



MEMORANDUM

To: Transportation and Public Works Committee
From: William Appleton, Public Works Director
Date: 6/21/18
Subject: China National Sword Policy Impacts on West Coast Recycling

Purpose:

To discuss the impacts of the China National Sword Policy (a policy put into place by the Chinese Government reducing the acceptable level of contamination within recyclable commodities (aluminum, plastics, mixed paper etc) allowed into the country), on the City's Solid Waste and Recycling contractor, Recology CleanScapes. Proposed mitigation measures intended to provide relief to Recology CleanScapes will be discussed.

Background:

The export of recyclable materials is a significant part of Washington's recycling infrastructure and the Country that has most of the world's capacity to receive and process these materials is China.

In July 2017, China announced a policy called National Sword, which limits the import of contaminated recyclable commodities and increases inspections of recyclable commodity imports. In October, the [Solid Waste Association of North America issued a notification about the policy](#), which went into effect in March 2018. This policy change is already starting to have adverse impacts on California, Oregon and Washington, and is resulting in more material being stockpiled at solid waste facilities and recycling centers or disposed of in landfills. Furthermore, in March of 2018, China began the Blue Sky 2018 enforcement campaign to prevent the import of materials outlined in the country's recycling ban. The materials banned by the end of 2018 include post-industrial PE, PET, PS, PVC and other scrap plastic. Additional banned materials include slag and residue from smelted steel and iron; a variety of metal and electrical appliance scraps, such as electric motors, wires and cables; and compressed scrap from cars.

Both the National Sword Policy and the Blue Sky campaign have resulted in a collapse in the value of recyclable commodities such as mixed paper, cardboard and plastics and has made unavailable more than 50% of the world's capacity for processing these materials into products for reuse/resale.



Recology-CleanScapes Recycling Cost of Service Analysis City Summary

NOTES

All results based on data and assumptions provided by Recology.
Assumptions and results are not recommendations from FCS GROUP; results are for informational purposes only.
Results are annualized based on actual financial, commodity revenue, and tonnage activity for recycling processing operations from:

Oct 2017 to Mar 2018

Franchise Service Area:	SeaTac	Total months included in analysis:	6
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Recycling Adjustment Options

Description:	Balancing Account	Revenue Sharing	Temporary Adjustment
	Customer rates adjusted based on actual operating expenses, new capital, and return on revenue target (minus commodity revenue).	Customer rates adjusted to recover current operating expenses and new capital. Commodity revenue is shared between customers and Recology. Customers' share of commodity revenues increases with prices.	Customer rates adjusted to cover annualized gap between commodity revenue and operating expenses (based on 2nd quarter of FY 2018), new capital, and return on revenue target. Adjustment is temporary; continues until commodity values recover.
Financial Assumptions Provided by Recology			
Average Commodity Revenue (\$ per Outbound Ton)	\$ 79.42	\$ 79.42	\$ 79.42
Average Operating Cost (\$ per Inbound Ton)	\$ 138.10	\$ 138.10	\$ 138.10
New capital cost to meet contamination thresholds	\$ 5,696,140	\$ 5,696,140	\$ 5,696,140
Monthly capital contribution*	\$ 67,811	\$ 67,811	\$ 67,811
Policy Assumptions Provided by Recology			
Operating cost reduction from capital investment	-7.00%	-7.00%	-7.00%
Return on revenue target:	10.00%	No Target	10.00%
Revenue sharing:	Recology customers retain all commodity revenue once return on revenue target is met.	First \$35 of ACR is shared 50%/50% between Recology and customers. 100% of commodity revenue above \$35 ACR is retained by customers.	Recology retains all commodity revenue. As commodity prices increase above current levels, adjustment to customer rates decreases.
Operating processing fee (\$ per inbound ton)	Adjusted based on actual costs	\$ 128.00	up to \$86.00

* Note: Based on 7 year useful life of equipment

SeaTac Service Area Results**

Description	Balancing Account	Revenue Sharing	Temporary Adjustment
System Recycling Adjustment Required (Annualized)	\$ 5,849,482	\$ 5,803,591	\$ 5,602,464
% of Inbound Tons from SeaTac	11.8%	11.8%	11.8%
Share of Recycling Adjustment (Annualized)	\$ 687,701	\$ 682,306	\$ 658,660

** Results based on market pricing through first six months of FY 2018. Changes to market pricing will impact results.

SeaTac Customer Class Results

Description	Balancing Account	Revenue Sharing	Temporary Adjustment
Share of Recycling Adjustment (Annualized)***	\$ 687,701	\$ 682,306	\$ 658,660
% of SeaTac Inbound Recycling Tons from:			
Single-Family Residential	22.3%	22.3%	22.3%
Multi-Family & Commercial	77.7%	77.7%	77.7%
Other Classes****	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%
Share of Recycling Adjustment (Annualized) To:			
Single-Family Residential	\$ 153,091	\$ 151,890	\$ 146,626
Multi-Family & Commercial	534,610	530,416	512,034
Other Classes****	-	-	-
Single-Family Residential (4,661 Accounts)			
Monthly Rate Impact per Account	\$ 2.74	\$ 2.72	\$ 2.62
Multi-Family & Commercial (7,909 cubic yards of recycling service)			
Cost per Cubic Yard of Service	\$ 5.63	\$ 5.59	\$ 5.39

*** Note: Recycling adjustment allocated across customer classes based on share of inbound recycling tons

**** Note: Costs attributed to processing materials outside city franchise service areas are allocated to other classes and excluded from adjustment options.

BACKUP INFORMATION

Key Definitions

Average Commodity Revenue (ACR)	Commodity revenue divided by outbound tons
Commodity Revenue:	Revenue generated from the sale of recyclable material
Inbound Ton:	Recycling tons delivered to MRF for processing
New Capital:	Cost estimate for MRF facility improvements presented on 5/14 by BHS
Operating Processing Fee:	Fee paid by Recology customers to offset a portion of MRF operating costs
Outbound Ton:	Recycling tons sold
Return on Revenue:	Measure of profitability, calculated by dividing net income by revenue

Recycling Material from Service Area (October 2017 to March 2018):

Recycling Inbound Tons	3,735
As a Percent of Facility Inbound Tons	11.8%

Service Area Characteristics (October 2017 to March 2018)

Customer Class	Accounts	Recycling Tons	Monthly Recycling Service Volume (in cubic yards)
Single-Family Residential	4,661	831	9,313
Multi-Family Residential	-	305	-
Commercial	972	2,599	7,909
Other	-	-	-
Extra 5	-	-	-
Extra 6	-	-	-
Total	5,633	3,735	17,222

Customer Class	Accounts	Recycling Tons	Monthly Recycling Service Volume (in cubic yards)
Single-Family Residential	82.7%	22.3%	54.1%
Multi-Family & Commercial	17.3%	77.7%	45.9%
Other Classes****	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%



China Sword STAKEHOLDERS MEETING

May 2018

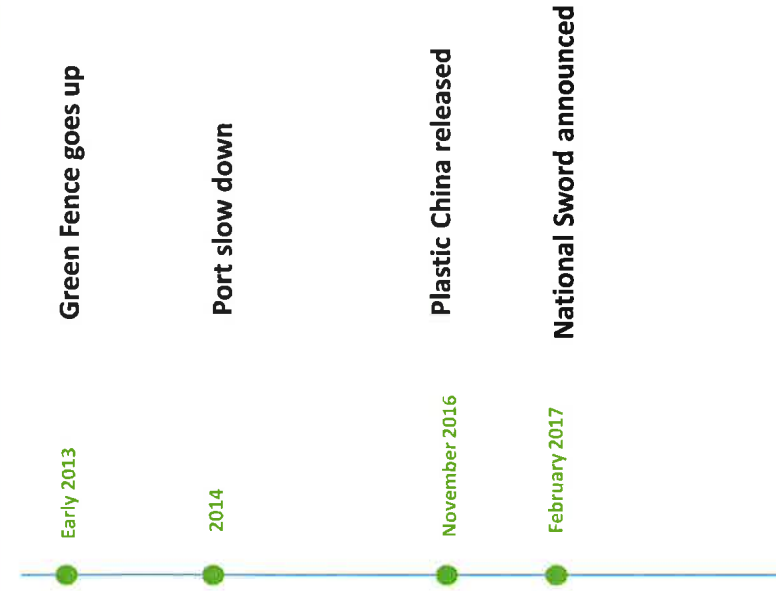


Current Status of Recycling Industry





Current Status of Recycling Industry



Focus

China puts up a green wall to US trash

US recyclers are nervous about losing their largest market as China enforces new environmental laws this year.

By Peter Ford, Staff Writer | JUNE 19, 2013



RECYCLING > PLASTICS

China Enacts "National Sword 2017" Crackdown on Waste Imports

Some regard this campaign as the second Green Fence.



Current Status of Recycling Industry

March 2017

Enforcement on illegal activity (smuggling) is heightened



July 2017



China says it will ban certain recovered material imports

Posted on July 19, 2017

by [Colin Staub](#)





Current Status of Recycling Industry

Late 2017

Oh, Scrap: China, the Biggest More

With enough of its own, China doesn't want U.S. scrap, w

Recycling is in trouble — and it might be your fault

Paul Singer, USA TODAY Photo: Steve Delaney/USA TODAY Updated 2:34 pm ET April 28, 2017



The cost of recycling is increasing due to contamination by items that can't be recycled. USA TODAY.

Business The Seattle Times
Division of America's Truck Wants No



Chinese crackdown may send more recycling to Northwest landfills



Current Status of Recycling Industry

November 2017

SHOP

EUWID | RECYCLING AND WASTE MANAGEMENT

News Markets Archive E-Paper Print e

Good evening dear user!

POLICY

China sets 0.5 per cent contamination limits for paper and plastics

17.11.2017 - The Chinese government notified the World Trade Organization (WTO) of new contaminant limits for wastes imported as raw materials on 15 November. According to the submitted documents, the new regulations are to go into effect on 1 March 2018. WTO members have until 15 December to comment.

Shifting shi

Early 2018

IMPACT

China No Longer Wants Your Trash. Here's Why That's Potentially Disastrous.

The country has been the "world's wastebasket" for decades. But starting Jan. 1, China has said "no more."

By Dominique Mobergen
01/24/2018 10:47 am EST | Updated Jan. 24, 2018





Current Status of Recycling Industry

March 2018

RESOURCE RECYCLING

Your trusted source for recycling news and analysis

fills as

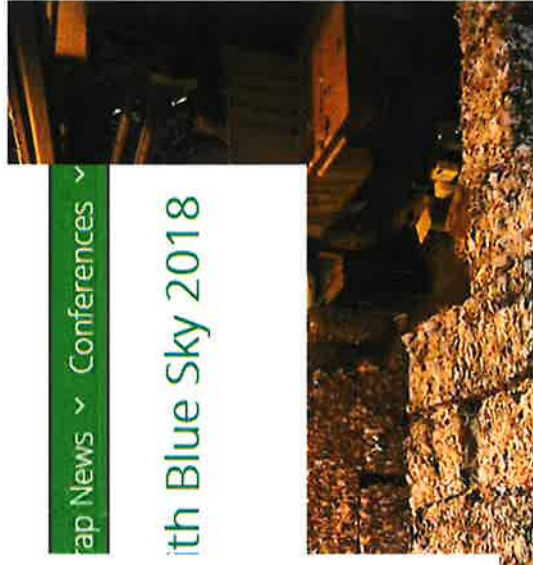
China's ban hits additional materials

Posted on April 25, 2018

by [Colin Staub](#)

Chinese authorities plan to halt imports of more scrap categories by the end of the year, including post-industrial scrap plastic and a variety of scrap metals. The country also announced a list of even more imports it will ban by the end of 2019.

The Chinese Ministry of Ecology and Environment (MEE) [announced](#) April 19 that it is set to recategorize post-industrial PE, PET, PS, PVC and other scrap plastic as materials banned from import by the end of 2018, according to an [English translation](#) of the announcement provided by the Institute of Scrap Recycling Industries (ISRI).



Scrap Recycling Industries (ISRI).



Current Status of Recycling Industry

April 2018

Newsroom

Natural Resources and Parks
Public Affairs

King County forms task force to seek solutions to China recycling import restrictions

April 19, 2018

China trash ban is a global recycling wake up call

by Ivana Kottasová @ivanakottasova

April 20, 2018, 11:08 AM ET

OAKLAND, CA, May 4, 2018 (PPI Pulp & Paper Week) - A dramatic announcement by the government of China instantly halted new bookings for US recovered paper late this week and effectively left market players portending that market prices would plummet.



loads this month

Recommended Link

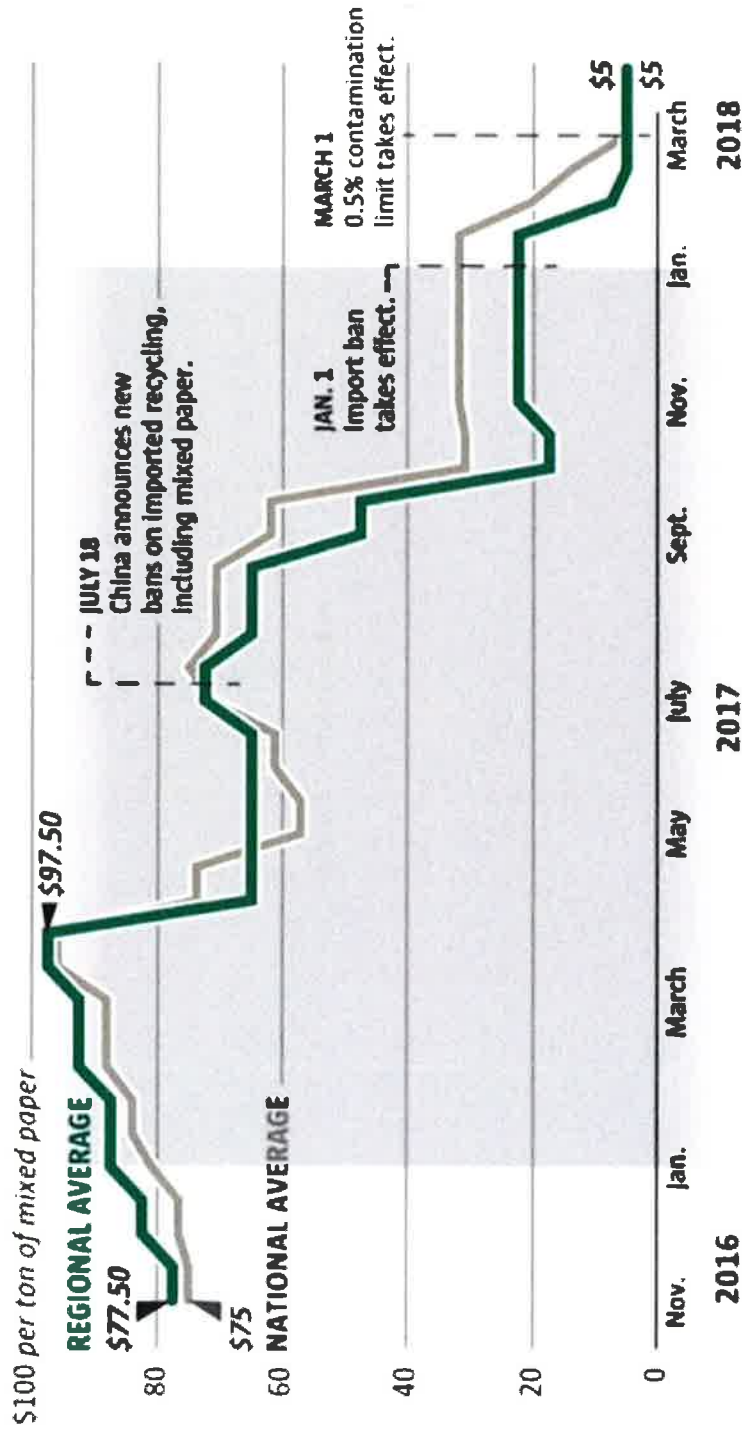


ng
market issues finally come into focus

May 2018



Market Update

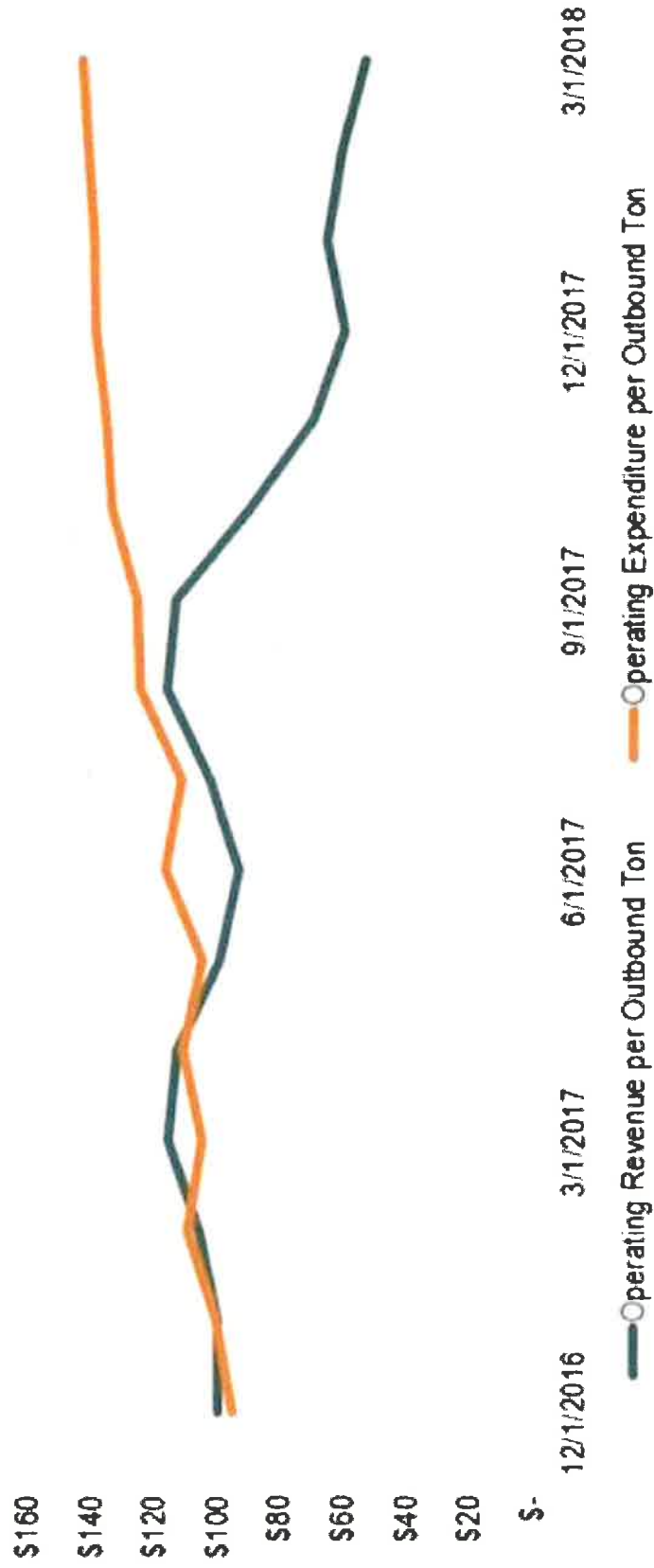


Source: RecyclingMarkets.net

EMILY M. ENG / THE SEATTLE TIMES



Market Update



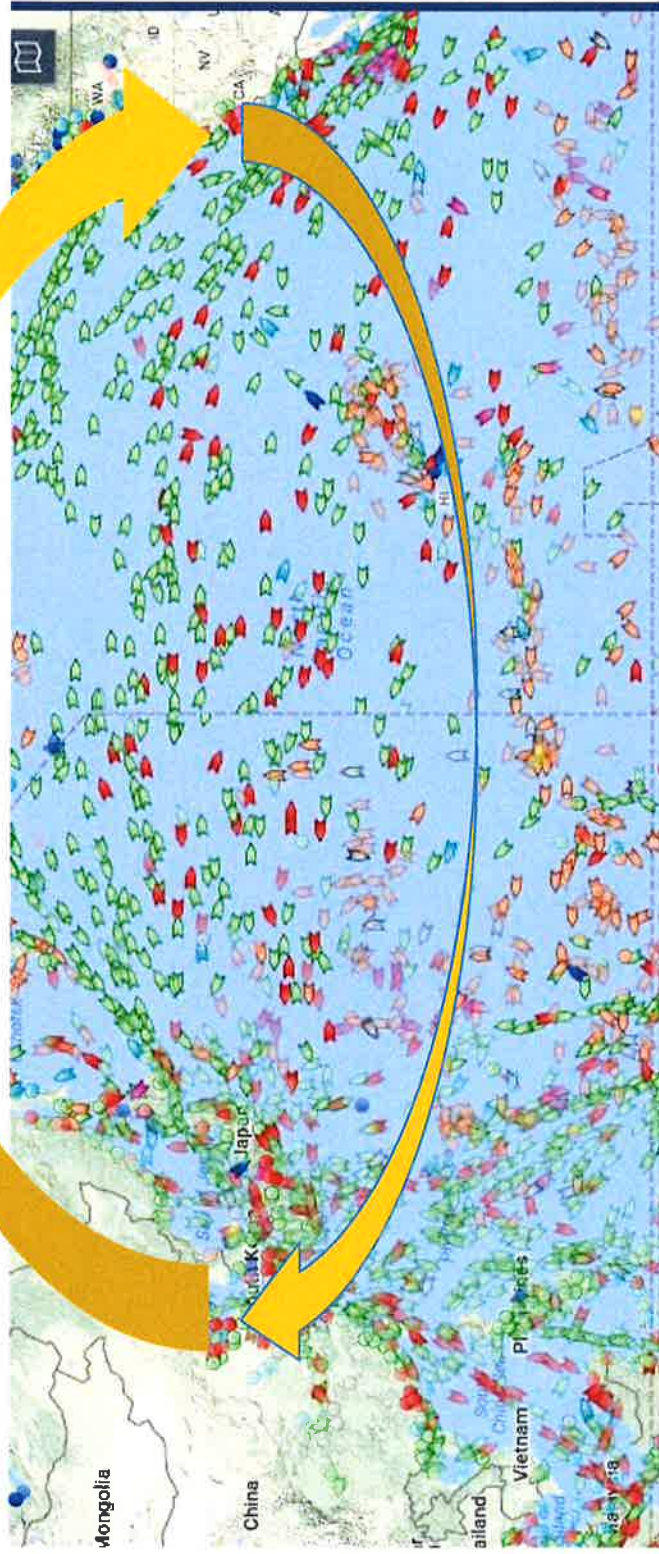
Market Update

- ✓ OCC
 - ✓ #12 OCC
 - ✓ #11 OCC
- ✓ Mixed paper
- ✓ There's a market for everything, but at the right price/quality





Trade Deficit





FIBRE TRADE INC.

- Direct Mill buyer
 - Established in 1987
- Packer
 - Shred Works packs OCC, Office Pack
- Broker
 - OCC & Various grades of paper
- ISO: 9001

DISCUSSION POINTS

1. Current Market update
 - China Environment and Control
 - CCIC Issues
2. Alternative Markets
 - South East Asia
 - Domestic Market
 - Other
3. Issues at Port and Transportation Costs
4. Specification Standards of Alternative Markets
 - OCC
 - Mix Paper

MIXED PAPER MARKETS

Mixed Paper	Q1 2017	Q1 2018	% Growth
India	90,143	279,482	210%
Indonesia	23,296	88,189	279%
Canada	19,784	56,943	188%
Vietnam	4,005	36,127	802%
Taiwan	5,554	14,247	157%
Colombia	516	7,406	1335%
United Arab Emirates	332	6,531	1867%
Ecuador	403	5,345	1226%
Malaysia	392	4,602	1074%
Significant Comparison Markets			
China	579,487	25,720	-96%
Mexico	32,321	32,130	-1%

OCC MARKETS

Corrugated/Board	Q1 2017	Q1 2018	% Growth
India	169,557	507,005	199%
Korea	61,074	104,716	72%
Vietnam	44,000	106,483	142%
Indonesia	41,258	108,174	162%
Taiwan	39,281	56,879	45%
Thailand	12,192	49,044	302%
Italy	8,337	36,064	333%
Germany	6,313	21,508	241%
Significant Comparison Markets			
China	1,548,974	1,277,589	-18%
Canada	72,218	63,423	-12%
Mexico	109,125	111,978	3%



Recology's Response QUALITY





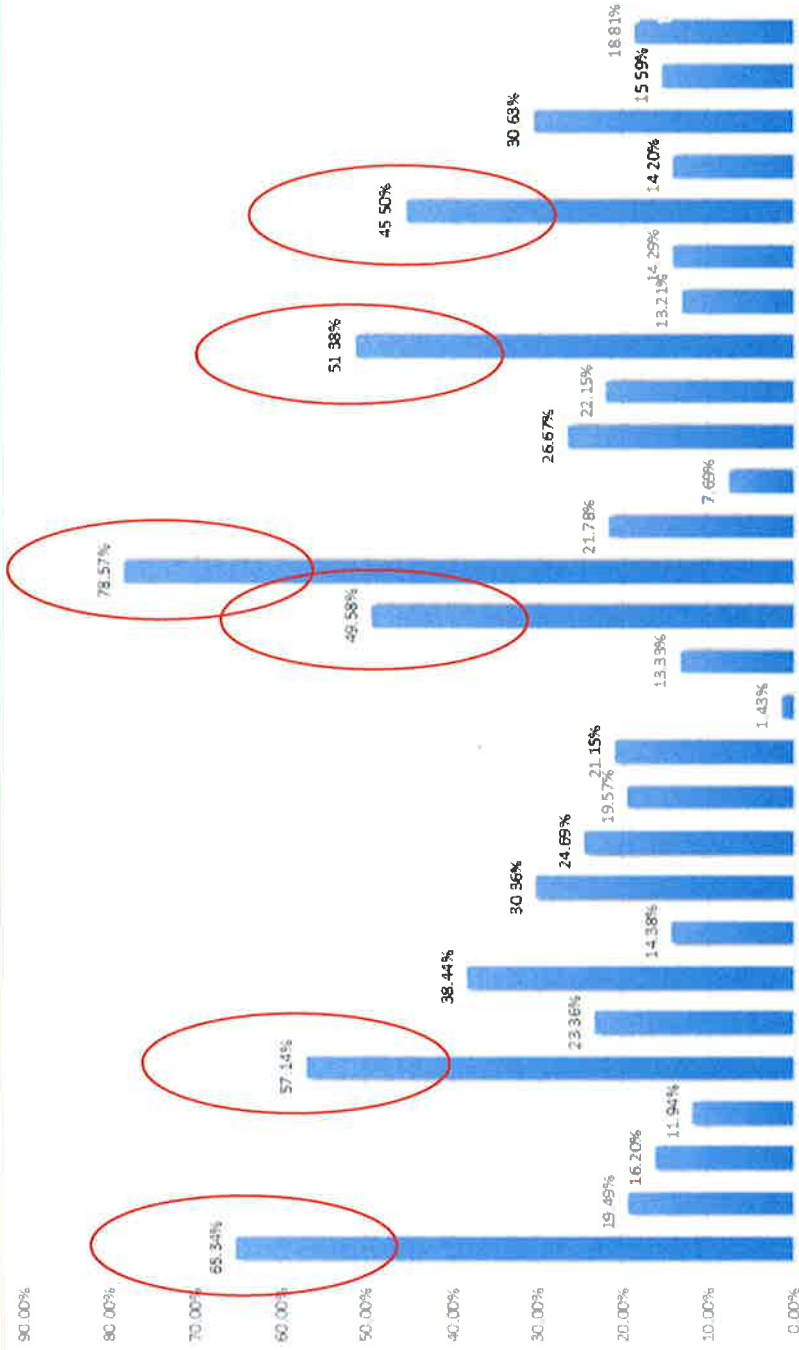
Recology's Response

STAFFING

- ✓ Increased staffing by 15%
- ✓ Reduced belt speed by 25%
- ✓ Decreased throughput
- ✓ Increased overtime
- ✓ Reduced third party tons



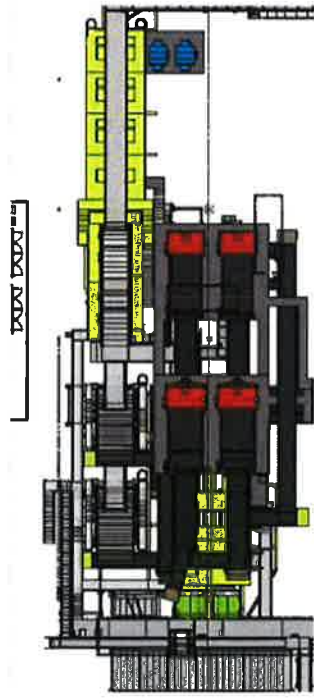
Recology's Response INBOUND MATERIAL AUDITS



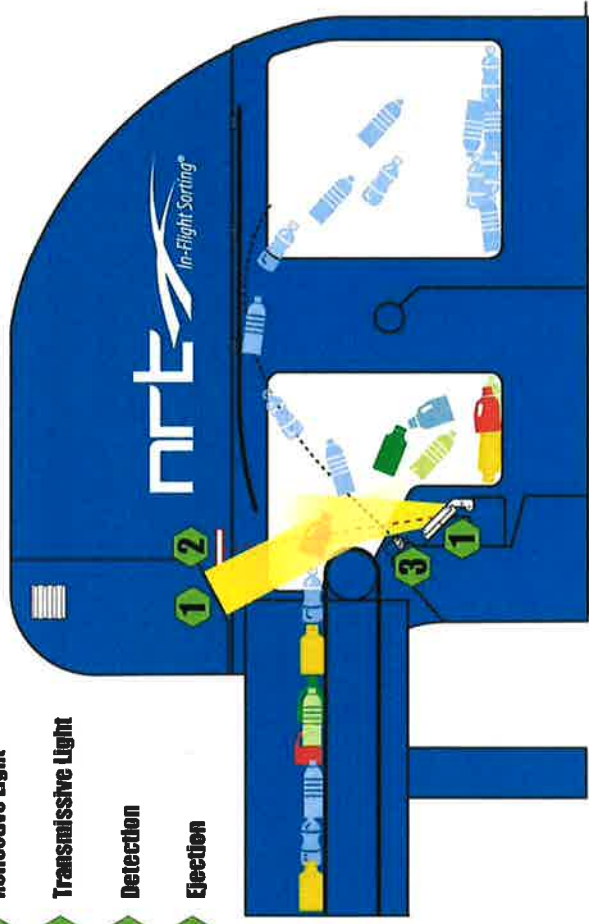


Recology's Response

NEW TECHNOLOGY



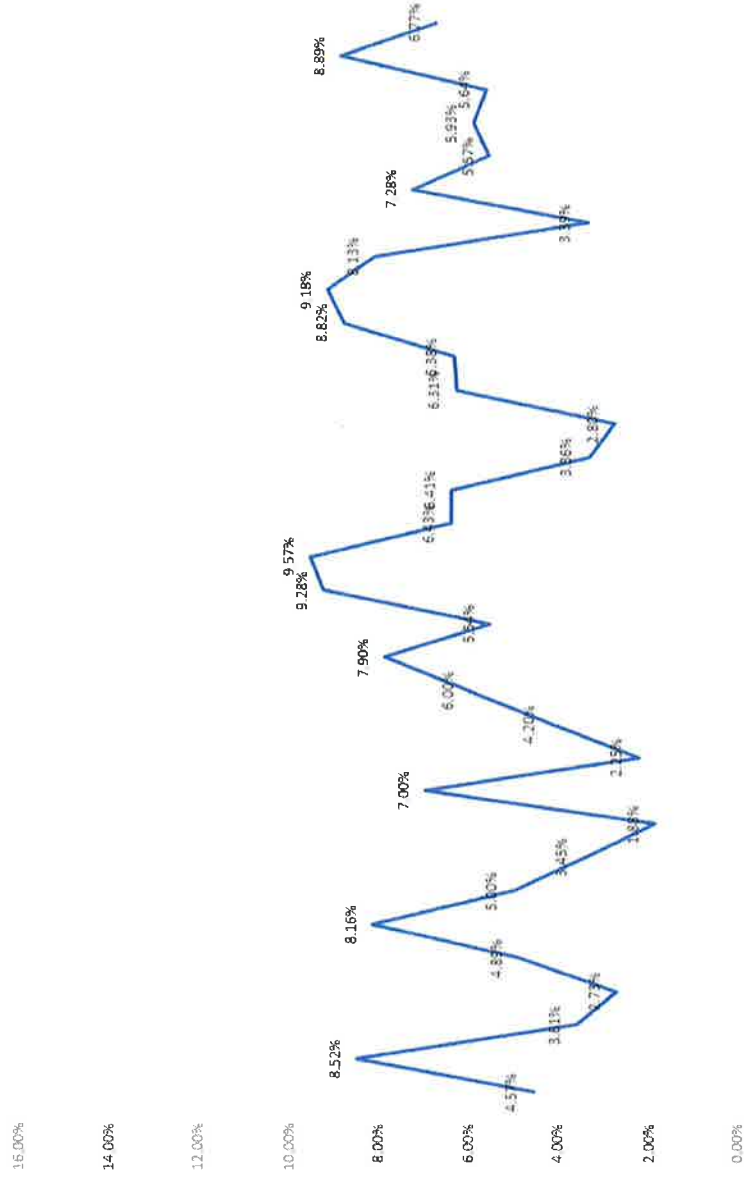
- 1 Reflective Light
- 1 Transmissive Light
- 2 Detection
- 3 Ejection





Recology's Response INTERNAL AUDITING

SMP %





Recology's Response UPSTREAM AUDITING



Contamination Audit

Recology CleanScapes
117 South Main St
Seattle, WA, 98119, 1-206-859-6700

NO.
00021

Alarm Date
02/21/2018

Recycling Container

Was any contamination found in the recycling?

Yes

1. If yes, what are the contaminants
Textiles, food, construction debris

Comment recommendations

Put a lock on container and increase size of garbage container

What is the estimated percentage of
overall contamination?

100



Photo 1
Description of photo 1



Photo 2
Description of photo 2



Photo 3
Description of photo 3

BOTHELL

RESIDUAL REQUIREMENTS

Follow your requirements.
If you are Recycling and
don't, please correct
yourself!

Height
20ft. - 22ft. (6ft. - 6ft. 6in.)
24ft. (7ft. 6in.) - 26ft. (7ft. 11in.)
28ft. (8ft. 6in.) - 30ft. (9ft. 0in.)
32ft. (9ft. 6in.) - 34ft. (10ft. 0in.)
36ft. (10ft. 6in.) - 38ft. (11ft. 6in.)
40ft. (12ft. 0in.) - 42ft. (12ft. 6in.)
44ft. (13ft. 0in.) - 46ft. (13ft. 6in.)
48ft. (14ft. 0in.) - 50ft. (14ft. 6in.)
52ft. (15ft. 6in.) - 54ft. (16ft. 0in.)
56ft. (16ft. 6in.) - 58ft. (17ft. 0in.)
60ft. (18ft. 0in.) - 62ft. (18ft. 6in.)
64ft. (19ft. 0in.) - 66ft. (19ft. 6in.)
68ft. (20ft. 6in.) - 70ft. (21ft. 0in.)
72ft. (22ft. 0in.) - 74ft. (22ft. 6in.)
76ft. (23ft. 0in.) - 78ft. (23ft. 6in.)
80ft. (24ft. 0in.) - 82ft. (24ft. 6in.)
84ft. (25ft. 0in.) - 86ft. (25ft. 6in.)
88ft. (26ft. 6in.) - 90ft. (27ft. 0in.)
92ft. (27ft. 6in.) - 94ft. (28ft. 0in.)
96ft. (28ft. 6in.) - 98ft. (29ft. 0in.)
100ft. (30ft. 0in.) - 102ft. (30ft. 6in.)
104ft. (31ft. 6in.) - 106ft. (32ft. 0in.)
108ft. (33ft. 0in.) - 110ft. (33ft. 6in.)
112ft. (34ft. 6in.) - 114ft. (35ft. 0in.)
116ft. (35ft. 6in.) - 118ft. (36ft. 0in.)
120ft. (37ft. 0in.) - 122ft. (37ft. 6in.)
124ft. (38ft. 6in.) - 126ft. (39ft. 0in.)
128ft. (40ft. 0in.) - 130ft. (40ft. 6in.)
132ft. (41ft. 6in.) - 134ft. (42ft. 0in.)
136ft. (42ft. 6in.) - 138ft. (43ft. 0in.)
140ft. (43ft. 6in.) - 142ft. (44ft. 0in.)
144ft. (44ft. 6in.) - 146ft. (45ft. 0in.)
148ft. (45ft. 6in.) - 150ft. (45ft. 6in.)

BURIEN

RESIDUAL REQUIREMENTS

Your materials do not meet collection requirements.
Before your next collection, please correct the items
checked below

Recycling
- Recycle materials in a bin
- No bags or boxes
- No food or liquids
- No tires, auto parts, appliances, etc.
- No stumps, construction debris
- No yard waste
- No paint cans
- No oil
- No propane tanks
- No aerosols
- No flammable liquids
- No hazardous materials
- No other items not accepted at recycling

Curbside
- Curbside recycling (Recycle Bin)
- No bags or boxes
- No food or liquids
- No tires, auto parts, appliances, etc.
- No stumps, construction debris
- No yard waste
- No paint cans
- No oil
- No propane tanks
- No aerosols
- No flammable liquids
- No hazardous materials
- No other items not accepted at recycling



Recology CleanScapes
 Published by Darlene Gombog February 28
 #recycle #aluminum #recycling #recyclingtips
 Fully free of food residue, aluminum foil and pie trays are ready



Recology CleanScapes
 Send Message

Recology CleanScapes
 Published by Darlene Gombog March 14
 #plastic #recycling #recyclingtips

Plastic lids under three inches that CANNOT be screwed back onto an empty #plastic bottle should be tossed in the trash.



Recology CleanScapes
 Send Message

Recology CleanScapes
 Published by Darlene Gombog
 Did you know? #Recyclables should be placed loose in your blue bin. Avoid use of black or white plastic bags to contain recyclables.



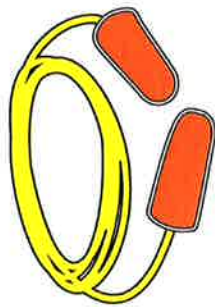
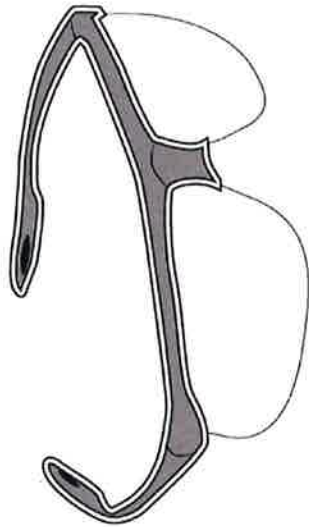
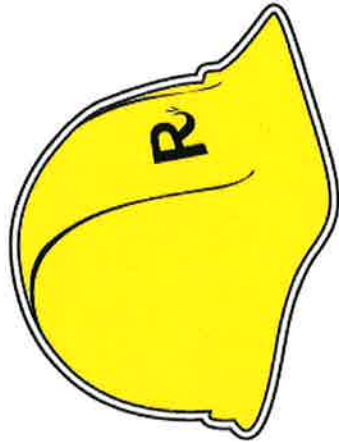
Recology CleanScapes
 Send Message

Recology's Response CUSTOMER COMMUNICATION

- ✓ Social media
- ✓ Website
- ✓ Invoice Messages
- ✓ Monthly E-Newsletter

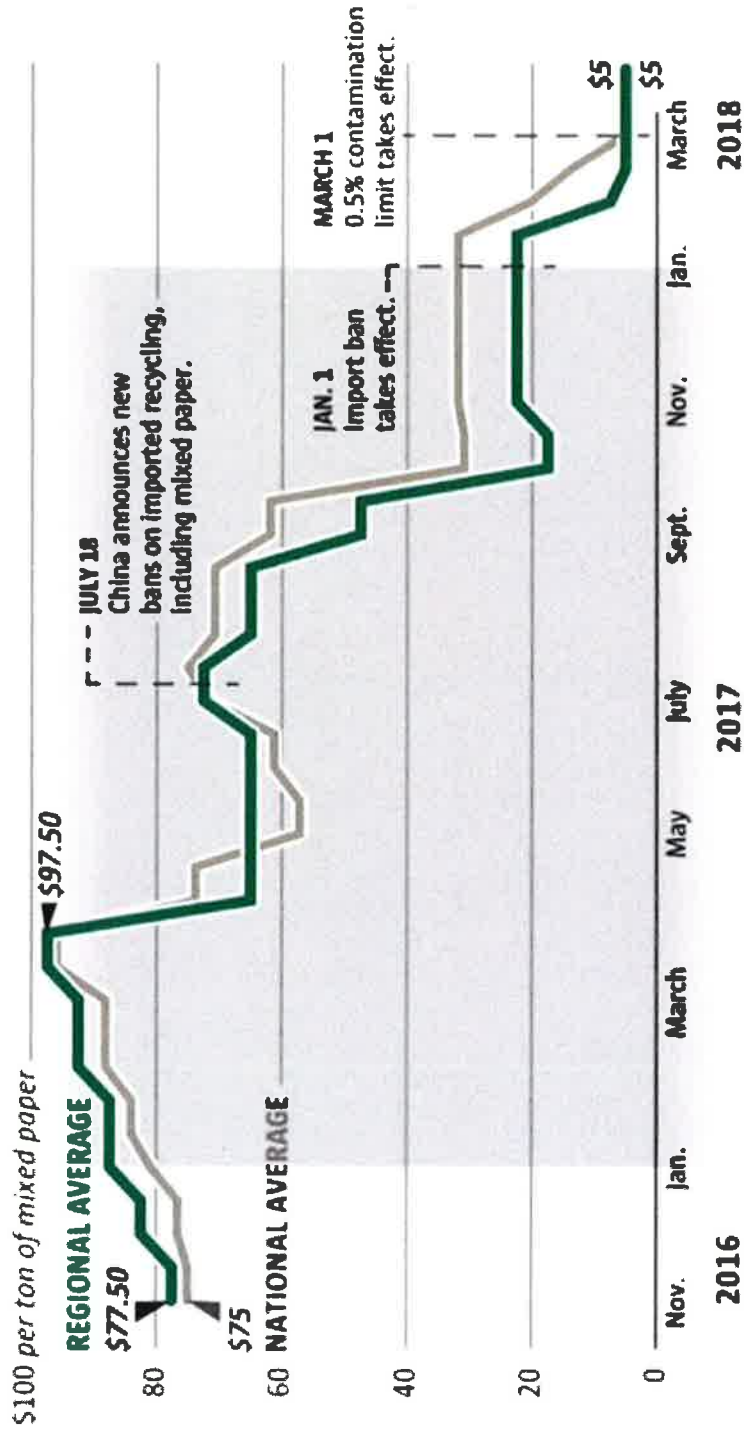


Facility Tour





Market Update



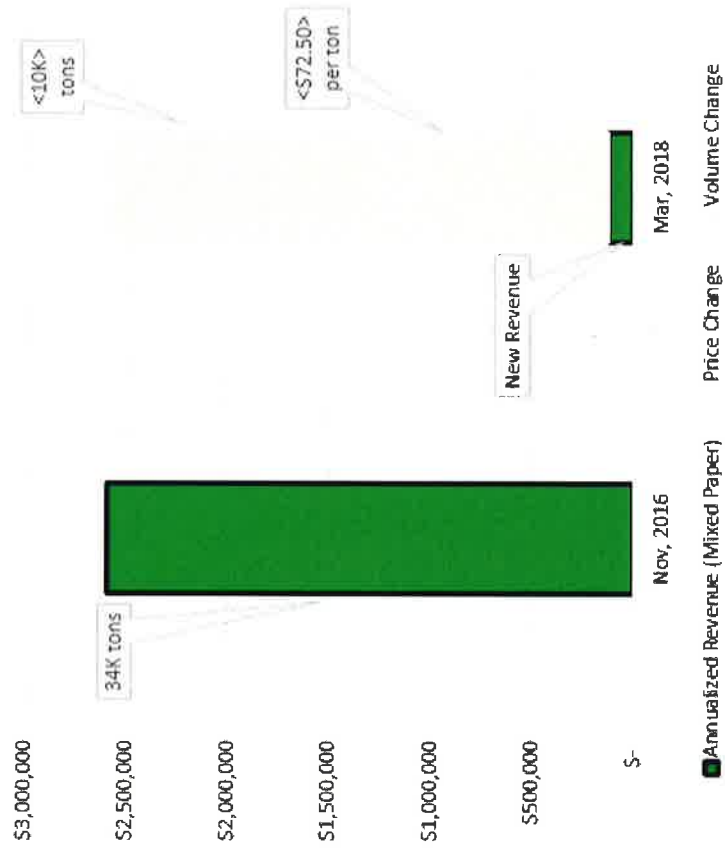
Source: RecyclingMarkets.net

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Financial Impact

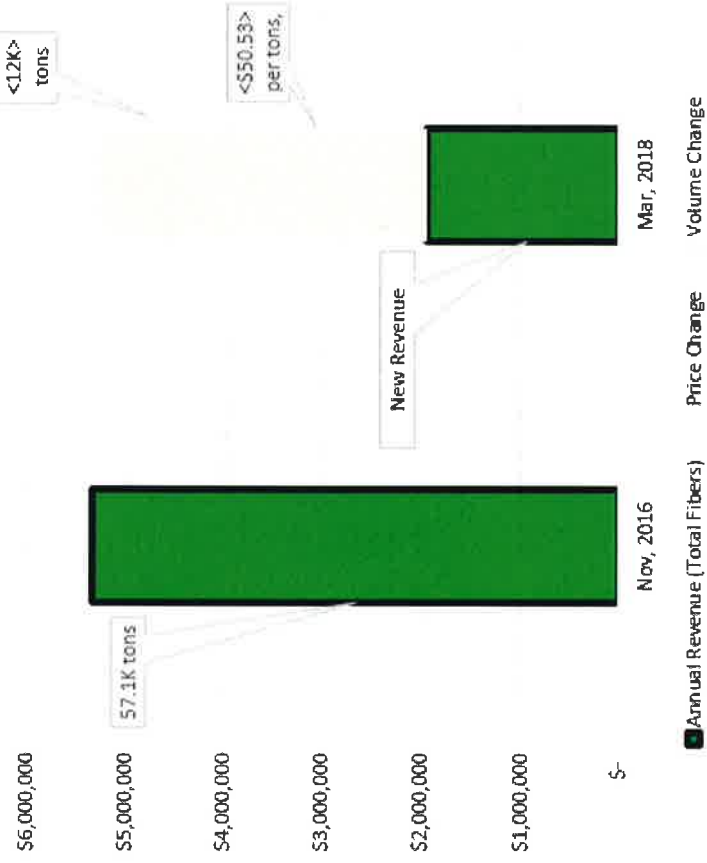
Change in Mixed Paper Revenue





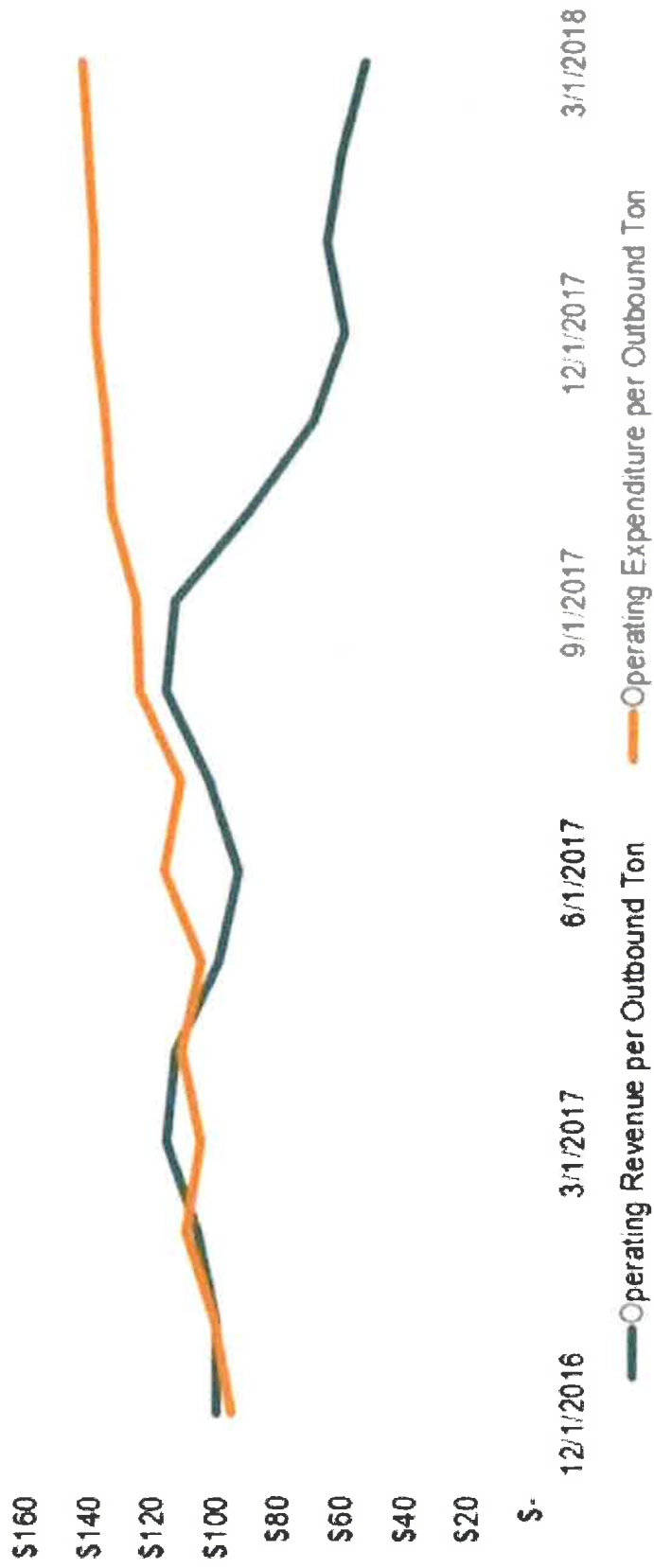
Financial Impact

Change in Total Fiber Revenue





Financial Impact





Guiding Principles for Financing Recycling

Oregon Revised Statutes:
"just, reasonable, and adequate"

459A.085 City, county authority to issue collection service franchises; opportunity to recycle; rates. (1) The Legislative Assembly finds that providing for collection service including but not limited to the collection of recyclable material as part of the opportunity to recycle is a matter of statewide concern.

(2) The exercise of the authority granted by this section is subject to ORS 221.735 and 459.085 (3).

(3) It is the intent of the Legislative Assembly that a city or county may displace competition with a system of regulated collection service by issuing franchises which may be exclusive if service areas are allocated. The city or county may recognize an existing collection service. A city or county may award or renew a franchise for collection service with or without bids or requests for proposals.

(4) In carrying out the authority granted by this section, a city or county acts for and on behalf of the State of Oregon to carry out:

(8) The rates established under this section shall be just and reasonable and adequate to provide necessary collection service. The rates established by the city or county shall allow the person holding the franchise to recover any additional costs of providing the opportunity to recycle at the minimum level required by ORS 459.005, 459.015, 459.035, 459.250, 459.992 (1) and (2), 459.995 and 459A.005 to 459A.665 or at a higher level of recycling required by or permitted by the city or county. The rates shall also allow the person to recover the costs of education, promotion and notice of the opportunity to recycle provided by a person holding a franchise.

(b) The opportunity to recycle may be provided by:

(A) The person holding the franchise;

(B) Another person who provides the opportunity to recycle to the franchise holder's customers; or

(C) A person who is granted a separate franchise from the city or county solely for the purpose of providing the opportunity to recycle.

(c) In determining who shall provide the opportunity to recycle, a city or county shall first give due consideration to any person lawfully

providing recycling or collection service on June 1, 1983, if the person continues to provide the service until the date the determination is made and the person has not discontinued the service for a period of 90 days or more between June 1, 1983, and the date the city or county makes the determination.



Guiding Principles for Financing Recycling

Washington UTC:
"fair, just, reasonable, and sufficient"

2. WUTC RATE SETTING PROCESS

2.1 Rate Setting Process

The company must file its proposed rate changes in a revised tariff. The Commission must receive the revised tariff at least forty-five days before the proposed effective date. Commission

2.2 How we set rates

The company must prove its proposed rates are fair, just, reasonable, and sufficient. It must file detailed financial and operational data to prove the proposed rates are fair, just, reasonable, and sufficient. The company is entitled to recover appropriate expenses, and a reasonable profit. ~~verbal presentation with its recommendation. The company, customers, and other interested persons can address their concerns to the Commissioners.~~

Very simply, the Commissioners can take only two actions. They can approve the proposed



Recology's Proposed Principles for Financing Recycling

- ✓ Fair
- ✓ Reasonable
- ✓ Adequate
- ✓ Resilient
- ✓ Transparent





Recology: a world without waste™