



A Public Agency

SHOREWAY OPERATIONS AND CONTRACT MANAGEMENT

STAFF REPORT

To: SBWMA Board Members
 From: Hilary Gans, Sr. Contracts and Operations Manager
 Date: March 22, 2018 Board of Directors Meeting
 Subject: Shoreway Operations and Market Update

Market Update and Analysis

The international Fiber markets are experiencing an unprecedented price collapse. Market conditions are unpredictable and the ability to market mixed paper is a serious concern going forward.

Changes in China’s Fiber Commodity standards have affected all international fiber markets.

In multiple updates to the Board during the past six months, SBWMA staff has been reporting on anticipated changes by the Chinese government on the importation of fiber and plastics and the impacts these changes are having on commodity pricing. Specifically, the Chinese government’s Ministry of Environment Protection has banned or set stringent quality standards on 24 different imported waste materials. Mixed Paper is one of these banned materials and the new quality standard of 0.5% contamination for all recovered paper and paperboard (sorted residential paper and OCC cardboard) took effect in March of 2018 (delayed from initial implementation date of January 2018).

Can the SBWMA MRF meet the new Chinese recovered paper standard?

No. In anticipation of the change to the sorted paper standard, SBR tried various configurations of labor and equipment at the MRF to see if China’s new standard could be met (see table 1). Even after running the paper two-times with double sort labor, the standard could not be met. In fact, Industry experts have stated that ***no MRF is the US is currently producing a paper that meets China’s new quality standard.*** So, China’s change in quality standards effectively eliminates the opportunity to export sorted paper to China.

Table 1. China Import Enforced Standard for Recovered Paper		
	Old Standard	2018 Standard
Allowable Contamination Level	5-8%	0.5%
<i>Contamination is any non-paper items including other recyclable materials like plastics and cans as well as anything that is trash. Cardboard and unbleached fiber is also limited to 3%. After mechanical sorting at the MRF today, cardboard composes up to 30% of sorted residential paper by weight that must be manually removed.</i>		

Why is China making such a drastic change?

China's politics are opaque but the leader of China and the Ministry of Environmental Protection has stated the goals of the policy as: 1) to clean up the environment, 2) to develop internal practices of waste recycling and reuse within China, and 3) not to import "Foreign Garbage" into the China. Viewing these action from the outside the country there appears to be a political mix of pragmatic-goals and national pride driving these seismic changes.

"Foreign garbage that can be replaced by domestic resources will be phased out by the end of 2019. The types and amounts of garbage will be cut down steadily....Foreign garbage has been widely denounced".

Quote from the China Ministry of Environment Protection

How has the commodity market changed as a result?

80% of the mixed paper from the Shoreway MRF (and other west coast MRF's) is marketed to China. As of March 1, no mixed paper is being imported into China, but is seeking homes in other countries that consume small amounts of waste paper – mostly in India and Southeast Asia. These countries have small paper production infrastructure and cannot take-up the slack created by China's non-importation of mixed paper. As a result, mixed paper is currently glutting the international markets and the shift in supply/demand is allowing the non-China buyers to demand higher quality at lower prices (e.g., the pricing for mixed paper has dropped from a 2017 market-high of \$157 per ton to \$0 per ton while Carboard has also been impacted and is currently selling for half of its average 2017 price. Around the country, there are many municipalities exercising the Force Majeure provision in their contracts, renegotiating their city contracts, stockpiling materials, landfilling paper, and some MRFs are simply closing their business.

"China Filed with the WTO (World Trade Organization) that in 2018 Mixed Paper and Post-Consumer Plastics are banned, and will no longer be allowed into the country....they did this for two reasons: too much contamination or too much non-white paper. Mixed paper can no longer be shipped to China, non-

China markets cannot handle the volume and domestic markets in the southwest US do not (currently) exist....the non-China markets are very small with older processing equipment and limited capacity, thus the entire MRF industry in the western US is basically dependent on the China Market"

Quote from "Waste Advantage" (a leading industry journal), January 2018

What is the effect on the SBWMA?

Mixed Paper composes 47% of the total tons sold from the Shoreway MRF and 30% of the total revenues from commodity sales. So far, SBR has been able to find market outlets for paper from the Shoreway MRF in a time when other is struggled. (Note that in March, there have been 17 container loads of paper shipped from Shoreway was rejected from China or by inspectors at the Port of Oakland. The cost to the Agency is still being determined but is estimated between \$50-100K. FYI—due to extremely fast response by SBR's material brokers, this cost was mitigated downwards from an estimated \$370k).

The value of mixed paper is currently \$0 and cardboard is at 50% of its value only 6-months ago. Additionally, to attract buyers, SBR has had to hire additional sort labor to try and clean the paper (remove contamination and non-white paper), adding to the cost of processing recycling. Both factors are impacting the current budget and are forecast to create a FY17/18 budget shortfall of \$2-3 million. Note, due to China banning the import of mixed post-consumer plastics, markets for many grades now have negative-pricing and there is general difficulty in finding buyers. As a result, miscellaneous non-container plastics (plastics 3-7) are now being landfilled.

What is the future outlook?

At the moment, there are no credible predictions about whether China will soften its import restrictions. There seems to be pressure building from manufacturers inside China who have relied on US recycled fiber for production and are now unable to access global markets for this supply. Staff has been researching additions of labor and sorting equipment to attain the new China paper standards. As discussed in staff report **Resolution Approving SBR Sort Labor Reimbursement**, Staff is recommending additional sort staff in the short-term to upgrade mixed paper so that it can be marketed without interruption and minimize the risk of load rejections. As conditions become more predictable, additional sort equipment may be a more attractive approach to making a consistently high-quality sorted paper and recovering more OCC by removing it from the sorted paper. Staff will directly address this topic, and the respective choices that emerge, with the SBWMA's Finance Committee; Zero Landfill Committee; and the full Board during the next few months as we recommend our FY18/19 Operating Budget and the 5-year Capital Improvement Plan.

Price and Commodity Movement changes:

Commodity prices for fiber grades continue to decline in February and year-over-year, **the average price for mixed paper and cardboard dropped 77% and 8% respectively** (see Commodity Price Trend—Graph 1). A Staff will report on the impact to Budget after the first-quarter of 2018. Will be presented in April along with a revenue forecast for FY18/19.

Graph 1.



STAFF REPORT

To: SBWMA Board Members
From: Hilary Gans, Sr. Contracts and Operations Manager
Date: March 22, 2018 Board of Directors Meeting
Subject: Resolution Approving SBR Sort Labor Reimbursement

Recommendation

It is recommended that the SBWMA Board of Directors approve Resolution No. 2018-11 attached hereto authorizing the following action: **Resolution Approving SBR Sort Labor Reimbursement.**

Summary

Fiber Market conditions have changed dramatically in the last six-months since China effectively banned mixed paper imports to the country. Since the start of 2018, SBR and staff have been trying to cope with market price fluctuations and the changing quality standards of the market. To ensure the marketability of paper (aka "fiber") from the MRF, SBR has hired additional sort labor to sufficiently clean the paper to meet the new quality standards. SBR is requesting reimbursement for the on-going cost of added sort labor to maintain marketability of the MRF fiber.

Background

Please refer to Staff report **5A Operations and Market Update** in today's agenda packet for background on the market conditions that are urgently driving the need for additional sort labor.

Analysis

The market for Mixed Paper has changed dramatically due to a fundamental, unilateral position shift in longstanding materials specifications issued by the Chinese government. In SBR's efforts to meet the new market standards, they have hired additional sort labor to clean mixed paper to a quality acceptable to commodity buyers - without this effort, the mixed paper product would likely have been rejected by buyers and would either need to be stockpiled or landfilled.

SBR has provided ample notification to SBWMA staff about the market changes and need for additional sort labor. Since January, SBR and SBWMA staff have been implementing a Commodity Quality Improvement Plan to address the rapid change in market conditions. The plan has included:

- 1) **Long-term Equipment Component** of researching and obtaining quotes of new sorting equipment to remove contamination and to meet the new Chinese paper quality standard of no-more-than 0.5% contamination (vs. the previous standard of 5-8% contamination that's been in play for 20+).
- 2) **Short-term Sort Labor Component** of increasing sort labor and adjusting operational practices to remove as much contamination as possible. This has been an iterative process where different sorting regiments have been implemented and the resulting paper's contamination levels tested (see **Attachment B**, MRF Paper Quality Improvement Sort Test Results).

Based on the sort test performed, SBR has concluded that:

- 1) The SBWMA MRF is not capable of meeting China's new paper quality standard with its current equipment configuration, no matter how many sorters are added.
- 2) With additional sort labor, the SBWMA MRF is capable of making paper grades that meet the standards of non-China buyers.

Since the conclusion of these tests, SBR has been operating the MRF with 10 additionally sorters. The \$47,902 per month cost of the additional sorters has been shared between SBR and the SBWMA. Going forward, on a provisional basis to be determined by SBWMA staff, SBR is requesting full reimbursement for the cost of sort labor to clean commodities to meet the new market conditions (see **Attachment A**, SBR letter dated March 6, 2018 requesting Sort labor reimbursement).

If the Board decides to reimburse SBR for the additional provisional MRF sort labor costs going forward, it is solely at the Board's discretion. There is no specific obligation under the Operations Agreement requiring reimbursement. If SBR is reimbursed for additional provisional sort labor, it would be done under a "Change in Services (see below)" provision in the Agreement, until it is determined that this additional sort labor is no longer necessary.

SBWMA's legal representative has confirmed the following pathway for board consideration of the SBR request in the SBR Agreement's Section 12.13 RIGHT OF AUTHORITY TO MAKE CHANGES. It reads:

"...Authority may, without amending this Agreement, direct Contractor to modify the scope of one or more such services, may direct Contractor to modify its performance under any other section of this Agreement. Contractor shall promptly and cooperatively comply with such direction".

The monthly cost for six additional MRF sort labors is \$47,902. If approved, Staff will monitor the number of sorters utilized by SBR each month, and the associated additional costs. Additionally, Staff will tightly monitor the market conditions to verify the need for ongoing additional MRF sorter labor and will report back to the Board in any significant change in status.

Other peripheral, but relevant, issues relating to the sort labor reimbursement discussion are:

- SBR is also experiencing reduced profits from the change in market conditions. Specifically, the Operations Agreement has a Commodity Revenue Share clause whereby SBR receives a 25% share in commodity sales revenue as an incentive. In 2017, this amounted to \$680,262 – this is unlikely to continue in 2018.
- The cost of load rejection or disposal of non-marketable recyclables is a cost borne by the SBWMA. The cost of handling a rejected shipping-container of paper ranges from \$3,000 to 22,000. It is typical for multiple containers to be rejected at one time – for example the SBWMA had 17 containers rejected from China in March and is waiting for the materials to arrive back at the US and for the cost of the rejection is estimated at \$50-70K. Future costs of rejection for similar sized loads are estimated to be up to \$370k.
- The market conditions are currently in a unpredictable state of flux, and no clear determination about future material pricing or movement can be made at this time.

Fiscal Impact

The current FY17/18 Budget has been impacted by both the short-fall in commodity revenues and on the expense side by the increase in sort labor. The cost of reimbursing SBR for sort labor is estimated to be \$47,902.10 per month (4.44 per ton). The budget impact over the remaining 4-months of the fiscal year is estimated at -\$200,000 of expense which was not anticipated in mid-year budget. This new expense will add to the annual SBR operations cost of \$35.92M. Additionally, Staff will provide a recommendation on this topic for Board consideration in the development of the FY18/19 Budget in April.

Attachments:

Resolution 2018-11

Attachment A. SBRs' letter to the SBWMA requesting reimbursement for sort labor.

Attachment B. MRF Paper Quality Improvement Sort Test.



RESOLUTION NO. 2018-11

RESOLUTION OF THE SOUTH BAYSIDE WASTE MANAGEMENT AUTHORITY BOARD OF DIRECTORS APPROVING SBR SORT LABOR REIMBURSEMENT

WHEREAS, SBR has requested reimbursement for additional MRF sort labor,

WHEREAS, additional sort labor is the only short-term means for the agency to meet new commodity standards,

WHEREAS, meeting new commodity standards is necessary to ensure that recyclables have a market outlet and are not landfilled.

NOW, THEREFORE BE IT RESOLVED that the South Bayside Waste Management Authority hereby approves a Resolution Approving SBR Sort Labor Reimbursement.

PASSED AND ADOPTED by the Board of Directors of the South Bayside Waste Management Authority, County of San Mateo, State of California on the 22nd day of March, 2018, by the following vote:

Agency	Yes	No	Abstain	Absent	Agency	Yes	No	Abstain	Absent
Atherton					Menlo Park				
Belmont					Redwood City				
Burlingame					San Carlos				
East Palo Alto					San Mateo				
Foster City					County of San Mateo				
Hillsborough					West Bay Sanitary Dist				

I HEREBY CERTIFY that the foregoing Resolution No. 2018-11 was duly and regularly adopted at a regular meeting of the South Bayside Waste Management Authority on March 22, 2018.

ATTEST:

Charlie Bronitsky, Chairperson of SBWMA

Cyndi Urman, Board Secretary

South Bay Recycling, LLC

TO: Hilary Gans

FR: Dwight Herring

DA: March 6, 2018

RE: **REQUEST FOR ADDITIONAL MRF SORT LABOR**

National Sword, China's customs inspection program that was launched in February of 2017, and its subsequent import bans (effective January 1, 2018) on mixed paper and various grades of postconsumer plastics have hit the U.S. recycling industry hard, particularly as of late September and into the fall. Under the new regulations, effective March 1, 2018, cardboard and sorted paper that contains more than 0.5% prohibitive materials is subject to shipment rejection.

In late February, SBR was notified of its first ever shipment rejection. Sixteen (16) containers were rejected due to fiber that contained more than 0.5% prohibitive materials. The cost for this shipment rejection may be in excess of \$50,000.

Recognizing that the MRF processing equipment was not designed to produce a post-sort fiber product that contains 0.5% prohibitive materials, and for that matter no MRFs in the US are designed or capable of doing so, in the summer of 2017 SBR began experimenting with MRF adjustments (throughput levels, shaft speeds, screen height, etc.). Those results did not meet the desired outcomes, thus in the fall of 2017 SBR began conducting various sort tests to determine if China's new material quality standard could be achieved without the addition of upgraded optical and mechanical sorting equipment. The various iterations determined that a contamination level of 0.5% could not be achieved by significantly slowing the system, modifying the grades being produced, or reprocessing the sorted product. The results of these tests are attached.

Understanding that neither the current processing equipment or changes in operating approaches will produce a post-sort fiber product that can be marketed to China, SBR began seeking to market post-sort fiber to other markets (i.e., Indonesia, Vietnam, Malaysia, Korea, etc.). However, to avoid an interruption of material movement, material quality would need to improve because the non-China markets are very small and do not have the sophisticated fiber preparation systems found at most mills in China. This could only be accomplished by increasing the number sorters assigned to fiber post-sort stations and adding bale dressers to remove prohibitive materials from the outside of fiber bales produced prior to shipment.

This change in operations was discussed with SBWMA Contracts Manager and approved with the understanding that reimbursement of additional costs would need to be formally approved by the SBWMA Board of Directors.

SBR respectfully requests the SBWMA Board of Directors to approve additional staffing of MRF laborers and reimbursement for costs associated with this increase since January 1, 2018 (see the attached cost worksheet). These changes are requested to mitigate the risk of failing a pre-shipment inspection, which would prevent movement of materials.

Action Steps Taken by South Bay Recycling to Improve Material Quality

To produce a recovered paper quality that meets China's new material quality standards of 0.5% contaminants, SBR conducted various material processing tests to ascertain if this new fiber quality standard for sorted paper could be achieved without the addition of new equipment. Below are the results of each test.

Test #1 (Mix Paper from Commercial & Residential Polishing Screens)

The overs (fiber) from the commercial and residential polishing screens were conveyed to the fiber post-sort quality control area on two separate conveyor belts (Line #4 and Line #3 respectively) where four (4) sorters stationed at each line, manually removed contaminants (non-fiber), after which, the material was conveyed into a single bunker. This material was combined with recovered cardboard and baled. A material composition test was performed on a bale, resulting in the following:

Non-OCC Fiber: 22.5%

Contaminant: 4.9%

The amount of non-cardboard fiber is excessive and cannot be sustainably marketed as OCC, and the contaminant level exceeds the amount of allowable.

Test #2 (Mix Paper from Commercial Polishing Screen)

The overs (fiber) from the commercial polishing screen was conveyed to the fiber post-sort quality control area where four (4) sorters manually removed contaminants (non-fiber), after which, the material was conveyed into a single bunker. This material was combined with recovered cardboard and baled. A material composition test was performed on a bale, resulting in the following:

Non-OCC Fiber: 7.5%

Contaminant: 2.0%

The amount of non-cardboard fiber was initially determined to be at an acceptable level to be marketed as OCC, and the contaminant level exceeded the 0.5% amount allowable in China. In order to determine the market acceptance for this material shipments were made to several markets, but the outcome was not favorable and as such the material is no longer being combined with OCC.

Test #3 (Residential Mix Paper)

Mix paper from two residential news screens and the residential polisher were directed into a single bunker after contaminant materials were removed (mechanically and manually) during normal processing operations at a system throughput of 28 tons per hour. A material composition test was performed on this material, resulting in the following:

Non-Mix Paper fiber: 47.0%
Contaminant: 6.0%

The amount of non-mix paper fiber and contaminant materials exceeds the allowable level.

Test #3A (Reprocess of Residential Mix Paper)

A portion of the mix paper from Test #3 was processed for a second time at a reduced throughput speed of 10 tons per hour. Three (3) additional sorters were stationed at Pre-Sort for a total of seven (7) sorters. Following mechanical separation of contaminant and prohibitive materials, the mix paper was directed to three post-sort quality control lines staffed with a total of four (4) sorters per line, and conveyed into a single bunker. A material composition test was performed on this material, resulting in the following:

Non-Mix Paper fiber: 18.0%
Contaminant: 3.0%

The amount of non-mix paper fiber and contaminant materials exceeds the allowable level.

Test #4 (Residential Mix Paper from News Screens Only)

Mix paper from the two residential news screens was recovered and directed into a single bunker after contaminant materials were removed (mechanically and manually) during normal processing operations at a system throughput of 10 tons per hour. Four (4) additional sorters were stationed at Pre-Sort for a total of eight (8) sorters. Following mechanical separation of contaminant and prohibitive materials, the mix paper reported to two post-sort quality control lines staffed with a total of four (4) sorters per line, and conveyed into a single bunker.

Test #4A (Reprocess of Residential Mix Paper from News Screens Only)

The mix paper from test #4 was unloaded from the bunker and processed for a second time at a throughput speed of 10 tons per hour. Following mechanical separation of contaminant and prohibitive materials, the mix paper reported to two post-sort quality control lines staffed with a total of four (4) sorters per line, and conveyed into a single bunker. A material composition test was performed on this material, resulting in the following:

Non-Mix Paper fiber: 8.0%
Contaminant: 0.5%

The amount of non-mix paper fiber exceeds the prevailing allowable level of less than 3% non-mix paper, and contaminant materials met the allowable level. Note that shipments arriving in China after March 1, 2018 with more than 3% non-mix paper fiber (typically brown cardboard or duplex board boxes) are subject to shipment rejection.