

# WA Commingled Recycling Improvements Project

Preventing Contamination  
at the Curb, MRF and Mill



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

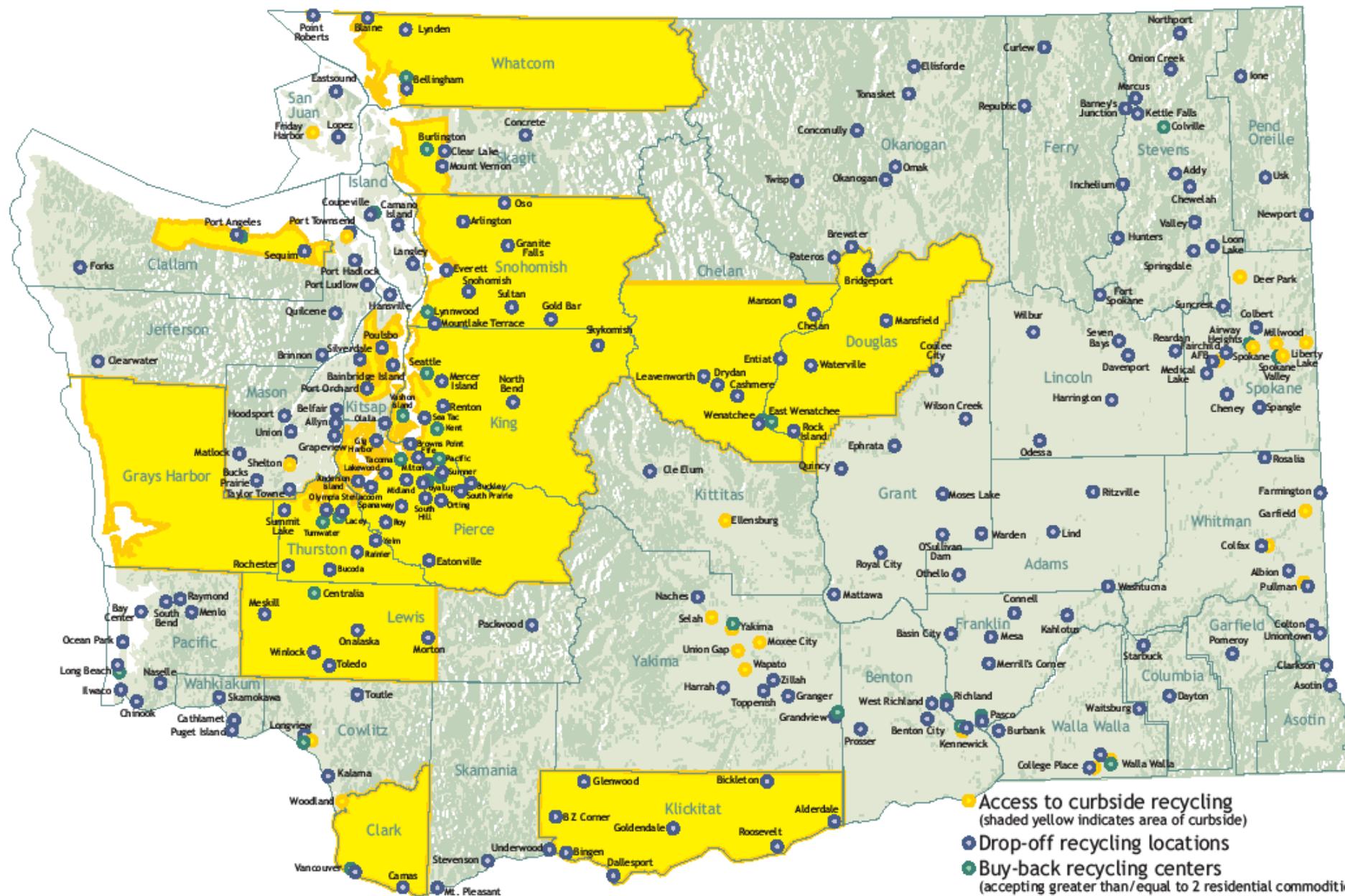




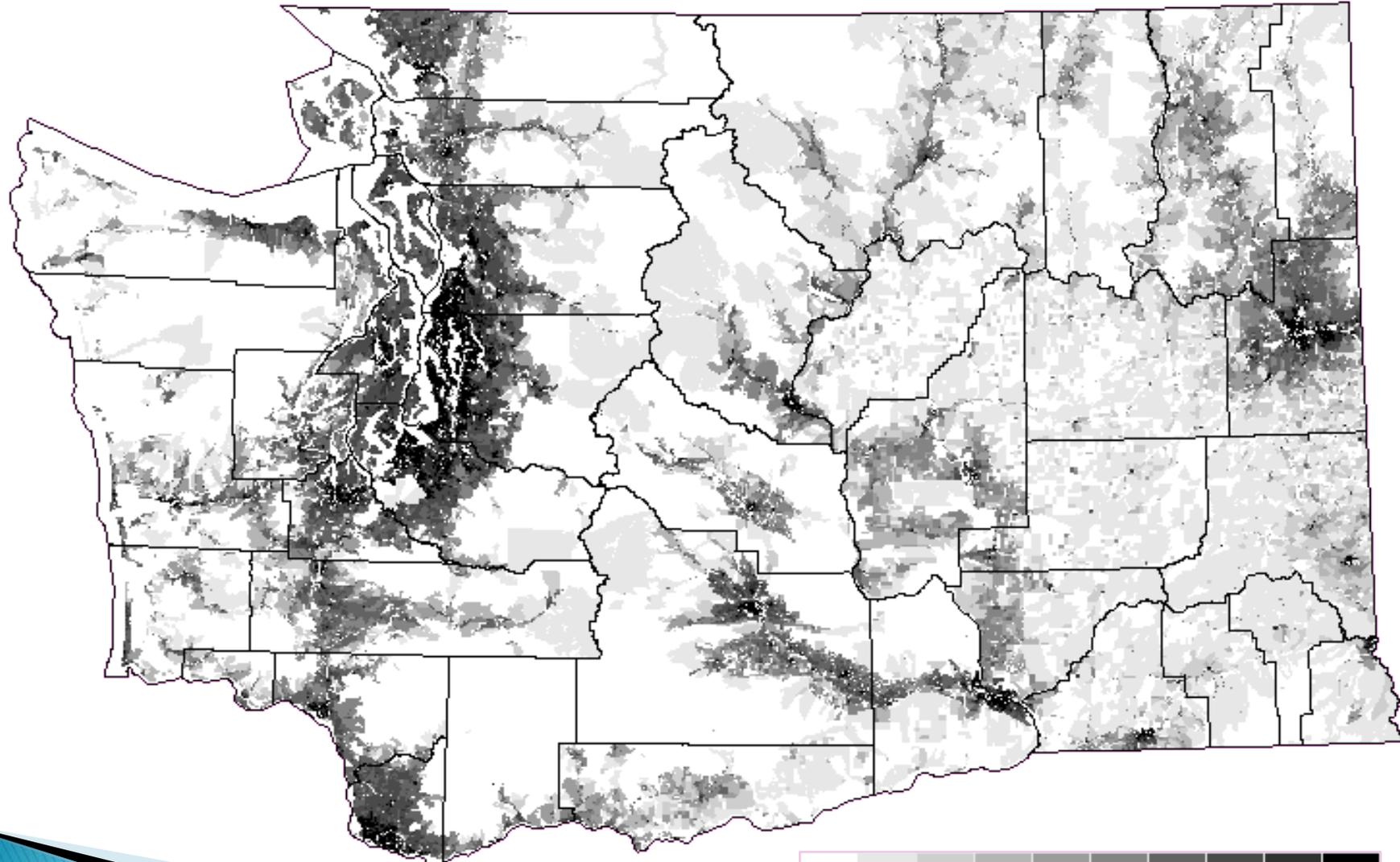
# Overview

- ▶ How did we get here?
- ▶ What is the problem we are trying to solve?
- ▶ What work has been done on this issue to date?
- ▶ Where are we now?

# Access to Residential Recycling in Washington State (2008)



# Population Density (2000)



# Collection Methods



3-Bin (or more)



Dual-Stream

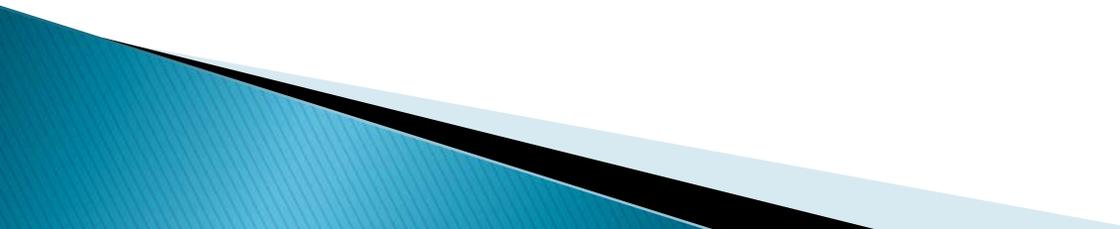


Single-stream

‘Commingled’



# Why Go Commingled?

- ▶ Commingling allows for automated collection
  - ▶ Benefits of automated collection:
    - Increased efficiency
    - Decreased worker injuries
    - Wheeled cart with lid provide convenience and privacy to residents
  - ▶ Little or no sorting required = greater participation by residents
- 



# What is the problem with the current commingled recycling system?

- ▶ Collection does not equal recovery
- ▶ Lost materials = Lost resources
- ▶ Problematic materials reduce efficiencies at MRFs & mills
- ▶ Current standards are not working
- ▶ Confusion by residents

# Collection $\neq$ Recovery

King County (WA) Puget Sound MRF Assessment (2006)

<b>Curbside Material</b>	<b>Sent to Proper Market</b>	<b>Cross-Contaminant or Residue</b>
<b>Newspaper, Mixed Paper</b>	98-99%	1-2% lost
<b>PET</b>	47%	53% lost
<b>HDPE</b>	72%	28% lost
<b>Aluminum</b>	64%	36% lost
<b>Tin</b>	77%	23% lost
<b>Glass</b>	90%	10% lost

# Lost Materials = Lost Resources



NORPAC Paper Mill  
Longview WA, Feb 2008



Blue Heron Paper Mill  
Portland, Oregon, Feb 2008



# Barriers for the MRF

**Dangerous:** Sharps and other biohazard waste

- ▶ When commingled, these are responsible for the majority of contamination, damage and inefficiencies at MRFs:

1. **Glass**
  2. **Plastic bags**
  3. **Shredded paper**
  4. **Flattened containers**
- 



# Existing standards are not working to ensure material recovery

Standard: ISRI #8: Special News, De-ink Quality (#8 ONP)  
 Prohibitive materials.....None Permitted  
 Total Outthrows may not exceed.....1/4 of 1%

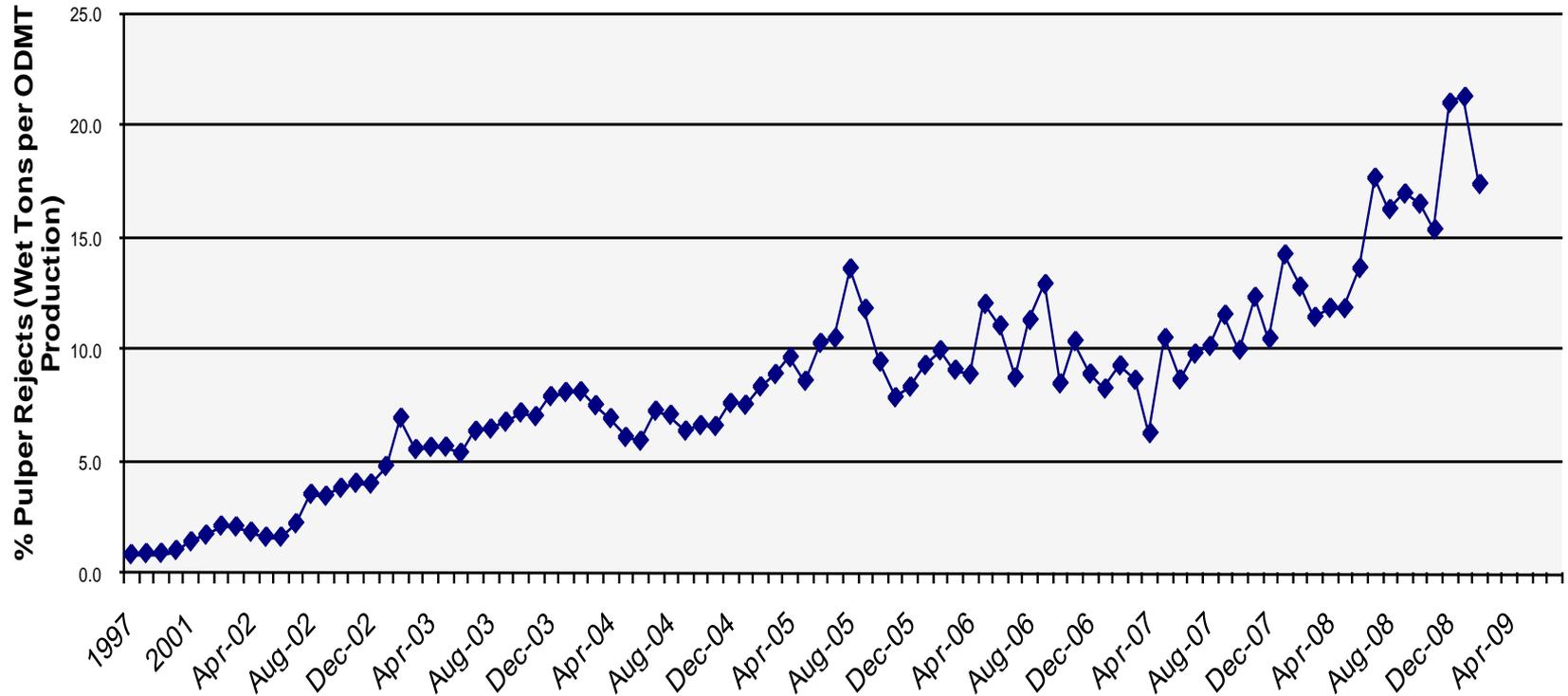
**NORPAC Paper Mill                      Longview, WA**

Supplier	NORPAC Supply System	Sold As (ISRI)	% Outthrows (Non-news fiber)	% Prohibitives (Non-fiber)	% Glass
2001 and Prior Average ALL Suppliers	100% Source Separated	#8	0.25 – 0.5	0.0	0.0
Sep 2006 – Dec 2006 Weighted Average ALL Suppliers	68% Co-mingled	#8, #7	15.0	3.4 % Pulper Rejects	0.33

# ONP Contamination Magnitude

## % Pulper Rejects

Vertical Lines Indicate Supplier Conversion to Co-Mingled Collections



NORPAC Paper Mill  
Longview WA

# Additional Mill Processing Costs

<b>Outthrows</b>	<b>Issue</b>	<b>Operating Impact</b>	<b>Relative Cost</b>
OCC	Brightness Impact	Increase Bleach Cost	\$\$\$
Carrier Board	100% Yield Loss	Fiber Replacement	\$\$\$\$
Junk Mail	Contaminants	Chemical Cost	\$\$
White Food Boxes	Yield Loss	Fiber Replacement	\$\$\$\$
White Ledger	xx% Yield Loss	Fiber Replacement	\$\$
Phone Book	Brightness Impact	Brightness Impact	\$\$

Annual Cost Impact =

$$\$1,350,000 + \$1,687,500 = \$3,037,500$$

# Process Impacts



# Process Impacts





# Customer Confusion

- ▶ Commingled collection carts look like garbage cans
- ▶ Residents know materials will be sorted (“when in doubt, throw it in” behavior)
- ▶ Recycling programs’ Yes/No lists vary even from neighboring jurisdictions that use the same MRF

# What's been done?

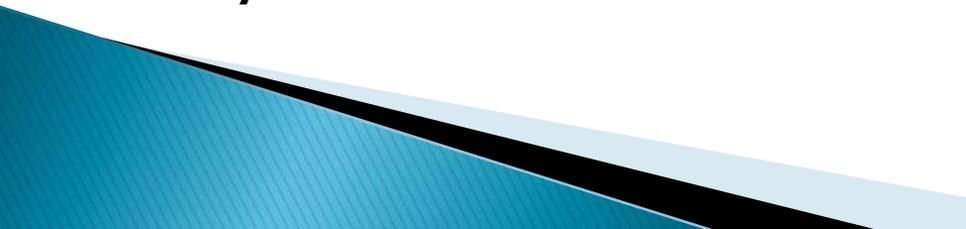
- ▶ CA Single Stream Recycling Roundtable (2005)
  - ▶ OR MRF Study (2004–2005)
  - ▶ King County Puget Sound MRF Study (2006)
  - ▶ EPA Region 10 Initiative on Commingled Recycling Systems (2007–2008)
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# WA Statewide Stakeholder Mtg

- ▶ March 9, 2009 at 5 locations across WA
- ▶ 60 attendees – Locals, MRFs, Mills, Haulers

## Convened to answer this question:

- ▶ Are local governments willing to work together as a group on addressing contamination in commingled recycling systems?
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# Agreed To:

- ▶ Collaborate regionally to address reducing contamination in commingled recycling systems
  - ▶ **Work in three regional groups**
    - SWRO, NWRO, and ERO+CRO+ID
  - ▶ **Include all stakeholders**
    - MRFs, Local Governments, Haulers, End-Users
  - ▶ Policy discussions may be held by local governments separately
- 



# Moving Forward

## ▶ Eastern/Central Group

- Lead: Jim Wavada – Ecology (Spokane)
- [jwav461@ecy.wa.gov](mailto:jwav461@ecy.wa.gov)

## ▶ Northwest Group

- Lead: George Sidles – City of Seattle
- [George.Sidles@Seattle.gov](mailto:George.Sidles@Seattle.gov)

## ▶ Southwest Group

- Lead: Shannon McClelland – Ecology (Olympia)
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