

# Recycling in Arizona

Presented by ADEQ and Walton Sustainability  
Solutions Service

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# Agenda



Project Background

Hub & Spoke

Outreach to Increase Participation

Resources

# **Background & Introduction**

# About the Project



## ADEQ & ASU

USDA-funded grant to look at  
hub & spoke recycling for  
rural AZ



## Cost-Benefit Feasibility

What is needed to make recycling  
work in rural AZ  
  
Talking to AZ Communities to find  
out what they need



## Training

How to start a recycling program  
  
What equipment, funding,  
logistics, partnerships are needed  
  
How to engage the public

# Why Recycling Matters



## Landfill Capacity

Eventually, we will run out of space to throw stuff away



## Extraction of Materials

Less need to extract virgin resources

Less extraction means less habitat destruction and biodiversity loss



## Wildlife Over Waste

All-you-can-eat-buffet for animals

Harmful to wildlife

# Why Recycling Matters



## Saves Energy

Less energy required than  
making new products



Recycle

1 ton Aluminium



Reduce

0.02 metric ton  
CO<sub>2</sub>



Conserve

1029 gallons of  
Gasoline

Source: EPA, Waste Reduction Model,  
<https://www.epa.gov/warm/versions-waste-reduction-model-warm#15>

# Why Recycling Matters



## Economic Development

Recycling brings new jobs

Builds strong communities



**500K+ Jobs**

Direct, indirect and induced

=

**\$34B**

Annual wages & benefits

=

**\$116B**

Economic impact



**7,500+ Jobs**

Direct, indirect and induced

=

**\$501M**

Annual wages & benefits

=

**\$2B**

Economic impact

Source: ISRI, Economic Impact Study, 2021  
<https://www.isri.org/economic-impact>

# Why Recycling Matters



## Valuable Resource

Avoids landfilling cost

Helps recover residual value of diverted materials

	Waste	
Destination	Recycle	Landfill
Cost	Drop-off Processing Hauling	Collection Hauling Tipping Fee
Revenue	Sales of Material	None
Benefit	Increased Landfill Capacity Extended Life of Material Less Mining for Natural Resources	None



## Circular Economy

Use less, waste less, and remain profitable



# Obstacles to Recycling



## Cost

Staffing and infrastructure  
problem

Lack of Support

Unwillingness to Pay



## Distance

Unable to recover transportation  
cost



## Lack of Knowledge

Non-recyclable materials  
contaminate recycling stream

Poor Recycling Quality

# Hub & Spoke Recycling

# What is Hub & Spoke Recycling?



## Key Features

Centralized

Cooperative

Replicable and Scalable



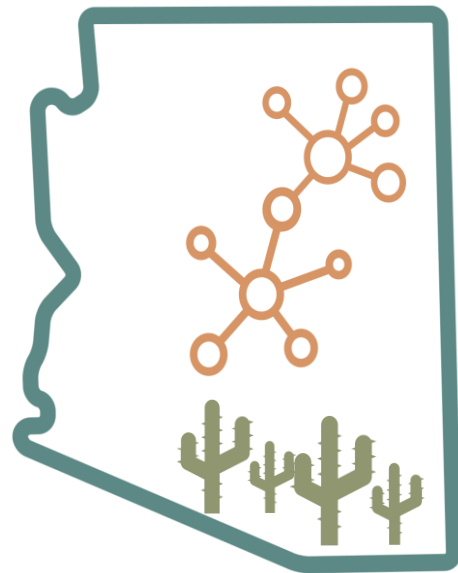
## Benefits

Provides access to recycling

Larger material volumes

Cost effectiveness

Less material to landfill



# Hub Vs. Spoke

## Hub

Larger Community

Established Recycling  
Infrastructure

Access to End Markets



## Spoke

Smaller Community

New to Recycling

Simple Pickup/ Drop-off  
Facility

Limited access to End Markets

# Examples of Hub & Spoke



## New Mexico

Originally, co-op coordinated materials marketing

Now, solid waste districts or counties



## Texas

Co-op coordinates materials marketing

Each community is different

Community Sizes: 160 -40,000 residents



## Tennessee

Took at least 10 years to get to single-stream recycling

LOTS of grant funding

# Examples of Hub & Spoke - Otero County, NM



# What Does Hub & Spoke Look Like?



## Collection

Curbside

Drop-off locally

Drop-off at transfer station

Single-stream

Source Separated



## Equipment

Box Trucks

Balers

Any & every type of trailer

Any & every type of bin



## Labor

Municipal employees

Community groups

Student or school groups

Incarcerated work programs

Public employees (sheriffs)

# How is Recycling Paid For?



## Fees

Resident fees

Tipping fees



## Other Funding

Federal Grants

Donations

Material Sales



## State Funding

Annual allocations

State grant programs



## Cost Avoidance

Pay-As-You-Throw

Divert cost from landfill  
tipping fees



# What Materials are Collected?



## Most of the Time

Corrugated cardboard

Aluminum

Metals



## Sometimes

Office Paper

Paper products

Plastics #1, 2



## Rarely

Plastics #3-7

Glass

# **Outreach to Increase Participation**

# Importance of Outreach & Engagement



## Material Volume

Higher volumes decrease cost  
per ton for recycling



## Community Support

Local recycling champions and  
participation are critical to  
successful recycling programs



## Material Quality

Low contamination rates decrease  
cost per ton for recycling

# Outreach Messaging: Residents



## What to Include

**How:** Separated, clean, empty

**What:** Types of materials; pictures

**Where:** Local drop-off location

**More Info:** Website, phone number



## How to Reach Out

Social Media

Newspaper

Flyers

Radio

Newsletters

Mailers

Local Events

Sporting Events

Town Hall Meetings

Festivals

# How to Recycle in Your Community?

## Check with local SW authorities

Only put materials in the recycle bin that are specifically collected by your community

## Reduce Contamination

All containers must be clean and empty



## Do NOT place the following items in the recycle bin



Plastic bags



Diapers

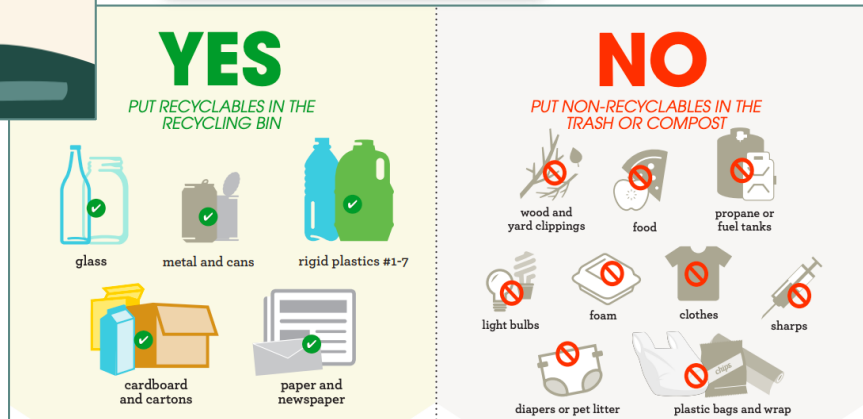


Food Waste



Take-out Containers

# Outreach Messaging: Examples



Chester County Master Betty Bartholomew was honored today with Keep Tennessee Beautiful's first-of-its-kind Leader Against Litter Award. County Board Chairwoman Wanda T. Hargis, Chester County Board of Health Director, and Chester County Board of Health Director, were honored today with Keep Tennessee Beautiful's second Litter Warrior Award. Executive Director Betty Bartholomew, KTB, made the presentation during the event. Keep Tennessee Beautiful's Board and Chester County Board of Health will award the Litter Warrior Award to the Litter Warrior who is designated.



Keep TN Beautiful's Board of Directors and Chester County Board of Health will award the Litter Warrior Award to the Litter Warrior who is designated.

## Education & Outreach

### 2022 Recycled Sculpture Project



Chester County Board of Health and Chester County Board of Health will award the Litter Warrior Award to the Litter Warrior who is designated.

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## Community Celebration



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# Outreach Messaging: Commercial

## What to Include

**Cost:** fees, equipment

**Benefits:** pay for materials, less solid waste expense, reputation

**Materials:** what materials to recycle (cardboard primarily)

**More Information:** Who to contact, where to find information

## How to Reach Out

Directly to Businesses  
(email, phone call, meeting)

Social Media

Mailers



# Outreach Messaging: Other

## What to Include

**Cost:** fees, equipment

**Benefits:** lower solid waste cost, reputation in community

**Materials:** what materials to recycle (cardboard primarily)

## How to Reach Out

Directly to Organization  
(email, phone call, meeting)

Mailer

## Types of Organizations

Hospitals

Schools

Community Centers



# **Additional Resources**

# Additional Resources

## How to Recycle

ADEQ

<https://azdeq.gov/recycling>

<https://azdeq.gov/RecyclingToolkit>

<https://azdeq.gov/recycling-work-recycling-toolkit>

EPA

<https://archive.epa.gov/region4/rcra/mgtoolkit/web/html/improving.html>

AZ Recycling Coalition

<https://www.arizonarecyclingcoalition.org/>

Keep America Beautiful

<https://kab.org/>

## Outreach Materials

Recycle Across America

(Labels & Signage)

<https://www.recycleacrossamerica.org/>

ADEQ

<https://azdeq.gov/node/4435>

EPA Recycle City

(interactive education & games)

<https://www3.epa.gov/recyclecity/>

Social Media Outreach

<https://portal.ct.gov/DEEP/Reduce-Reuse-Recycle/Recycling/Using-Social-Media-to-Promote-Recycling>

EcoMaine

(Customizable outreach materials)

<https://www.ecomaine.org/municipal-services/customizable-outreach-materials/>

## Free Resources

Call2Recycle

(free battery recycling)

<https://www.call2recycle.org/>

Canva

(make flyers & online posts)

<https://www.canva.com/>

# Additional Resources: Funding & Grants

## EPA

<https://www.epa.gov/sustainable-management-food/funding-opportunities-and-epa-programs-related-food-system>

## USDA

<https://www.rd.usda.gov/programs-services/water-environmental-programs/solid-waste-management-grants>

## Closed Loop Fund

<https://www.closedlooppartners.com/>

## The Recycling Partnership

<https://recyclingpartnership.org/>

## Fed Center

<https://www.fedcenter.gov/opportunities/grants/>

## AZ Recycling Coalition

<https://www.arizonarecyclingcoalition.org/grants>

## Keep America Beautiful

<https://kab.org/grants/>