 2013 THROUGH 37 SUCCESSFUL PACKAGING REDUCTION ENGINEERING PROJECTS:

- *1.2 MILLION POUND SAVING BY SWITCHING TO INDUSTRY STANDARD TOTE BIN DESIGN WHICH ELIMINATED AN INTERNAL INSERT*
- *800,000 POUNDS BY REDUCING DELI MEAT PACKAGING FROM 8 INCHES TO 6.55 INCHES WIDE (HARDER TO OPEN?)*
- *REDESIGNED CASE PACKER & PALLETIZER FOR COOKED HAMS LINE: SAVE 596,000 POUNDS OF PACKAGING*
- *OPTIMIZED SHIPPING CASE DESIGN FOR 1-LB BACON FROM A FULL-OVERLAP CASE TO A 1-INCH CASE SAVING 364,000 POUNDS*
- *SUBSTITUTED FULLY PRINTED FILM FOR A PAPER CARRIER BOARD IN 1-POUND TURKEY BACON SAVING 314,000 POUNDS*

THE GIFT THAT KEEPS GIVING

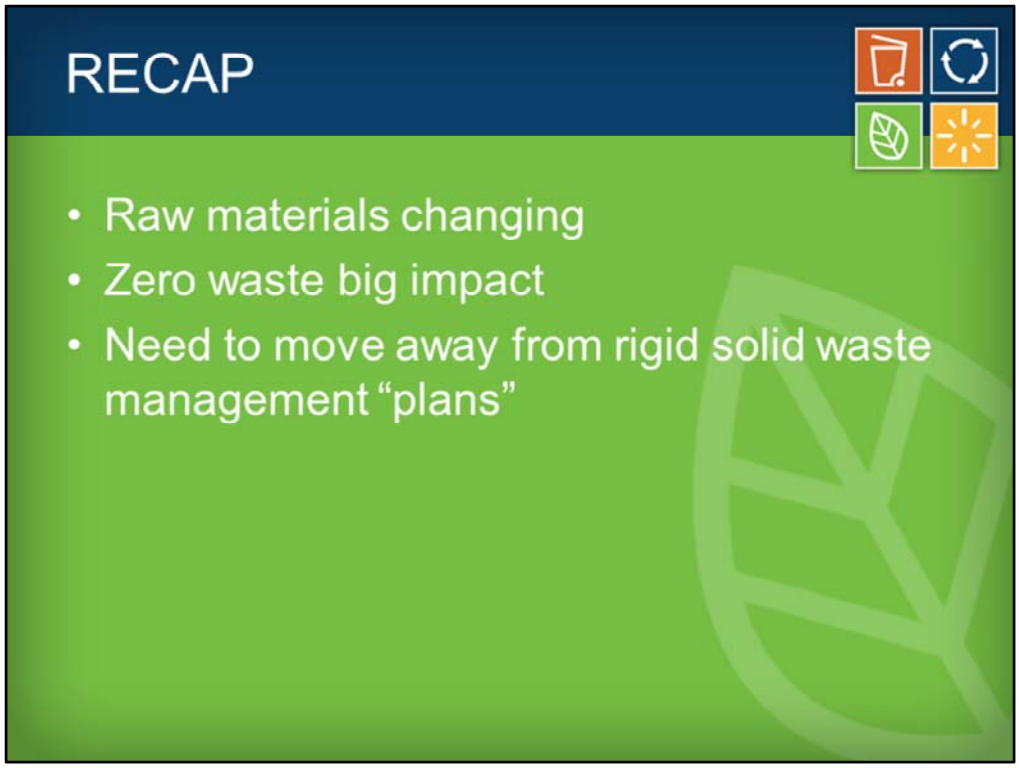
EASYJET ELIMINATING 25 KG OF PAPER: FORMS, CHECKLISTS, DETAILED MANUALS BY USING E-PAPER TECHNOLOGY (PANASONIC TOUCHPADS) WHICH REPLACE LAPTOPS AND PRINTED NAVIGATIONAL CHARTS IN COCKPITS

- *SAVE $500,000 IN FUEL COSTS: 220 AIRBUS*

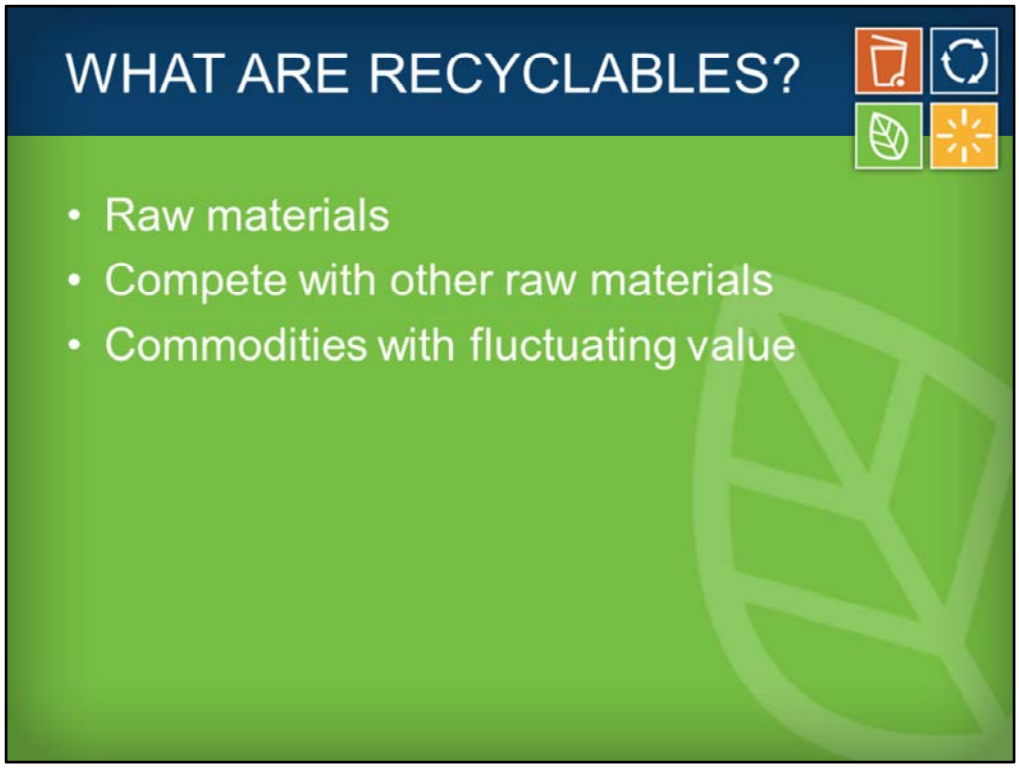
GERMAN WASTE FREE SUPERMARKET SELLS PRODUCE & WATER FROM BULK BINS & REFILL LINES

- *CUSTOMER BRINGS OWN CONTAINERS, BORROWS A REUSABLE CONTAINER FROM THE STORE OR USES BAGS MADE FROM RECYCLED PAPER (FOR ITEMS SUCH AS CLEANING SUPPLIES)*
- *OVERBUYING IF IN BULK?*
- *A SIMILAR STORE IN BRITAIN: UNPACKAGED – LASTED A YEAR BUT HOPES TO REOPEN THIS FALL*

<u>SUMMARY</u>



<u>THESE CHANGES SHOULD REMIND US OF A CRUCIAL REALITY ABOUT RECYCLING</u>



RECYCLABLES ARE RAW MATERIALS: NOTHING MORE NOTHING LESS

- THEY COMPETE WITH OTHER RAW MATERIALS FOR BUYERS
- THEY ARE COMMODITIES W/FLUCTUATING VALUES

WE KEEP FORGETTING THAT RECYCLABLES ARE SIMPLY RAW MATERIALS THAT COME FROM YOU & I & THAT GO TO BUYERS WHO HAVE A NEED FOR THEM & FIND A VALUE IN THEM

YES RECYCLING CREATES JOBS

- *BUT SO DO THOSE OTHER RAW MATERIAL SUPPLIERS*

YES RECYCLING LOWERS GREENHOUSE GAS EMISSIONS

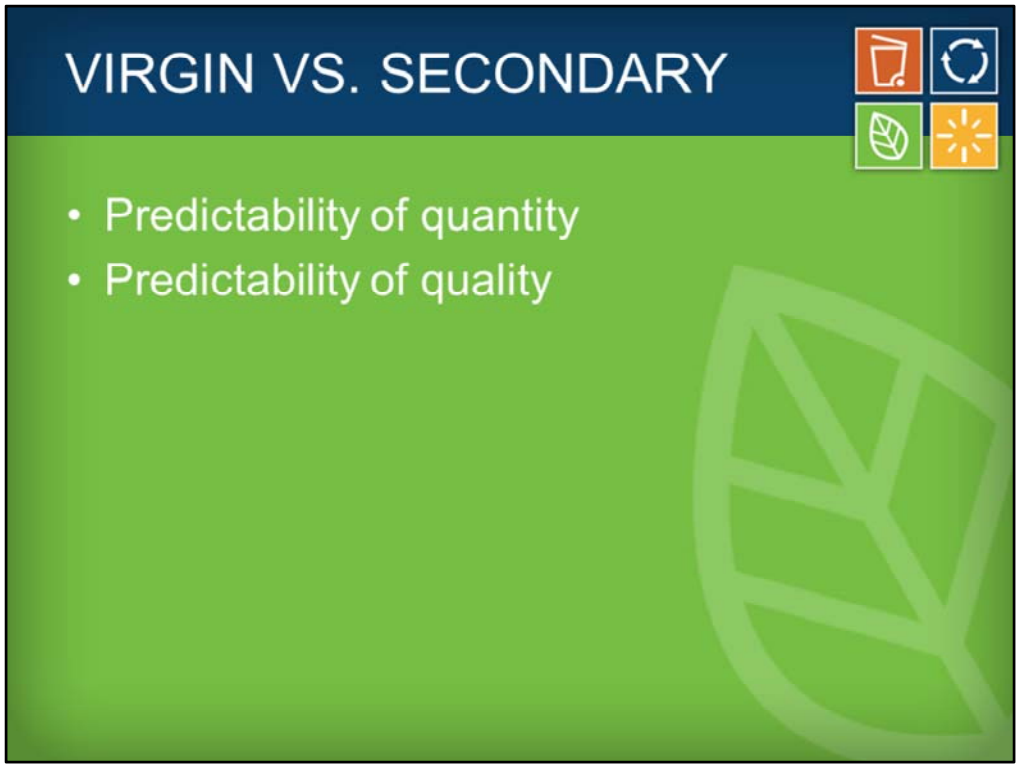
- *BUT DON'T KNOW HOW TO MONETIZE*

YES RECYCLING LEADS TO AVOIDED DISPOSAL COSTS

- *BUT DOES NOT ELIMINATE DISPOSAL*

IN SPITE OF ALL OF THE REASONS TO RECYCLE, THE EFFORT IS USELESS W/O A BUYER WHO NEEDS A RAW MATERIAL

<u>WHAT MATERIALS COMPETE W/RECYCLABLES</u>?



VIRGIN RAW MATERIALS HAVE TWO TREMENDOUS ADVANTAGES OVER RECYCLABLES/SECONDARY RAW MATERIALS

VIRGIN RAW MATERIALS HAVE A GOOD REPUTATION FOR PREDICTABLE QUANTITY & QUALITY

- THESE ARE ATTRIBUTES HIGHLY PRIZED BY PROCUREMENT & OPERATIONAL STAFF

ALTHOUGH THE QUANTITY OF RECYCLABLES HAS BECOME MUCH MORE PREDICTABLE

- QUALITY REMAINS A PROBLEM
- NO PRODUCTION MANAGER WANTS TO GAMBLE W/INPUT

BOTTOM LINE: MUST DELIVER A QUALITY PRODUCT TO A BUYER IN DEPENDABLE QUANTITIES

<u>WHAT IS THE CHALLENGE OF MARKETS</u>?

LET'S LOOK AT THE SECOND CHALLENGE: MARKETS

PRETTY MUCH SUMS IT UP FOR MOST RECYCLABLES

WE KEEP FORGETTING THAT RECYCLABLES ARE COMMODITIES & THEY FLUCTUATE IN VALUE MORE THAN OTHER COMMODITIES

- ROLLER COASTERS ARE INEVITABLE
- *EREF/NCSU 2001* STUDY ON THE PRICE VOLATILITY OF RECYCLABLES
- "**MOST OF THE RECYCLABLE PRICE SERIES HAVE VARIANCES GREATER THAN OR IN THE TOP EXTREME OF THE COMPARISON RANGE**
- **RECYCLABLE PRICES ALSO HEAVILY INFLUENCED BY VIRGIN MATERIAL PRICES**
- THEY ARE AT THE TAIL END OF THE RAW MATERIAL VAL.UE CHAIN

MARKET PREDICTIONS: WASTEEXPO:

- PAPER STAY AT CURRENT LEVELS OR GO UP A LITTLE BIT NEXT 3 OR 4 YEARS
- PLASTIC? SOME REBOUND

OCC FROM ABOUT $150/TON AT ITS HEIGHT IN THE 3D QUARTER OF 2011 TO ABOUT $112 /TON LAST YEAR HIT $80(+) NOW 100
MIXED PAPER DOWN 10% $52 - $47 (RISI) – UP TO 69
HDPE: CURBSIDE: $0.31.1 TO $0.24.3 TO $0.30.9 IN SIX MONTHS (RB)
HDPE: CLEAR: $0.40 TO $0.29: 27% FALL BUT HIT BOTTOM IN JANUARY & NOW BACK UP (RB)
HDPE: COLORED: $0.276 TO $0.276 BUT HIT BOTTOM IN JANUARY & NOW BACK UP (RB)
PET: DOWN 58% IN ONE YEAR FROM $0.219 TO $0.138 (RB)
FERROUS DOWN $100/TON IN THE MONTH OF MARCH (RT) 2014:350 – 250 - FURTHER DECLINES UP 100 SINCE NOV 2015 $250
ALUMINUM DOWN FROM $0.776 PER POUND TO $0.657 PER POUND: DECEMBER TO JUNE (Rrb)

<u>MARKET PROBLEMS & HOW TO FIX RECYCLING IS NOTHING NEW</u>

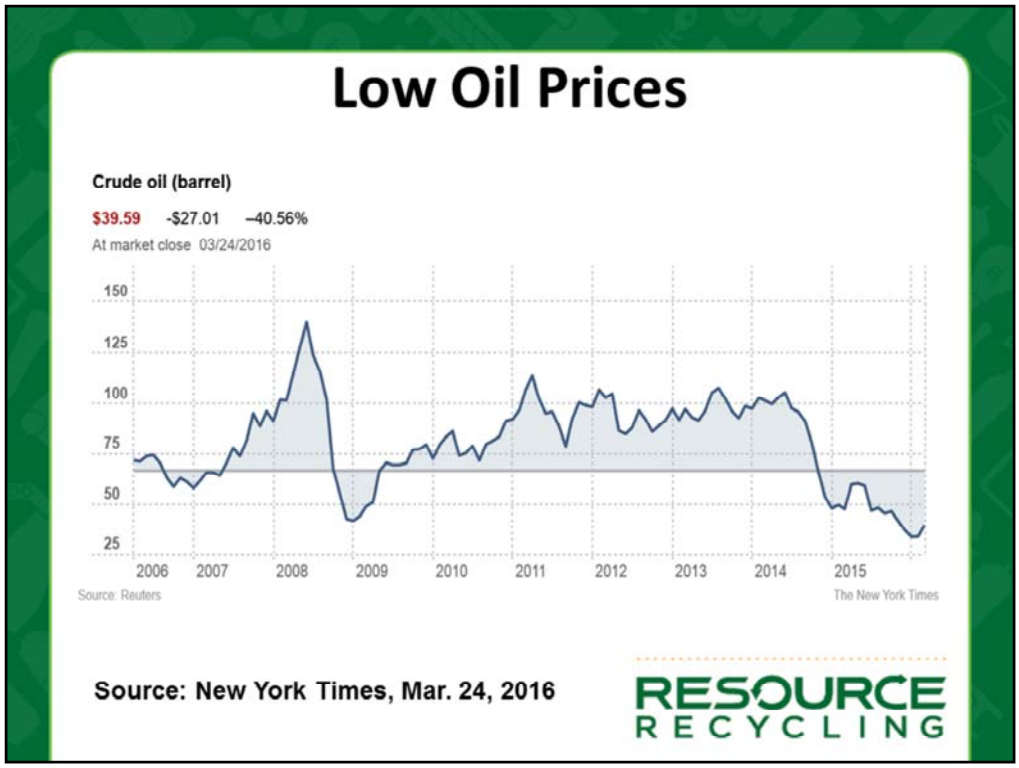
NOTHING NEW OR UNIQUE ABOUT THIS

- 1998 WHITE HOUSE CONFERENCE
- HELD B/C RECYCLING IN CRISIS
- *THOSE WHO DO NOT REMEMBER THE PAST ARE DOOMED TO REPEAT IT*

TODAY: SOME OF THE SAME PROBLEMS & SOME NEW ONES FOR MARKETS

PRICE OF OIL
STRONG DOLLAR
CHINA
PRODUCTION OVERCAPACITY
SUPPLY & DEMAND

<u>LET'S LOOK AT OIL</u>



CLOSE CORRELATION OF PRICE OF OIL & AVERAGE MARKET PRICE FOR RECYCLABLES

- THINK ABOUT IT: ENERGY IS THE MOST IMPORTANT COST IN THE EQUATION: COLLECTION PROCESSING MANUFACTURING
- CHEAP OIL LOWERS ALL COSTS
- FOR PLASTICS LOWERS PRICE OF VIRGIN

BIG QUESTION: WHERE IS THE PRICE OF OIL GOING?

<u>SECOND FACTOR: WE HAVE A GLOBAL ECONOMY</u>

STRONG U.S. DOLLAR MAKES EXPORTS MORE EXPENSIVE

- DOLLAR UP 28.4% SINCE ITS LOW IN JULY 2011 (94.0053: NOW 120.7378)
- *HIGH WAS $125.6227 IN JAN 27 2016)*

<u>CHINESE APPETITE FOR OUR RECYCLABLES HAS CHANGED</u>

EXPORT MARKETS DRIVE RECYCLING & CHINA DRIVES EXPORT MARKETS

- 40% OF RECYCLED PAPER IS EXPORTED & THE SAME FOR PET
- ABOUT 28% OF THE PAPER WE COLLECT FOR RECYCLING GOES TO CHINA
- ABOUT THE SAME FOR PET

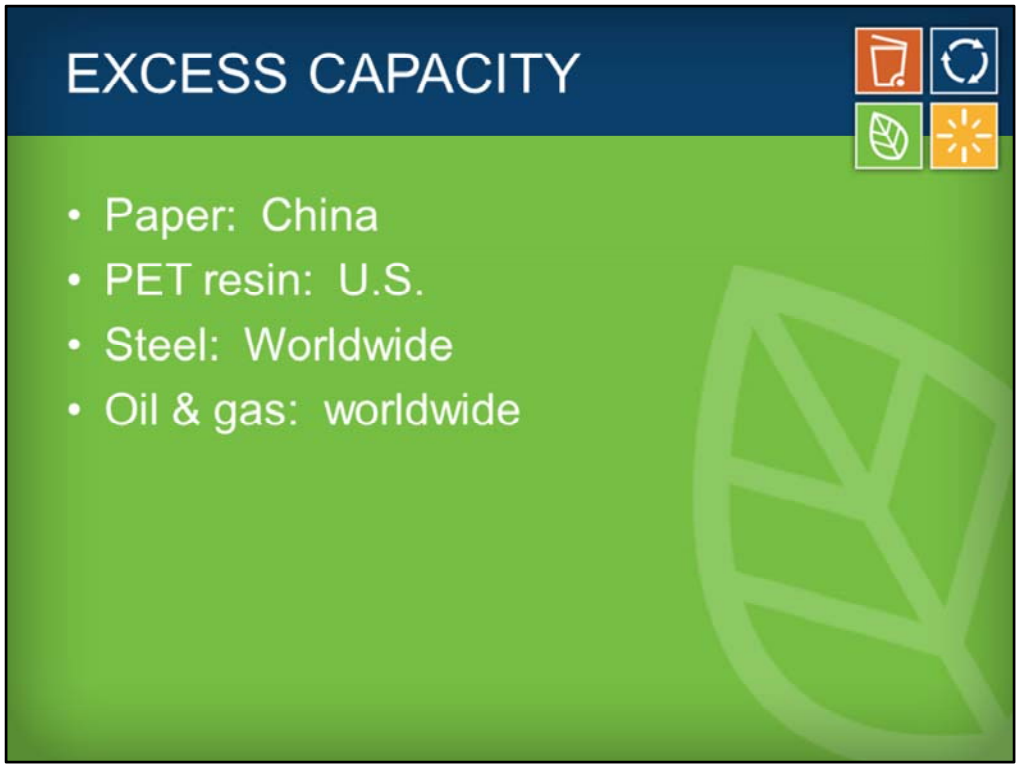
CHINA IS CHANGING

NOT ONLY WAS THE SO-CALLED GREEN FENCE WAS AN INEVITABLE REACTION TO POOR QUALITY BALES

CHINESE MARKETS NEED FEWER IMPORTED RECYCLABLES FOR A NUMBER OF REASONS

- A SLOWDOWN IN THE GROWTH OF THE CHINESE ECONOMY
- INCREASED DOMESTIC SUPPLIES OF RECYCLABLES
- EXCESS INTERNAL PRODUCTION CAPACITY (PAPER IN MID 80'S OPERATING RATE?)

<u>EXCESS PRODUCTION CAPACITY IS PROBABLY THE BIGGEST PROBLEM FACING RECYCLING MARKETS</u>



PAPER: CHINA OVERCAPACITY
PET: US OVERCAPACITY
STEEL: WORLD OVERCAPACITY
OIL & GAS: WORLDWIDE

EXCESS PRODUCTION CAPACITY: HAVING THE ABILITY TO PRODUCE MORE GOODS THAN THE MARKET WANTS - INEVITABLY LEADS TO LOWER RAW MATERIAL PRICES

- ALWAYS FIXES ITSELF THROUGH PLANT CLOSURES OR DEMAND CATCHING UP W/SUPPLY
- TAKES TIME

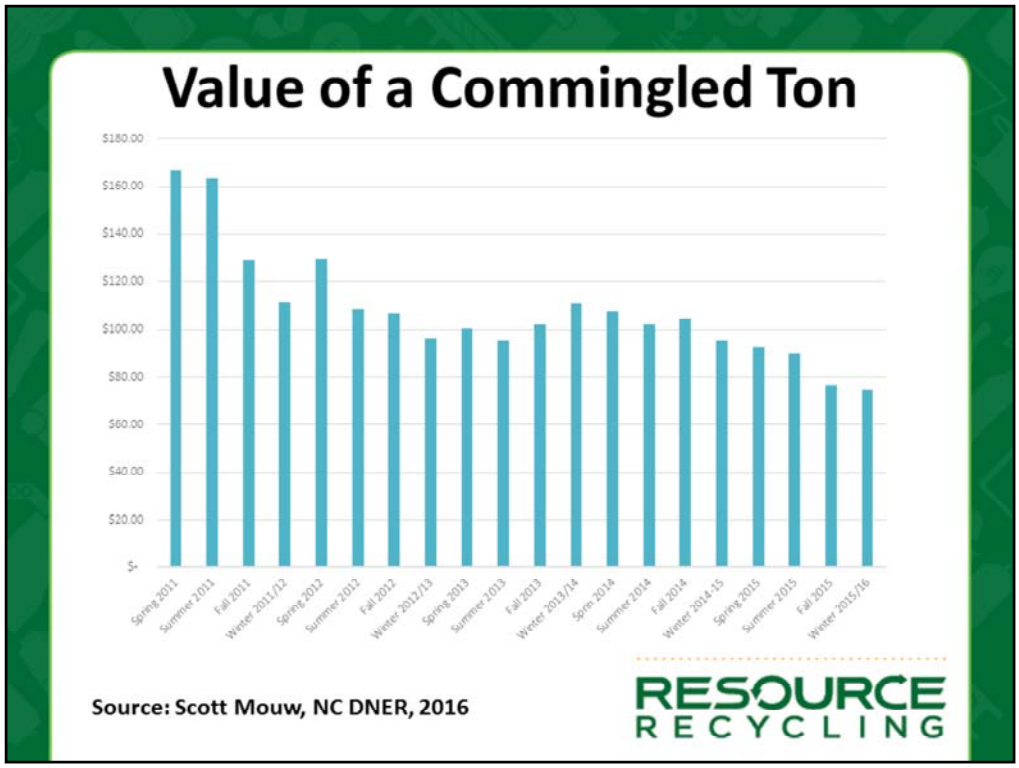
PAPER CAPACITY IS SLOWLY IMPROVING

- US NEWSPRINT MILLS CONVERT TO PACKAGING GRADES
- CHINA CLOSING SMALL MILLS

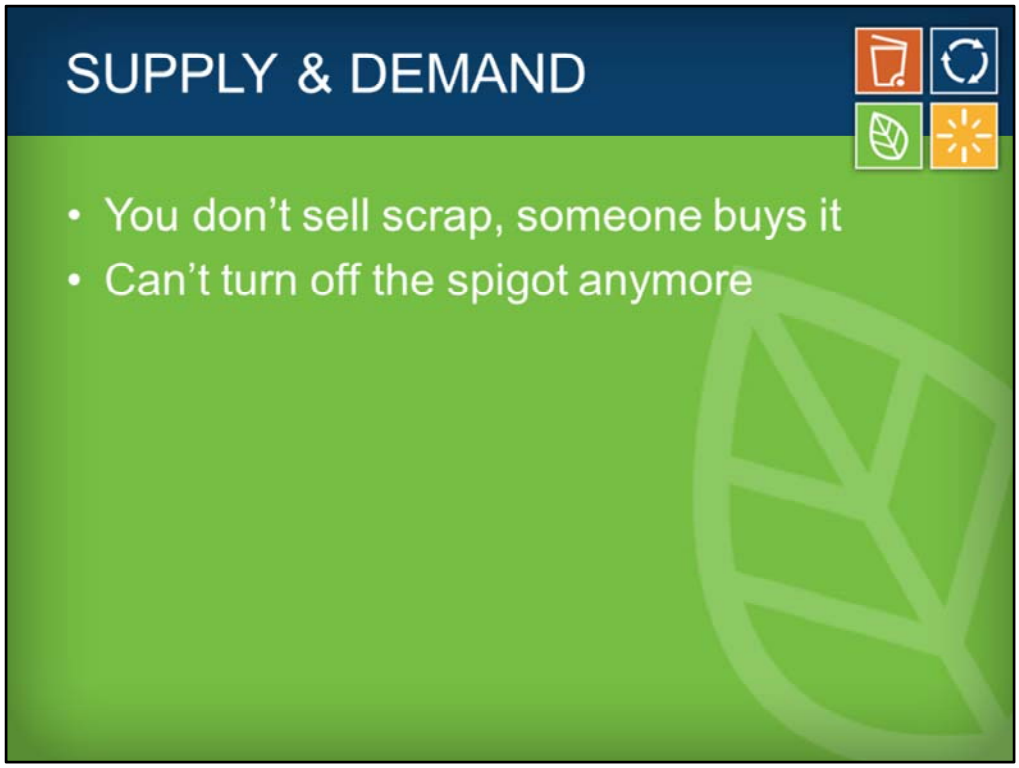
PLASTICS, ESPECIALLY PET HURT BY OVERCAPACITY OF VIRGIN PET

- WILL GET WORSE OVER THE NEXT YEAR AS NEW CAPACITY COMES ON LINE

<u>ALL THIS MEANS</u>



ANOTHER PART OF THE REASON FOR THE DECLINE IN MARKET VALUE IS THAT WE HAVE TAMPERED W/THE FUNDAMENTALS OF SUPPLY & DEMAND



RECYCLERS HAVE A SAYING – YOU DON'T SELL SCRAP, SOMEONE BUYS IT

IN THE PAST WHEN RECYCLING WAS STRICTLY MARKET BASED, RECYCLERS WOULD RESPOND TO LOW DEMAND BY REDUCING THEIR PRICES IN ORDER TO DISCOURAGE SELLERS

- WHEN DEMAND INCREASED, THEY WOULD RAISE PRICES

RECYCLING IS NO LONGER MARKET BASED

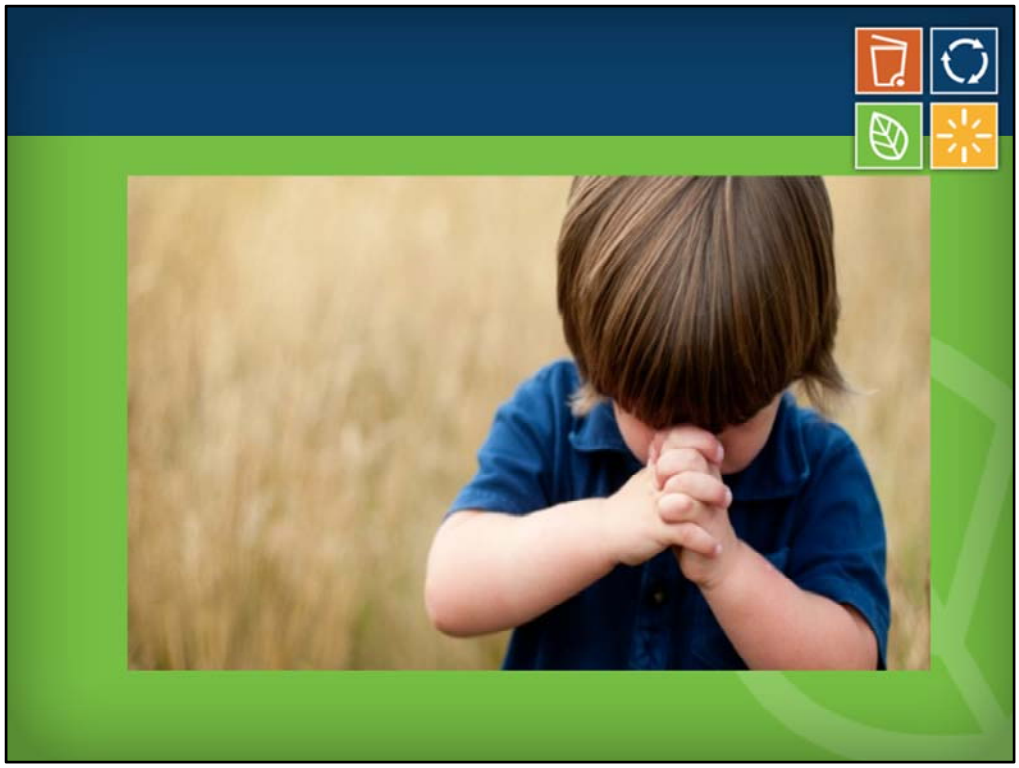
- DRIVEN BY STATE RECYCLING LAWS & IMPROVED COLLECTION TECHNIQUES

SUPPLY DRIVEN, NOT DEMAND DRIVEN

- **AS A RESULT WHEN DEMAND GOES DOWN**
- **PRICES GO DOWN**
- **BUT THE SUPPLY KEEPS GUSHING FORTH**

ALL THIS RAISES A QUESTION:

<u>HOW CAN WE DEAL WITH THE IMPACT OF BAD MARKETS ON RECYCLING PROGRAMS</u>?



WELL WE DO HAVE SOME OPTIONS.

THE FIRST & PERHAPS MOST IMPORTANT IS TO COME CLEAN & ADMIT THAT RECYCLING COSTS MONEY

WE NEED TO REMIND OUR CUSTOMERS THAT RECYCLING – LIKE WASTE SERVICES – IS NOT FREE

WE NEED TO CONTRACT SMARTER:

- APRIL 2015 - "JOINT ADVISORY ON DESIGNING CONTRACTS FOR PROCESSING OF MUNICIPAL RECYCLABLES"
- http://wasterecycling.org/images/documents/resources/SWANA-NWRA-Recycling-Doc.pdf

TWO NEW ADDENDA: The Joint Advisory on Designing Contracts for Processing of Municipal Recyclables Attachment 1:
Understanding Material Composition – Stream Composition Study
(https://wasterecycling.org/images/documents/our-work/advocacy-issues/Material_Composition_Audits_Final.pdf) &
The Joint Advisory on Designing Contracts for Processing of Municipal Recyclables Attachment 2:
Methods of Determining the Value of Recyclables Handled at a Processing Facility
(https://wasterecycling.org/images/documents/our-work/advocacy-issues/Recyclables_Value_Final.pdf)

WE NEED BETTER EDUCATION ON HOW TO RECYCLE RIGHT

WE NEED BETTER ENFORCEMENT

BUT NOT TOO HEAVY HANDED

- *LIGHT HANDED ENFORCEMENT GOES ALONG W/EDUCATION*
- *OOPS TAGS TO DON'T COLLECT*

GOAL: CREATE A SOCIAL NORM FOR RECYCLING

TAKES TIME

- **HAVE IT FOR SINGLE FAMILY DETACHED HOUSING IN TERMS OF PARTICIPATION IF NOT IN TERMS OF ALWAYS DOING IT RIGHT**
- **HAVE IT FOR COMMITTED BUSINESSES**
- **DON'T HAVE IT FOR MULTI-FAMILY HOUSING OR MANY SMALL BUSINESSES OR PUBLIC SPACE**

BUT FIRST LET'S RECAP

MARKETS DOWN

SUPPLY NOT CONNECTED TO DEMAND

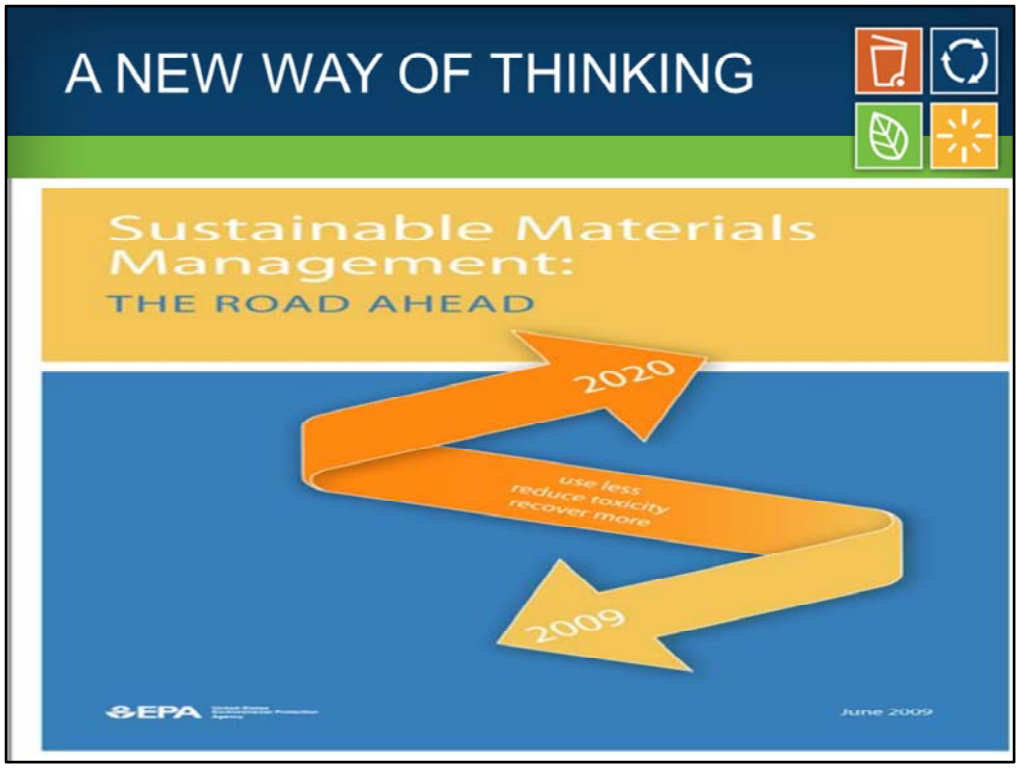
CONTRACT SMARTER

EDUCATE & ENFORCE

AND NOW….

THE LAST – MOST INTERESTING CHALLENGE

A VERITABLE PARADIGM SHIFT IN HOW WE LOOK AT WHAT WE DO



EPA LAUNCHED ITS THINKING ON THIS ISSUE IN 2009 W/THE PUBLICATION OF SUSTAINABLE MATERIALS MANAGEMENT: THE ROAD AHEAD

- https://www.epa.gov/smm/sustainable-materials-management-road-ahead

OREGON BECAME THE FIRST STATE TO ADOPT THIS NEW WAY OF THINKING W/LEGISLATION IT PASSED LAST YEAR:

- SB 263: 2015

<u>WHAT IS SUSTAINABLE MATERIALS MANAGEMENT</u>?

EPA DEFINITION OF MM (FROM OPPORTUNITIES TO REDUCE GREENHOUSE GAS EMISSIONS THROUGH MATERIALS & LAND MANAGEMENT PRACTICES).

- *Use materials in the most productive way with an emphasis on using less;*
- *Reduce toxic chemicals and environmental impacts throughout the material life cycle;*
- *Assure we have sufficient resources to meet today's needs and those of the future*

LIFE CYCLE IS THE KEY

- WHAT IS THE BIGGEST ENVIRONMENTAL BENEFIT FROM BEGINNING TO END

<u>THIS RAISES SOME KEY QUESTIONS</u>

IS 100% RECYCLING & COMPOSTING THE ULTIMATE GOAL?

- *END OF THE PIPELINE WASTE MANAGEMENT VIA INCREASED RECYCLING & COMPOSTING*

OR

LESS OVERALL WASTE IN THE ECOSYSTEM ?

- *LOWERING THE EXTRACTION OF RAW MATERIALS & ENERGY USED IN MANUFACTURING & TRANSPORTATION*
- *EVEN THOUGH SOME OF THOSE PRODUCTS CANNOT BE RECYCLED & MUST BE DISPOSED?*

SUSTAINABLE MATERIALS MANAGEMENT IS FUNDAMENTALLY ANTI-HIERARCHICAL ALTHOUGH IT DOES HAVE PREFERENCES

- BOTTOM LINE IS SIMPLE: LESS IMPACT ON THE ENVIRONMENT & LET THE CHIPS FALL WHERE THEY MAY
- BEWARE “SMM” PLANS THAT ARE REALLY THE OLD IWM/SWM PLANS W/A NEW NAME

<u>LET’S LOOK AT THE POTENTIAL IMPACT OF SUSTAINABLE MATERIALS MANAGEMENT FROM THE PERSPECTIVE OF TWO HOT ISSUES FACING RECYCLING</u>:

- FLEXIBLE PACKAGING
- HOW WE MEASURE “SUCCESS”

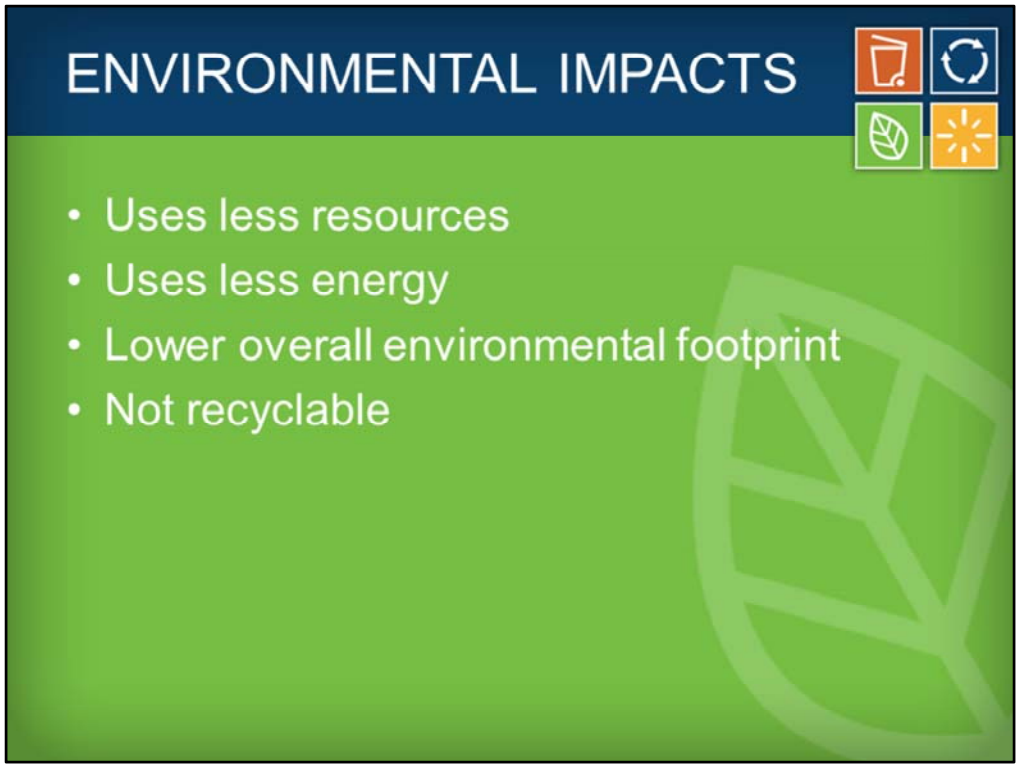
FLEXIBLE PACKAGING: THE FASTEST GROWING PACKAGE
18% OF THE PACKAGING MARKET (CORR 23%, RIGID PLASTICS 16%, METAL CANS 13%, PAPERBOARD 12%, GLASS 4%, OTHER 14%)

FLEXIBLE PACKAGING HAS NO SHAPE OF ITS OWN

- MOSTLY PLASTIC *(69%)* BUT CAN INCLUDE PAPER *(15%)* FOIL *(4%)* & ADHESIVES, COATINGS & INKS *(12%)*
- TECHNOLOGICALLY ADVANCED
- MULTI-LAYER & MULTI-RESIN
- BARRIER LAYERS & TIE LAYERS

CAN’T BE RECYCLED

<u>SO WHY ARE BUSINESSES USING FLEXIBLE PACKAGING</u>?



TREMENDOUS ENVIRONMENTAL & ENERGY SAVING BENEFITS

- LIGHTER WEIGHT
- CAN SHIP MORE PRODUCT USING LESS ENERGY
- DISPLACE HEAVIER GLASS & METAL & PAPER & PLASTIC PACKAGES
- LESS ENVIRONMENTAL IMPACT THAN THE RECYCLABLE PACKAGES THEY DISPLACE
- CREATES LESS OVERALL WASTE THAN THOSE RECYCLABLE PACKAGES B/C NOT RECYCLED AT 100%

<u>NOT CURRENTLY RECYCLABLE</u>

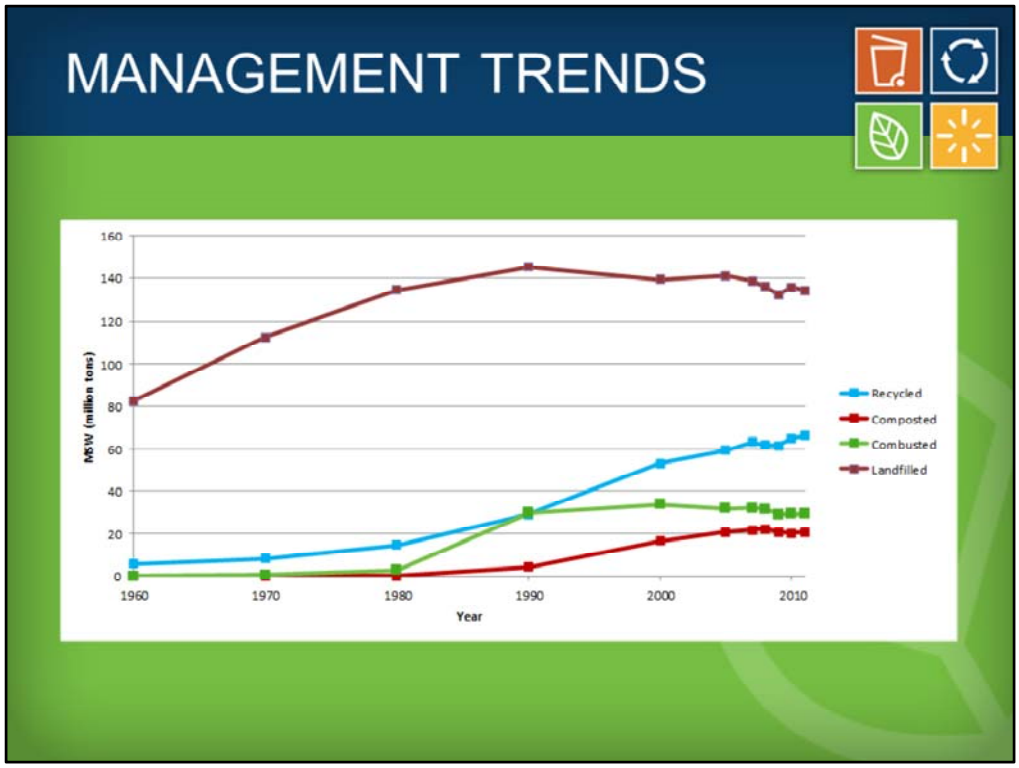
- *NOTE: DOW HAS CLAIMED BREAKTHROUGH W/A RECYCLABLE POUCH FOR DRY CEREALS AND OTHER DRY PRODUCTS*
- *WHERE IS THE RECYCLING INFRASTRUCTURE*

WHICH RAISES A QUESTION: IS THIS GOOD OR BAD?

- LOWER ENVIRONMENTAL FOOTPRINT SHOULD BE OUR GOAL

IF YOU SUPPORT OUR EVOLUTION TO SUSTAINABLE MATERIALS MANAGEMENT IT IS AN INEVITABLE TRADEOFF

<u>WHAT ABOUT HOW WE MEASURE “SUCCESS”</u>?

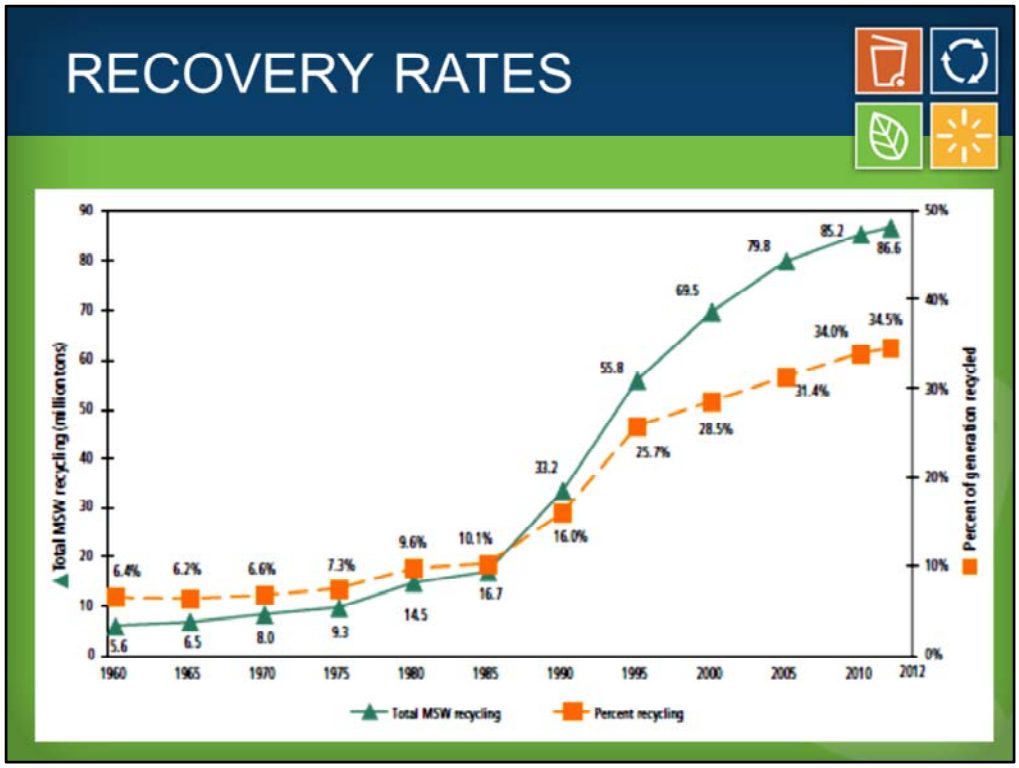


EPA DATA FOR DISPOSAL & RECOVERY

DISPOSAL: LANDFILLING & ENERGY FROM WASTE PEAKED IN 1990
- SLOW DECLINE SINCE

RECYCLING & COMPOSTING BOTH ROSE DRAMATICALLY
- *RECOVERY TONNAGE INCREASED BY 161%*
- *RECOVERY RATE INCREASED BY 107%*

<u>SEGUE: LET'S LOOK AT THE RECOVERY RATES MORE CLOSELY</u>



NATIONAL RECOVERY (RECYCLING & COMPOSTING) DATA 1960 – 2012

- TOP LINE IS TONNAGE
- BOTTOM LINE IS PERCENTAGE

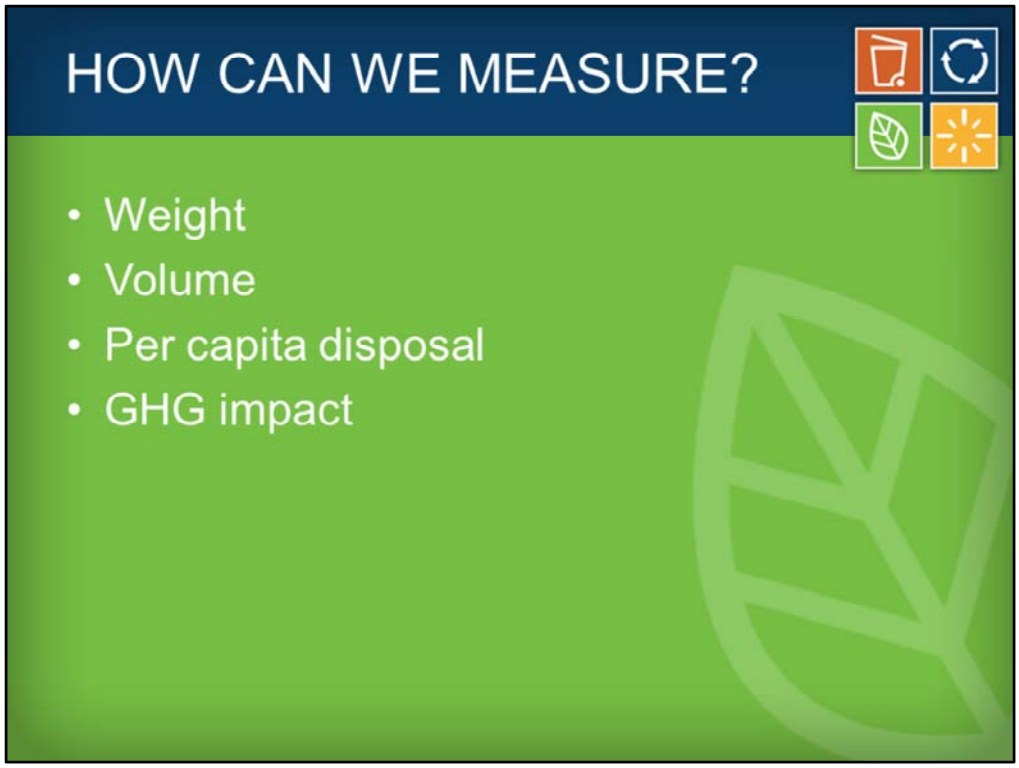
OUT OF 250 MILLION TONS OF GARBAGE:

- WE RECYCLED 87 MILLION TONS
- 35%

AFTER SUCH A DIZZYING RISE FROM 1985 TO 2005, RECOVERY HAS SLOWED DOWN

- LESS PAPER & LIGHTERWEIGHT PACKAGING & ZERO WASTE
- IF SAME AMOUNT OF PAPER, RECOVERY RATE WOULD BE 6% HIGHER

W/ALL OF THOSE CHANGES, IS WEIGHT THE BEST WAY TO MEASURE?



WEIGHT-BASED REPORTING IS THE TRADITIONAL WAY TO MEASURE RECYCLING

- ALONG W/THE EVOLVING TON ONE OF THE REASONS THE RECYCLING RATE IS STAGNANT
- WORSE YET, A TON IS A TON IS A TON W/NO RELATIONSHIP TO THE **ENVIRONMENTAL** IMPACT OF RECYCLING A PARTICULAR MATERIAL

VOLUME-BASED IS AN OPTION

- DIFFICULT TO DO
- NO RELATIONSHIP TO THE **ENVIRONMENTAL** IMPACT OF RECYCLING A PARTICULAR MATERIAL

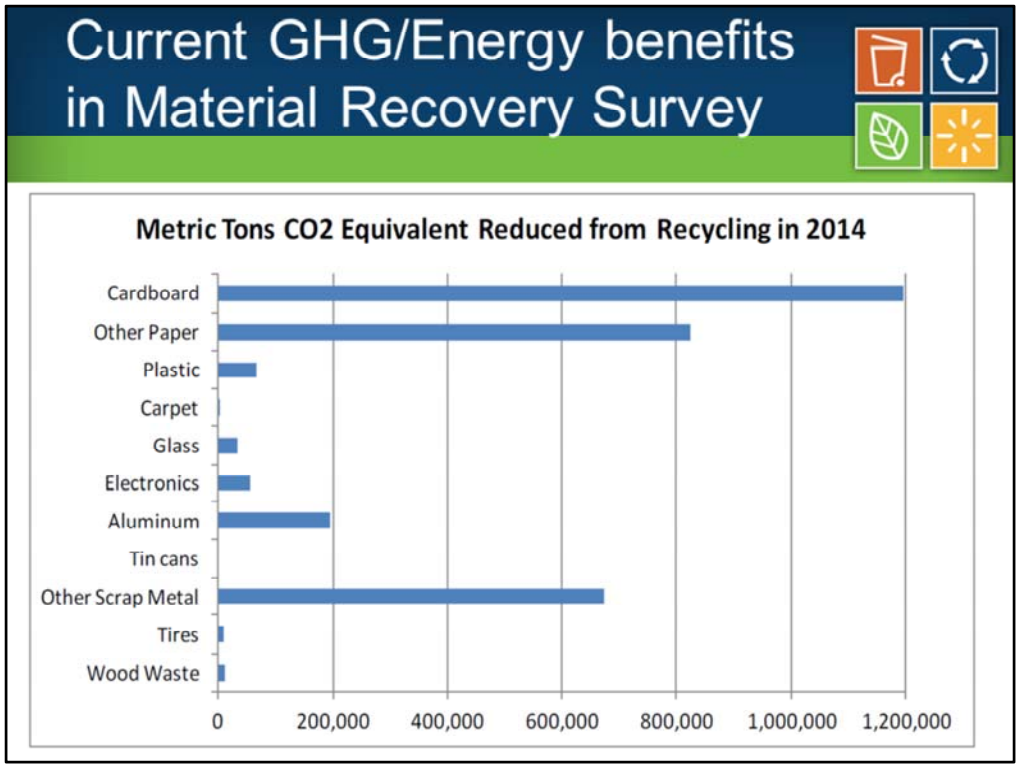
PER CAPITA DISPOSAL:

- CALIFORNIA
- HYBRID DEFINITION
- HOW KEEP NON-MSW OUT

GHG IMPACT IS AN INTERESTING NEW OPTION

- OREGON'S NEW LAW REQUIRES DEQ TO ESTABLISH "OUTCOME-BASED WASTESHED RECOVERY RATES".

<u>LOOKING AT RECYCLING IN THAT PERSPECTIVE, DEQ NOTED THE ENVIRONMENTAL BENEFITS OF EXISTING RECYCLING IN OREGON</u>

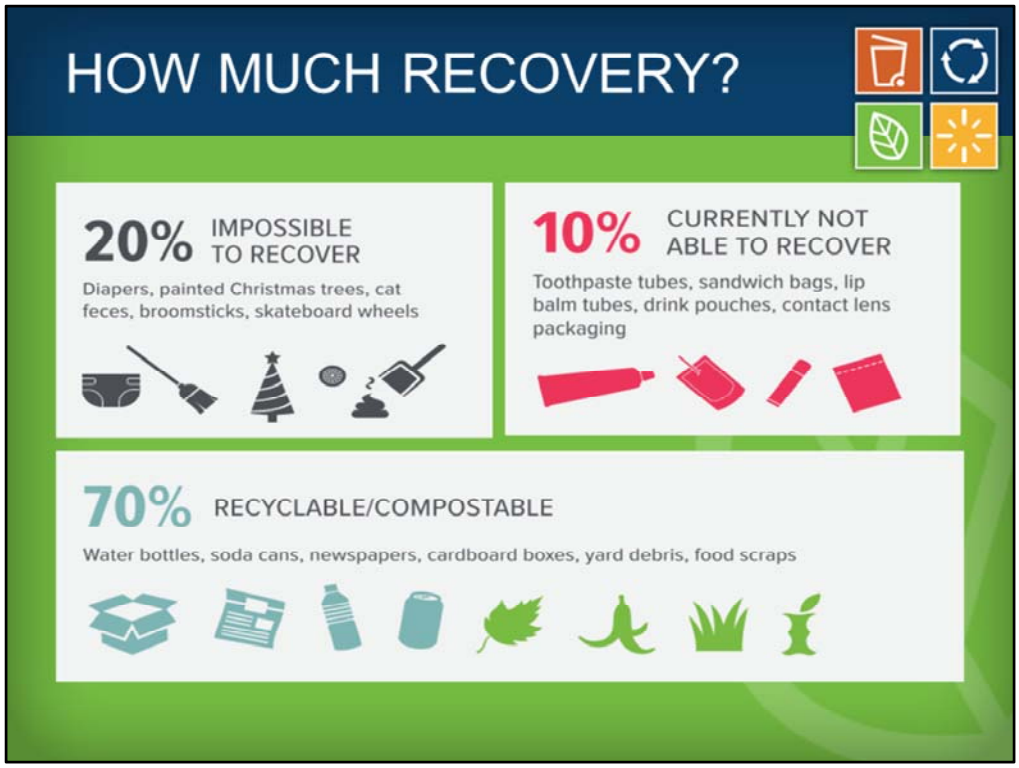


THIS SLIDE FROM OREGON DEQ:

BASED ON TONNAGE & THE ENVIRONMENTAL IMPACT OF RECYCLING THOSE TONNAGES

AND THIS RAISES AN INTERESTING QUESTION:

<u>HOW MUCH CAN WE RECYCLE & HOW MUCH SHOULD WE TRY TO RECYCLE</u>?



(*RRS & CASCADIA*)

70% RECYCLABLE/COMPOSTABLE IS PAPER PRODUCTS, METAL CANS, WATER BOTTLES & MUCH PLASTIC PACKAGING, GLASS BOTTLES, YARD DEBRIS, FOOD WASTE

10% NOT CURRENTLY ABLE TO RECOVER INCLUDES TOOTHPASTE TUBES, SANDWICH BAGS, LIP BALM TUBES, DRINK POUCHES, CONTACT LENS PACKAGING

20% IMPOSSIBLE TO RECOVER INCLUDES DIAPERS, PAINTED CHRISTMAS TREES, PET WASTE, BROOMSTICKS, SKATEBOARD WHEELS

& THIS ANALYSIS DOES NOT BEGIN TO TAKE INTO ACCOUNT WHERE MATERIALS ARE GENERATED & POTENTIAL RECOVERY RATES BASED ON LOCATION

- 14% OF POPULATION IN MULTI-FAMILY HOUSING
- 19% OF THE POPULATION “RURAL”
- ??% COMMERCIALLY GENERATED

<u>WHICH RAISES AN INTERESTING QUESTION ABOUT GOALS</u>

MANY GOALS – INCLUDING ANYTHING OVER 50% - ARE ASPIRATIONAL NOT REALISTIC

- DIVIDED BY FIVE
- NOT BASED ON SCIENCE

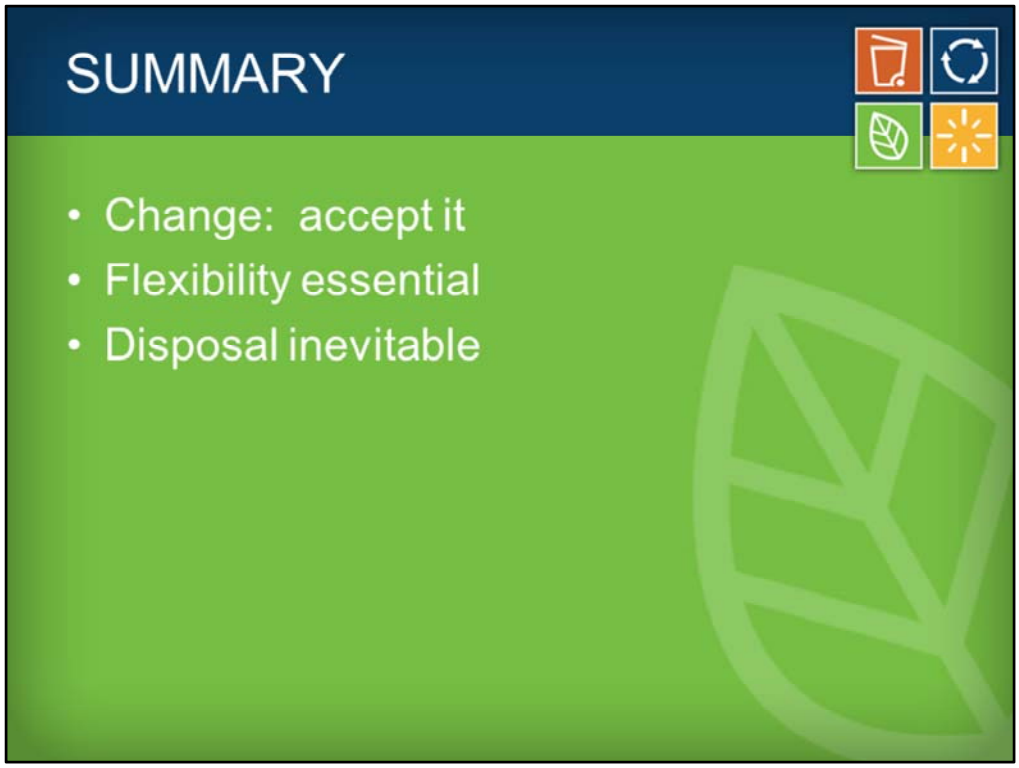
NEED REALISTIC GOALS BASED ON FLEXIBLE PLANNING & UPDATING*: SEATTLE*

- *CHECK COMPOSITION OF WASTE STREAM EVERY 5 YEARS*
- *SET GOALS FOR STEADY INCREMENTAL IMPROVEMENT*
- *REALISTIC GOALS*
- *70% IN 2023*
- *STARTED CURBSIDE IN THE 80'S OR EARLIER*

AGGRESSIVE GOALS CAN LEAD TO AGGRESSIVE REPORTING

- *SAN FRANCISCO CLAIMS 80% DIVERSION*
- *2/3 IS INERT FILL MATERIAL (PRIMARILY DIRT) & A LITTLE BIT OF BIOSOLIDS*

<u>(SUMMARY)</u>



CHANGE IN OUR RAW MATERIALS & MARKETS IS INEVITABLE & UNAVOIDABLE

- THE IMPACT OF ZERO WASTE WILL CONTINUE
- FOOD WASTE THE NEXT FIELD FOR ZERO WASTE

BE FLEXIBLE IN PLANNING

- DO WE NEED RIGID SOLID WASTE PLANS FILLED W/DETAIL & OUT-OF-DATE WHEN FINALLY ADOPTED?

ACCEPT REALITY: DISPOSAL WILL BE INEVITABLE FOR A VERY LONG TIME

I HOPE I DON’T COME ACROSS AS GLOOMY GUS

WE DO HAVE CHALLENGES BUT RECYCLERS ARE INHERENTLY OPTIMISTIC.

- IF YOU CAN’T PERSEVERE YOU WON’T SURVIVE LONG IN THIS FIELD

WE HAVE MADE TREMENDOUS PROGRESS OVER THE YEARS & WE WILL CONTINUE TO PROGRESS

FOR MORE INFORMATION:

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