



# 2018 ANNUAL REPORT



Submitted February 27, 2019



## South Bay Recycling, LLC

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February 27, 2019

Joe La Mariana  
Executive Director  
SBWMA/Rethink Waste  
610 Elm Street, Suite 202  
San Carlos, CA 94070

Dear Mr. La Mariana:

Enclosed is a copy of the South Bay Recycling's 2018 Annual Report. South Bay Recycling will send electronic copies to each jurisdiction.

In accordance with the requirements of our Operating Agreement, the undersigned hereby certifies, under penalty of perjury, that the report submitted herewith is true and correct to the best knowledge of the undersigned after reasonable inquiry.

If you should have any questions or require additional information, please call me at (650) 802-8355.

Sincerely,

*Dwight E Herring*

Dwight E Herring  
General Manager

cc: Hilary Gans  
John Mangini

# **SOUTH BAY RECYCLING**

## **ANNUAL REPORT TO THE SBWMA**

**FOR YEAR  
2018**

**Submitted  
February 28, 2019**

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## 2018 ANNUAL REPORT

### DEFINITIONS

**Municipal Solid Waste (MSW)** – MSW delivered to the Shoreway Facility is delivered by the following sources: Recology of San Mateo County; Member Agency Vehicles; Public Self-Hauled; Maintenance Facilities from Recology of San Mateo County and South Bay Recycling; and, Contracted Non-Franchised Haulers.

**Bulky Item/Reusable/Recoverable Materials** – Recyclable materials recovered by Sorters from various waste streams. These items include, but are not limited to: electronic waste, cardboard, mixed rigid plastics, scrap metal, reusable furnishings, appliances, clothing, etc.

**Organics Materials** – Compostable materials such as food scraps, food-soiled paper fiber, wood and other plant materials collected Recology of San Mateo County from residential, commercial and multi-family complexes and delivered to the Shoreway Facility; and/or wood and other plant materials delivered to the Shoreway Facility by the public.

**Inert/C&D Materials** – Mixed Dirt, Cement, Rock, and other Construction and Demolition Debris delivered to the Shoreway Facility by the public.

**Recycling Materials** – Cardboard, Mixed Paper and Bottles and Cans collected by Recology of San Mateo County from residential, commercial and multi-family complexes and delivered to the Materials Recovery Facility for processing; and/or Recyclable materials delivered to the Public Recycling/Drop-Off Center by the public.



## 2018 ANNUAL REPORT OPERATIONS SUMMARY

Total municipal solid waste tonnage received:	220,593
Total bulky item, reusable, recoverable tonnage received:	1,435
Total organic tonnage received:	120,427
Total inert and C&D tonnage received:	50,814
Total recyclable tonnage received:	79,446
<b>Total tonnage received into Shoreway Facility:</b>	<b>472,716</b>
Total tonnage received into Transfer Station:	393,270
Total tonnage received into MRF:	79,446
Total tonnage disposed:	220,593
Total tonnage diverted:	252,123
<b>Overall Calculated Diversion Rate:</b>	<b>53%</b>



# OPERATING STATISTICS



## ABOUT SOUTH BAY RECYCLING

South Bay Recycling operates the Shoreway Facility Transfer Station, Materials Recovery Facility and Public Recycling Center under an Operating Agreement with the South Bayside Waste Management Authority (Rethink Waste).

South Bay Recycling, LLC, (SBR) is a joint venture between Recology Inc. (Recology) and Potential Industries Inc. (Potential Industries), both of which are experienced operators of mixed waste Material Recovery Facilities (MRFs), commingled residential and commercial recyclables MRFs, and transfer stations. This partnership brings together the strengths of Recology and Potential Industries to achieve Rethink Waste's vision of safe, efficient, and innovative waste reduction and recycling programs which are simple, smart and green!

Recology, Inc., is an employee-owned company dedicated to building exceptional resource ecosystems that protect the environment and sustain communities. With approximately 40 operating subsidiaries, Recology provides collection, hauling, processing, composting, and disposal services to homes and businesses in the Western United States. Recology also manages municipal processes and services, including urban cleaning services, collection, sorting, transfer, recovery, and landfill management. Their commitment to positively impact communities and the environment is driven by their mission to serve communities, the environment, and their employee owners.

Potential Industries, Inc., has evolved from a traditional buyback recycling center to embrace residential commingled processing, and secure additional markets through paper mill development and direct export. As such, Potential Industries can optimize recycling, maximize diversion, and ensure the consistent markets for recovered materials. Potential Industries was founded in Los Angeles as a privately held corporation in 1975. Potential is a full service diversified recycling company that operates four affiliated plants in Southern California. Suppliers of recyclable materials to Potential Industries include: municipalities, waste disposal companies, certified recycling centers, commercial and industrial accounts, and MRFs. The Company processes over 300,000 tons of recyclable material per year.

SBR's technologies and single stream processing methods allow for efficient sorting and recovery of recyclable materials using SBWMA sorting equipment (which is nearly ten years old) to meet the demands of sustainable communities and State-mandated diversion goals.

## FACILITIES, EQUIPMENT AND PERSONNEL



The Shoreway Facility is open to the public and provides residents, businesses, contractors, municipalities, and individuals the ability to bring their trash, yard trimmings, organics, and recyclable construction debris or recyclable materials for processing and transfer to permitted landfills, end users, and other processing centers for further separation and marketing of materials.

### **TRANSFER STATION OPERATIONS**

The Transfer Station is open to the public Monday through Friday from 6:00 a.m. to 6:00 p.m. and on Saturday and Sunday from 8:00 a.m. to 5:00 p.m.

#### **Acceptable Materials**

Municipal Solid Waste	Appliances
Recyclable Construction Demolition Debris (C&D)	Mattresses or Box Springs
Inert Materials (Concrete, Asphalt, Rock)	Sofas
Yard Trimmings	Garage Doors
Food Scraps	Tires
Refrigerators	Scrap Metal

#### **Unacceptable Materials**

Liquid wastes or sludge	Dead animals
Car batteries	Oils and solvents
Hot ashes	Medical waste
Sealed containers	Treated Wood Waste
Animal waste	Radioactive or Reactive Materials



Public customers entering the Shoreway Facility are greeted by our State Certified Weigh Masters, who visually inspect each load, identify the material type, and take accurate volumetric measurements to determine the total number of cubic yards brought in by the customer. The Weigh Master receives the appropriate payment from the customer, which is recorded in SBRs state of the art scale software system. Loads containing unacceptable materials are rejected and recorded. SBR management performs regular spot checks to ensure Weigh Masters are utilizing the appropriate methods to accurately measure contents of a load and are inspecting loads for unacceptable materials.

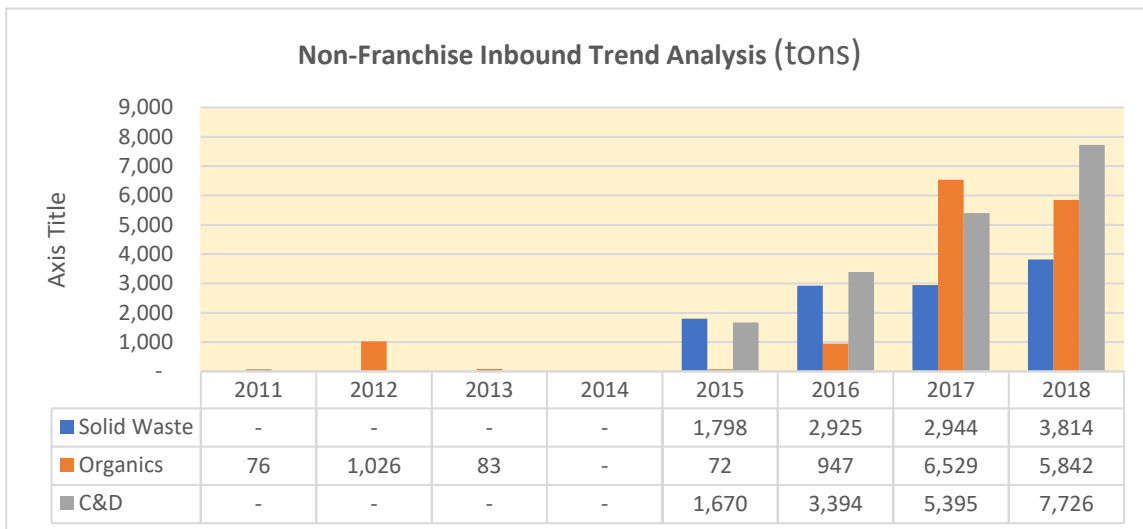
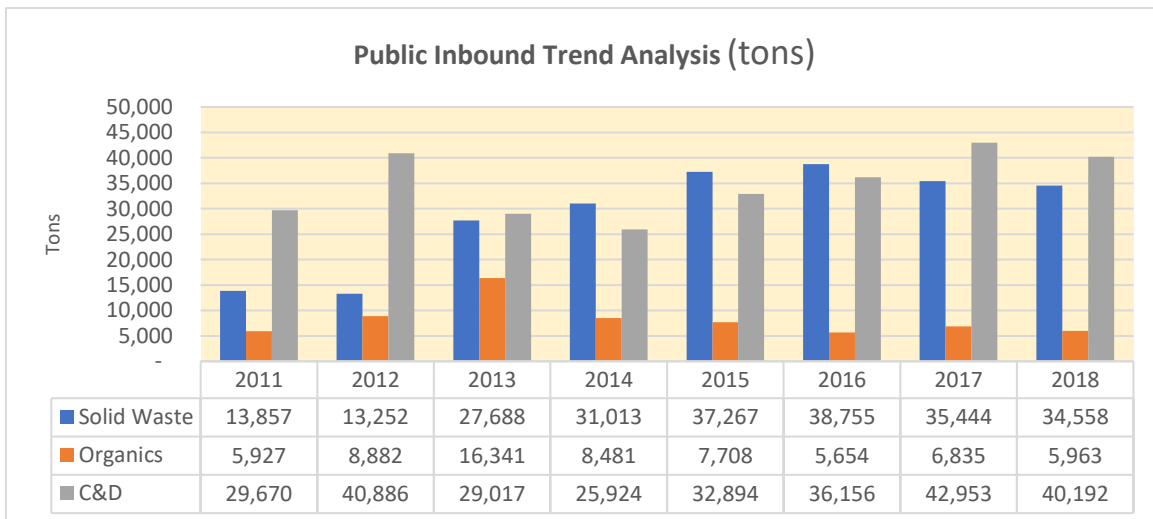
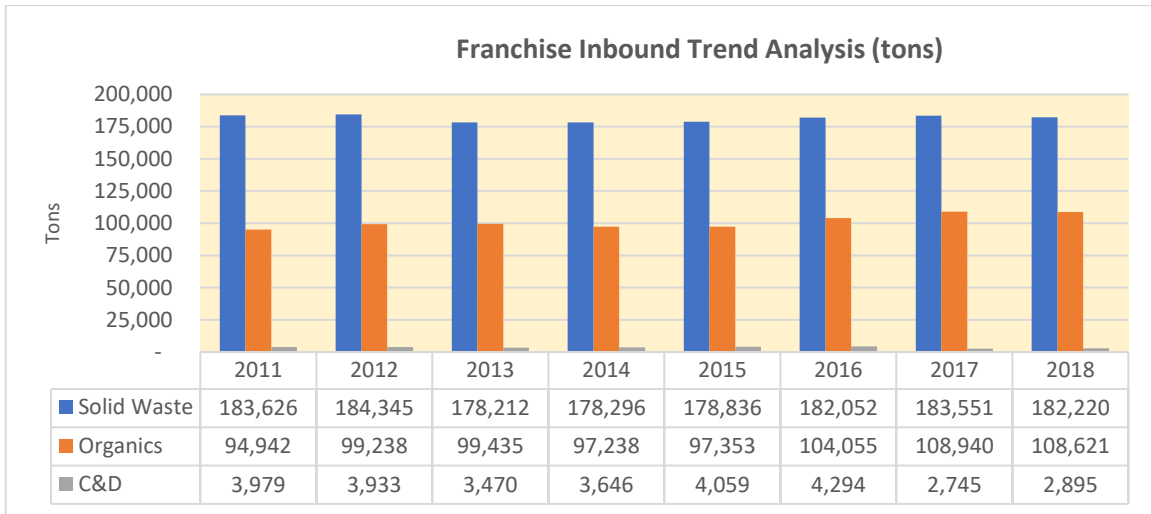
Public customers are directed to the public side of the Transfer Station where they are greeted by an SBR employee who checks the weigh ticket for the material type and directs the customer to the appropriate area for offloading. Sorters, trained to identify and recover materials that can be recycled or reused, remove these materials from the various waste streams for further processing. Recovered recyclable materials are stored in designated areas until they can be processed or sold. In some cases, the material is set aside as a specific grade, and in other cases materials are culled or pulled from mixed materials. These materials include:

- Appliances
- Refrigerators
- Tires
- Electronics
- Cardboard
- Scrap Metal
- Lumber
- Mixed Rigid Plastics
- Mattresses
- Sofas

Franchise and Non-Franchise collection vehicles enter the Shoreway Facility and stop on one of two 70' in-ground state certified scales. Whenever possible pre-established tare weights are used, and this provides for safer and more efficient operations because drivers do not have to exit, re-enter, and make another "lap" through the facility. Drivers enter equipment route and material information into the Driver Automated Terminal (DAT). The scale software system records each transaction and provides the Driver with a printed weigh ticket. Drivers exit the scale and deliver the contents of their equipment to either the Transfer Station or Materials Recovery Facility (MRF). Materials delivered to the Transfer Station are loaded into trailers and transported to the appropriate disposal site or processing facility. Materials delivered to the MRF are processed and the recovered recyclables are sold to export and domestic markets.

**Inbound Volume**

In 2018, SBR received a total of 393,259 tons into the Transfer Station. The graphs below show the inbound trend analysis for each entity, by major material type.



### **Self-Haul Diversion**

SBR is required to divert a minimum of 30,000 tons received from the public. Of the 80,714 tons received from the public, SBR diverted 41,858 tons (not including yard trimmings), resulting in a 52% diversion rate. With the inclusion of yard trimmings, SBR achieved a self-haul diversion rate of 58%. SBR continues to collaborate with the SBWMA to improve diversion to include the inbound franchise material streams, particularly as it relates to the Mixed Waste Processing project which is currently in the evaluation stage.



### **Compost Giveaway**

Customers who reside within the Rethink Waste service area are eligible to receive up to two 3-cubic yard bags of compost at no charge. Customers inform the Scale Attendant they would like to pick up compost, show proof of residency (e.g., utility bill, or identification card), and will be directed to the public side of the Transfer Station where customers are provided a shovel and bag(s) to fill with compost provided by Rethink Waste. Customers may pick up free compost twice per week, based on availability.



## MATERIAL RECOVERY FACILITY OPERATIONS



The Material Recovery Facility accepts residential and commercial single stream recyclables and source separated fiber. Through mechanical and manual processing, this material is separated by commodity type, baled and sold to market. The processing equipment is performing in a manner consistent with design parameters, however, it is no longer possible to achieve production and quality levels that meet market material quality standards for the highest quality sorted paper and cardboard. Like all MRFs in California, the demand for sorted paper and cardboard is in SE Asia. Last year that market changed significantly when China banned mixed paper and mixed plastics. In addition, quality standards for the export market for paper and cardboard have increased dramatically. In response to this unprecedented change the MRF staffing levels have increased and throughput speeds have been reduced. This has enabled the MRF to continue to sort and market paper and cardboard. However, it is getting more difficult to produce quality levels comparable to other MRFs in CA which have upgraded their processing equipment.

SBR has successfully applied its operational expertise, resulting in maximizing recovery of marketable materials. By judiciously utilizing equipment and labor, of the total commingled recyclables processed in 2018, SBR achieved an overall total material recovery rate of 83.8%. This recovery rate dropped from prior year, due to SBR adding manual sort labor to remove additional prohibitive materials to ensure movement of recyclable materials were not impeded. In 2019 SBR will continue to work with Recology of San Mateo County and Rethink Waste to further improve recovery rates by reducing the contamination level of inbound commercial and residential commingled recyclable materials.

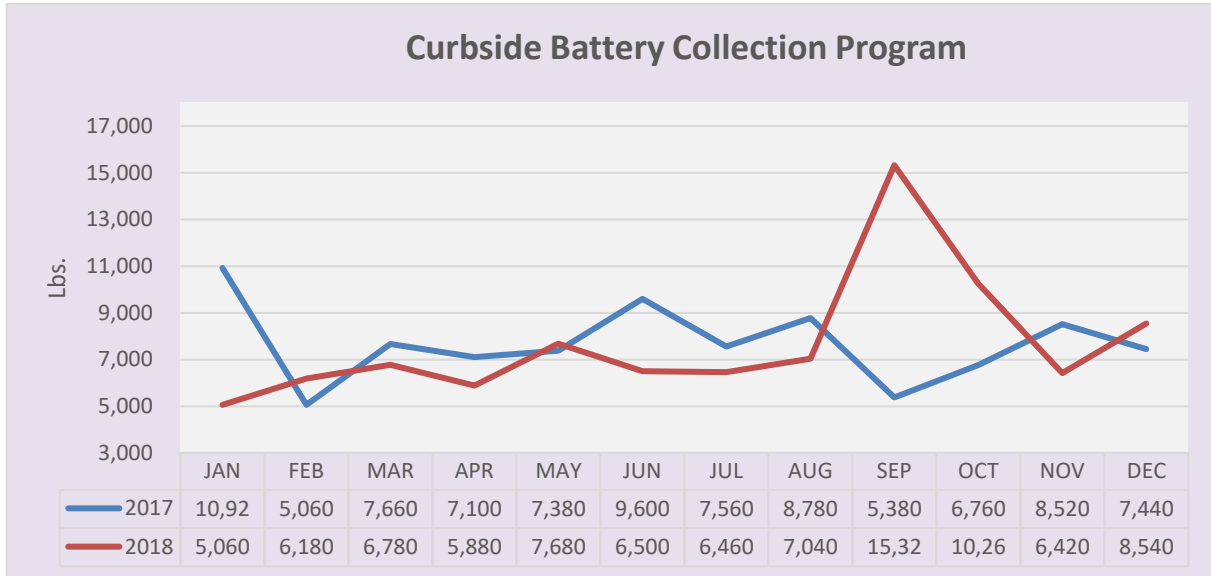
### **Battery Recovery**

On September 7, 2016, the Shoreway Facility Materials Recovery Facility experienced a catastrophic fire, causing a 90-day shutdown of MRF operations. The fire began in a news sorter screen, and while the cause could not be officially determined, it is highly suspected that it was started by a Lithium-Ion battery. Three days later, on September 11, 2016, a fire started in the solid waste pile of the self-haul side of the Transfer Station. This fire started over 6 hours of the Facility being closed. Again, while there an official cause could not be determined, the characteristics of this fire was the deterioration of a Lithium-Ion battery.

Recognizing the dangers of introducing Lithium-Ion and other dangerous batteries into the waste and recycling stream, in 2017, at the direction of the SBWMA, SBR conducted tests to determine the number of batteries, by type, being delivered to the Shoreway MRF from collection routes. Tests were conducted 3-days per week for a

period of 8 weeks. The results provided valuable information, which led to the relaunch of the curbside battery collection program in September-2018. The program relaunch included providing residents with clear orange colored plastic bags to deposit their household batteries. Residents were instructed to place the bag onto their black cart (solid waste) for collection.

The graph below shows the amount of batteries (in lbs.) collected and delivered to the Shoreway Facility for 2017 & 2018.

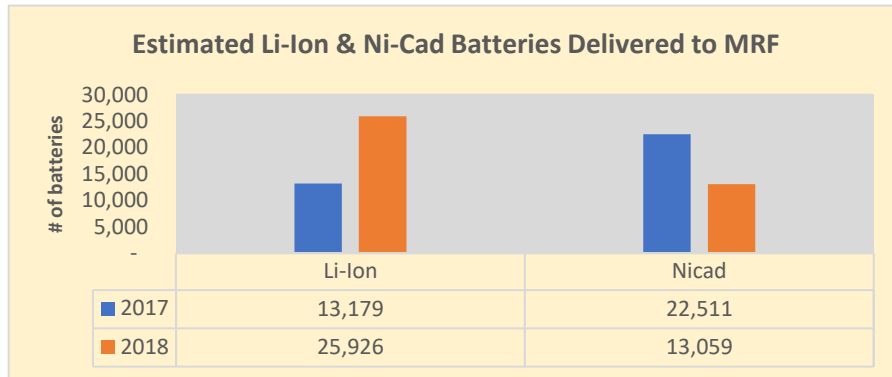


A lithium-ion battery or Li-ion battery is a type of rechargeable battery. Lithium-ion batteries can be a safety hazard since they contain a flammable electrolyte and may become pressurized if they become damaged. There have been battery-related recalls by some companies, including the 2016 Samsung Galaxy Note 7 recall for battery fires. Another problem can occur if a lithium-ion battery is damaged or crushed, or if a battery without overcharge protection is subjected to a higher electrical load than it can safely handle. Additionally, an external short circuit can trigger the batteries to explode.

While some lithium-ion batteries can be easily identified and recovered, most are small and look like AA or AAA size household alkaline batteries, but pose the same danger as any other lithium-ion battery. Smaller Li-I batteries can easily become buried in recyclables and missed by sorters.



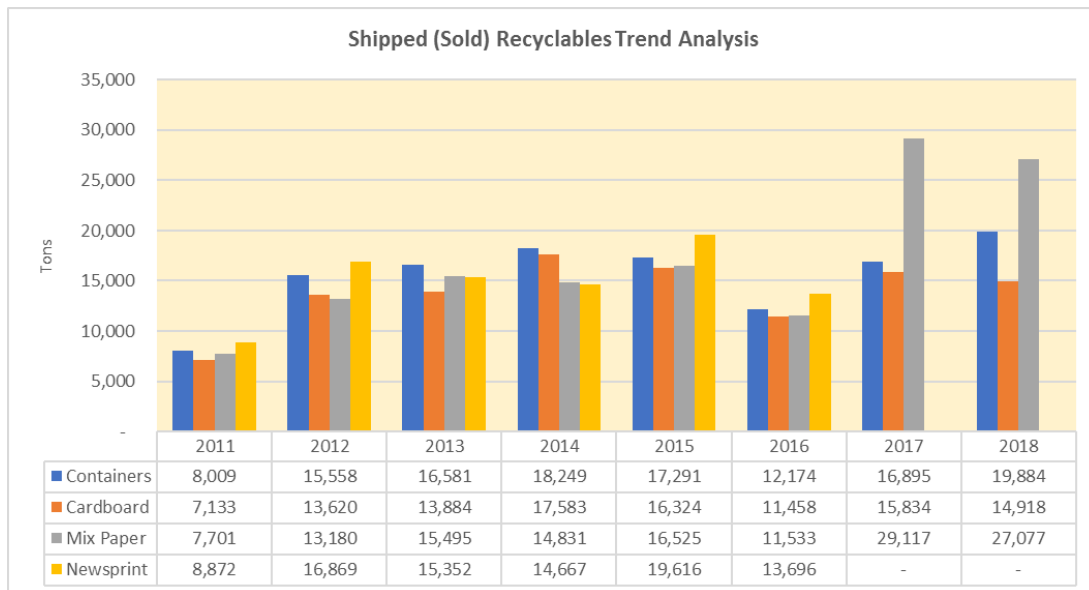
Both Lithium-Ion and NiCad batteries present a clear and present danger in both the Materials Recovery Facility and Transfer Station. The graph below shows the estimated number of Lithium-Ion and NiCad batteries delivered to the Shoreway MRF based on the results of the battery composition tests conducted in 2017, and 2018.



Following the MRF fire, enhanced fire suppression systems were installed in difficult to reach fiber screens, hose reels were added in various areas of the MRF, and existing fire extinguishers were upgraded to foam cartridge discharge units. SBWMA and SBR continue to explore additional enhanced fire suppression systems.

**Outbound Tons**

The Material Recovery Facility (MRF) shipped 61,880 tons of recyclable commodities recovered from processing operations in 2018. The graph below shows number of tons shipped (or sold) of recyclable commodities for each year by major material type.



Note: 2011 represents 9 months (MRF startup occurred on April 4, 2011)  
 2016 represents 9 months (MRF closed Sep-Dec due to MRF Fire)

### **San Mateo County Vocational Rehabilitation Services (VRS)**

The County has several public programs whose purpose is to assist people in attaining their maximum potential within a work environment through counseling, work experience, education and vocational testing. One of the County programs currently being used by South Bay Recycling is the VRS program, which is a unique public/private partnership that strives to enhance people's self-esteem and dignity.

As requested by the SBWMA BOD, South Bay Recycling has contracted with San Mateo County, Vocational Rehabilitation Services (VRS) since the start of operations to provide MRF Sort Laborers (Clients) to perform manual recovery of non-recyclables and staff quality control stations throughout the Materials Recovery Facility during processing operations. VRS Clients are overseen by County provided Production Supervisors assigned to the VRS program. The current labor market makes it increasingly difficult to staff the MRF at the required levels. The growth of inbound commercial commingled materials, combined with the market demand for higher quality sorted paper and cardboard, has created the need for regularly scheduled overtime and occasional weekend MRF operations. As a result, when VRS is unable to provide required staffing levels then outside third-party labor is used for those MRF sort positions which would otherwise be performed by VRS.

## PUBLIC RECYCLING CENTER

The Public Recycling Center (PRC) is open to the public Monday through Saturday from 8:30 a.m. to 4:00 p.m.



### Acceptable Materials

Cardboard	Paint
Mixed Paper	Electronics
Glass Bottles	Fluorescent Tubes
Mixed Containers	Household Batteries
Aluminum Cans	Sharps
Plastic Containers	Pharmaceuticals
Used Motor Oil Filters	Cooking Oil
Used Motor Oil	Small Appliances
Used Antifreeze	

### Inbound Volume

The Public Recycling Center received 1,589 tons of recyclable materials, down 15% from prior year. The table below shows the total inbound tons by material type.

Material Type	Total
CRV Containers	756
Drop-Off Recyclables	833

As customers arrive at the Public Recycling Center, they are greeted by an Attendant who directs them to the appropriate area where they can return their California Redemption Value (CRV) containers for a refund or drop off various types of recyclable materials. Customers may choose from two options to account for their CRV containers to receive the redemption value; 1) material weight, or 2) material count.

### Weighing Containers

Customers may choose to have their CRV eligible containers weighed. The customer is asked to place their containers into a basket provided by South Bay Recycling. The Attendant transfers the containers into a second basket check where they inspect the contents and remove any non-CRV items or dispose of any liquid that may remain in the containers. The basket is placed on a certified scale where the contents are weighed. The

customer receives a receipt which shows the net weight, material type and redemption value. The customer takes their receipt to the cashier for payment.

### **Counting Containers**

Customers may choose to have their containers counted. If requested to count containers, Attendants can count a maximum of fifty containers per customer per visit. The same inspection process is followed as stated above. The Attendant counts each container and provides the customer with a receipt which shows the container count, material type and redemption value. The customer takes their receipt to the cashier for payment.



## EQUIPMENT



### **Transportation Operations**

South Bay Recycling's transportation fleet consists of 23 tractor-trailers to transport materials from the Transfer Station to various sites for disposal or further processing. SBR operates 22 Kenworth T800 and one Peterbilt 357 tractors. Kenworth tractors are powered by 2010 EPA-compliant CAT engines and the Peterbilt tractor is powered by 2014 EPA-compliant Cummings engine, all of which employ emissions control technology to reduce NOx and Particulate Matter.

SBR's trailers were custom designed, engineered and manufactured to minimize weight and maximize payload, resulting in less equipment on the road which reduces traffic congestion, resource consumption and CO2 emissions.

SBR continually assesses its transportation equipment to improve operational performance and efficiency. SBR's trailers are equipped with on-board weigh scales to ensure maximum payloads and improved productivity. Some trailers are specially designed and manufactured to transport specific types of materials. Three trailers have been outfitted with steel floors to transport construction and demolition debris, and two trailers are designed for the efficient movement and offloading of MRF 3 mix glass.

Apart from construction and demolition debris, average payloads exceed the aggressive targets that SBR identified in its bid documents, which many thought unattainable. In 2015, SBWMA's construction and demolition debris processor made significant changes to the types of materials it would accept. This had an impact on SBR's ability to attain payloads it previously enjoyed. These changes reflect material densities accepted by third party processors based on commercial terms between SBWMA and their third-party processor, and not SBR's ability to meet or exceed payload targets.

**Average Payloads by Material Type**

	Q1	Q2	Q3	Q4	2018
<b>Solid Waste</b>					
Tons	52,731	56,001	55,193	56,649	220,574
Loads	2,076	2,222	2,199	2,236	8,733
Avg. Tons/Load	25.40	25.20	25.10	25.33	25.26
<b>Organics</b>					
Tons	28,719	30,896	29,385	31,425	28,719
Loads	1,186	1,268	1,212	1,299	1,186
Avg. Tons/Load	24.22	24.37	24.25	24.19	24.22
<b>C&amp;D</b>					
Tons	11,718	13,768	13,578	11,748	50,814
Loads	583	689	684	586	2,542
Avg. Tons/Load	20.10	19.98	19.85	20.05	19.99

**Other Operating Equipment**

South Bay Recycling currently operates five 2010 Volvo Wheel Loaders, one 2016 Caterpillar Wheel Loader, one diesel powered Man-Lift, one electric powered Scissor Lift, four electric powered Industrial Trucks, and one diesel powered Industrial Truck.

The Linde Forklifts produce zero emissions and have a battery life that allow for a full 12-hour operation before needing to be recharged.

**Equipment Maintenance**

SBR maintains its equipment to include, facilities, stationary equipment, processing equipment, and rolling stock. Some repairs are performed by equipment manufacturers or highly specialized equipment repair shops. Equipment is frequently inspected and analyzed to develop and incorporate processes and procedures that result in sustainable equipment performance.



**Equipment Operated and Maintained by South Bay Recycling:**

<b>Equipment Type</b>	<b>Quantity</b>	<b>Comments</b>
Power Units	23	22-Kenworth T800 1-Peterbilt 357
Trailers	23	10-Tipper Trailers 11-Walking Floor Trailers 2-End Dump Trailers
Other Vehicles	2	1-Autocar Roll-Off 1-Ford F-150 Truck
Wheel Loaders	7	2-Volvo L110 Loaders 3-Volvo L60 Loaders 1-CAT 950M Loader 1-CAT Excavator
Industrial Equipment	7	4-Linde Electric Industrial Trucks 1-Linde Diesel Industrial Truck 1-Telescoping Boom Lift 1-Scissor Lift
Debris Boxes	12	7-50 Yard Debris Boxes 5-20-Yard Debris Boxes
Storage Containers/Bins	50	11 8 cubic yard bins 18 6 cubic yard bins 2 4 cubic yard bins 2 3 cubic yard bins 2 1.5 cubic yard bins 2 3 cubic yard tilt hoppers 4 6 cubic yard tilt hoppers 4 40' sea containers 4 Universal waste containers
Platform Scales	2	70' Inground Certified Scales

## PERSONNEL

Our Greatest Asset is Our People



**SBR Personnel**

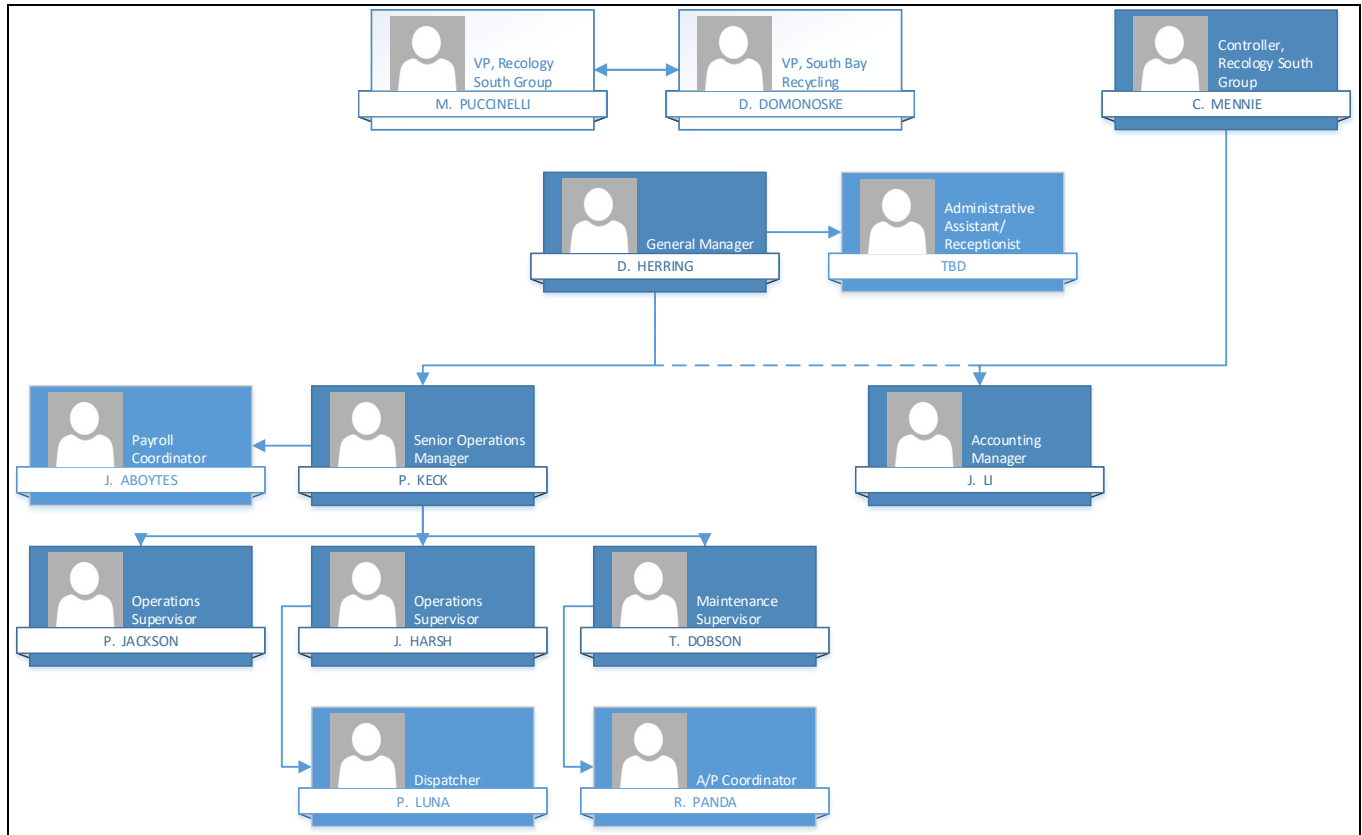
South Bay Recycling employs a total staff of 76 personnel. SBR personnel are made up of the following:

<b>Department</b>	<b>Staff</b>
Management	6
Clerical	4
Class-A Drivers	23
Maintenance	7
MRF Equipment Operators	7
TS Loader Operators	4
Scale Attendants	3
PRC Attendants	3
TS & MRF Floor Operators	19
<b>Total Personnel</b>	<b>76</b>

All hourly employees are represented by Teamsters Local Union No. 350 and are assigned to one of three Collective Bargaining Units, based on their job classification:

- Facility Operations Unit;
- Semi Drivers Unit; or
- Clerical Unit.

**South Bay Recycling Organization Chart**



## SBR MANAGEMENT TEAM



**Dwight Herring**  
General Manager  
650-596-2303  
[dherring@sbrecycling.net](mailto:dherring@sbrecycling.net)

Dwight Herring has been with South Bay Recycling, since February 2011, and has served as General Manager, since November 2011. Mr. Herring has over 30 years' experience in the waste and recycling industry, having served in operations and senior management roles for collection, post-collection and material processing operations in diverse markets throughout the United States.



**Joanna Li**  
Senior Staff Accountant  
650-596-2305  
[JLi@recology.com](mailto:JLi@recology.com)

Joanna Li has served as Senior Staff Accountant for South Bay Recycling since June 2018. Mrs. Li has over 15 years' experience in accounting and finance, and holds a B.S. in International Economic Law, and a M.B.A. in Management and Information Technology.



**Paul Keck**  
Senior Operations Manager  
650-596-2302  
[pkeck@sbrecycling.net](mailto:pkeck@sbrecycling.net)

Paul Keck has been with South Bay Recycling since August 2014, and has served as Senior Operations Manager since December 2016. Mr. Keck has over 40 years' experience in the waste and recycling industry, having served in management roles for post-collection, composting and material processing operations.



**Patrick Jackson**

Transfer Station Operations Supervisor

650-596-2315

[pjackson@sbrecycling.net](mailto:pjackson@sbrecycling.net)

Patrick Jackson has served as Operations Supervisor since April 2018. Prior to joining SBR, Mr. Jackson served as a Field Project Manager for AT&T. Mr. Jackson has over 18 years' experience in operations and project management. Mr. Jackson holds a B.A. in Business Administration, and is a Six Sigma Green Belt.



**Jeffrey Harsh**

MRF Operations Supervisor

650-596-2306

[jharsh@sbrecycling.net](mailto:jharsh@sbrecycling.net)

Jeff Harsh has served as Operations Supervisor since January 2017. Prior to joining SBR, Mr. Harsh served in the United States Navy for 26 years, his last 4 years serving in a leadership role as Command Master Chief. Mr. Harsh holds a B.S. in Occupational Safety & Health, and a M.B.A. in Business Administration.



**Travis Dobson**

Maintenance Supervisor

650-596-2314

[tdobson@sbrecycling.net](mailto:tdobson@sbrecycling.net)

Travis Dobson has served as Maintenance Supervisor since July 2017. Prior to joining SBR, Mr. Dobson served 20 years in the United States Navy, as a Maintenance Supervisor and Operational Chief Supervisor. Mr. Dobson holds a B.S. in Business Administration and Marketing.

## MATERIAL MARKETING SUMMARY



In 2018, South Bay Recycling operated the Materials Recovery Facility equipment, processing and recovering normal grades of recyclable materials as follows:

- Old Corrugated Containers (OCC)
- Mix Paper (MP)
- PET Plastic #1
- Aluminum Cans
- HDPE Color Plastic #2 (HDPE-N)

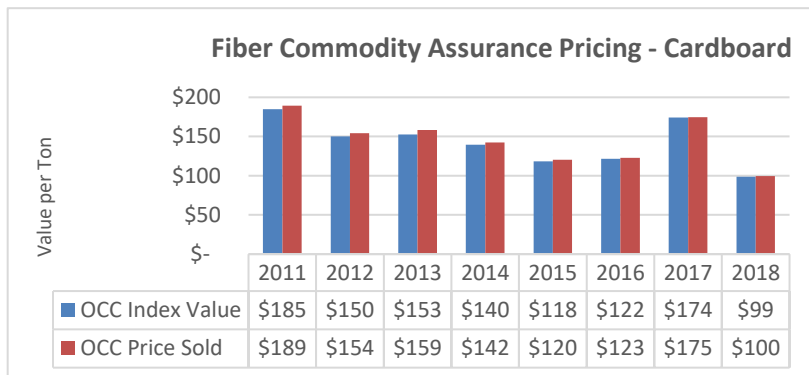
- HDPE Natural Plastic #2 (HDPE-C)
- Mixed Rigid Plastic (MRP)
- Tin Cans
- 3-Mix Glass
- Scrap Metal

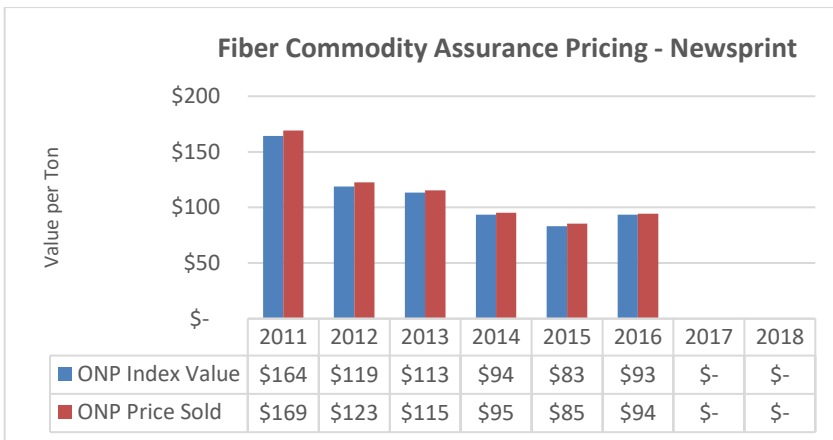
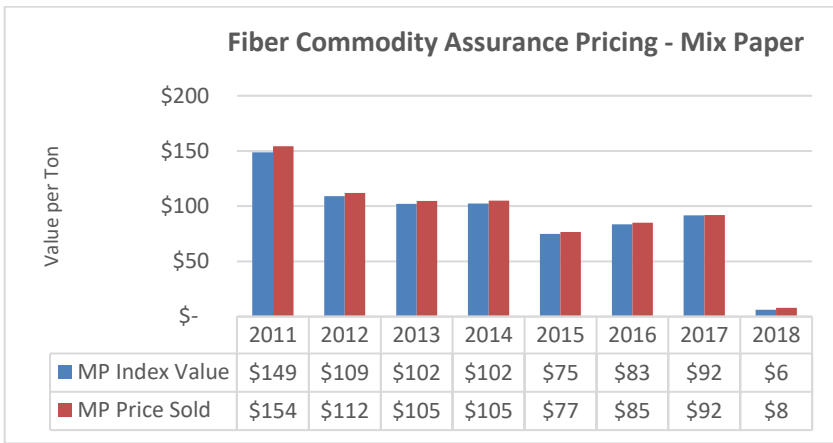
SBR transports both Glass Bottles and MRF 3-Mix Glass to Strategic Materials in Fairfield, California. All other materials are sold freight on board (FOB) San Carlos with the buyer responsible for transportation.

As required under the terms of the Operating Agreement, SBR compiles data, and compares sold fiber against the Fiber Commodity Price Assurance Average Index Value. The chart below provides a calculation showing the Quarterly Index value compared to the average sale price for each grade of fiber from the MRF, the Price Assurance Index, and the Premium per ton for each grade.

### Fiber Commodity Assurance

SBR's expertise in material marketing has provided the SBWMA with a premium value for the recovered fiber. See graphs below.





### Selecting Buyers

SBR only conducts business with established brokerage firms and end users that are in good financial standing, and have a good reputation in the industry. A financial background check is conducted on all potential buyers interested in purchasing processed commodities. Qualified firms who prove to be financially responsible, and have a long-standing reputation to conduct business in an ethical manner, are invited to physically inspect post-processed recyclables to assess material quality. Brokers who are interested in submitting bids to purchase non-fiber commodities are provided the company’s Commodity Sales & Shipment Procedure Policy. Buyers are required to periodically reevaluate non-fiber commodities as changes in material composition can impact quality.

### Material Bidding and Monthly Revenue

Each month, SBR sends a bid cover sheet to all approved brokers. Brokers submit their pricing for each non-fiber commodity they are interested in purchasing. Bids are reviewed and awarded based on best pricing.

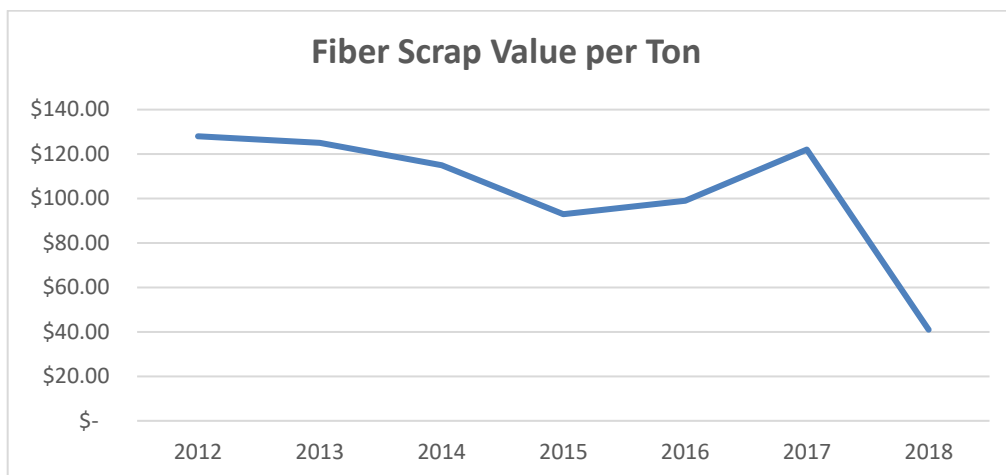
Revenue from commodities consists of two components; scrap value and California Refund Value (CRV). In 2018 the average value of containers sold was 11% scrap value and 89% CRV value.

The CRV value is determined by CalRecycle in Sacramento. The CRV program in California has strong bi-partisan support and is well established throughout the State. Over the past several years the program has seen increases in participation rates which have reduced the amount of unclaimed pre-paid deposits (which CalRecycle uses to pay for program operating costs). As such there are budgetary constraints on several “non-core” aspects of the CRV program, such as grants, market development, and community service programs.

However, most of the revenue that Member Agencies receive for CRV materials consists of the “core” payments for refund, processing, and administrative payments, and these components remain strong and solvent.

The scrap value consists of two primary types of materials, fiber and containers. Fibers include Old Corrugated Containers (OCC), and Mix Paper (MP). Containers include glass, aluminum, plastics and metal. In 2018 the scrap value from fiber (OCC & MP) made up 70% of total scrap value revenue.

The scrap value for fiber plummeted in 2018, and this dramatically reduced the revenue SBWMA received from MRF commodity sales. Most of this was due to lower prices for OCC & MP. Historical fiber scrap value per ton (OCC & MP) are shown in the graph below:



The dramatic plunge in fiber pricing has created significant challenges for all MRFs in California. CalRecycle and other agencies are trying to support the recycling industry, but at this time no practical solutions have been identified. It is unlikely that domestic fiber markets will provide relief. The 2018 change in China’s import rules are not being relaxed, and in fact other countries in SE Asia are imposing higher quality standards for all imported fiber.

In 2018 SBR continued to send fiber to export markets in SE Asia, but not to China because their quality standards (less than 0.5% contamination) are not achievable using normal equipment such as that deployed at the Shoreway facility. The SE Asia export market continues to pay much better prices than the very limited domestic market, which continues to decrease in size with each passing year. It will become increasingly important that the MRF produce sorted paper and cardboard that is comparable to other MRFs that export to SE Asia. As those other MRFs invest in state-of-the-art equipment it is becoming increasingly difficult for the Shoreway MRF to keep pace.

### Fiber Commodity Moisture Monitoring

The moisture testing protocol and test results were submitted to and approved by the Authority in 2011. In 2017 and 2018 the local weather was a bit dryer than normal. In late 2018 that changed with more storms passing through bringing more rain. The presence of excess moisture has a measurable and negative impact on MRF sorting operations, and if material is so wet as to be clumped and wadded then it cannot be mechanically sorted using screens such as those deployed in Shoreway and at every MRF in California. Loose commingled material

that so wet that it cannot be mechanically sorted is not considered to be recyclable, and is unable to be processed in the MRF.

If excessive moisture is present in fiber materials, SBR notifies the SBWMA who will determine the process for this material based on the following information:

- Daily rainfall records in the local area
- Moisture measured in inbound loose material
- Average bale weights for OCC, & Mix Paper
- Moisture measured in sorted/processed material

## OUTLOOK FOR SALE OF RECYCLABLE MATERIALS



There are two components to the value of recyclable commodities; scrap value and CRV value. The scrap value indicates the dollar amount that end users or intermediate processors are willing to pay for a specific commodity. The CRV value indicates the total dollar amount that CalRecycle establishes for beverage containers that are included in the CRV program.

The overall scrap value outlook for 2019 is unfavorable for fiber, and unstable for other grades. Recyclable materials are commodities, and as such they are subject to local, regional, and international forces of supply and demand. For many years the U.S. recycling industry has generated far more recovered materials than there are domestic markets for, and as such the export market has been an important destination for enormous quantities of post-consumer recyclables, particularly fiber and plastic. For the past twenty years export market has been dominated by China, particularly for CA materials with over 80% of export going to China.

In 2018 the Chinese government announced policies designed to support their domestic recycling industry and improve the quality of recovered materials. Two of the most important developments, which are creating a crisis in the fiber and plastics markets today, are: 1) a ban on imported mixed paper and post-consumer plastics, and 2) a requirement that post-consumer recyclables have not more than 0.5% contamination. The problems related to these developments are: (a) there are very few domestic or export markets for plastics, except for #1PET and #2HDPE, (b) there are no domestic markets for mixed paper and the export market for mixed paper is small and fledgling, and (c) the average contamination level for many MRF generated recyclables is typically in the range of 3% - 8% and it is nearly impossible to reduce that level to 0.5%.

Approximately 60% of the recyclable materials recovered in the MRF are fiber: Cardboard (OCC) and Mixed Paper (MP). Demand for all fiber grades dropped in 2018 as both domestic and export paper mills were taking advantage of the crisis caused by China. The paper generated by MRFs in CA is typically sold as Mixed Paper. In early 2018 the value of Mixed Paper has plummeted to nearly zero, and many MRFs in CA have begun sending some of their Mixed Paper to landfills. Fiber pricing is projected to remain weak in the first part of 2019, and there is a great deal of uncertainty regarding where the markets will be in the second half of the year. In the past the average fiber value was over \$100 per ton, but today it is less than \$50 per ton. If markets do not improve the impact to SBWMA will be \$2-\$3 million dollars less revenue from fiber sales. In addition, the agency is at considerable risk to fiber claims and shipment rejections because the MRF equipment, just like all other MRF equipment installed in the US in the last twenty years, is not designed nor capable of producing recovered fiber with less than ½% contamination.

The scrap values for other recyclable commodities are expected to fluctuate in ranges slightly lower than the past years. SBR finds no reason to think that 2019 levels for non-fiber scrap pricing will be materially different than the recent past.

CRV values are subject to funding received by CalRecycle, budgetary actions at the State level, changes to refund & processing payments, and regulatory changes which are sometimes driven by special interest groups. Although CalRecycle no longer reports a “structural deficit”, there is a plan to change the way MRF material is paid CRV payments, and this may slightly reduce the 2019 CRV revenue.

# ENVIRONMENTAL HEALTH & SAFETY COMPLIANCE

## Creating a Culture of Safety

A safety culture exists within an organization when each individual employee, regardless of their position, assumes an active role in error prevention and that role is supported by the organization.

At SBR, we recognize that an ideal safety culture is the ‘engine’ that drives the system towards the goal of sustaining the maximum resistance towards its operational hazards. This goal is achieved irrespective of the organization's leader or current commercial concerns. What drives our safety program is a constant level of respect for anything that may bypass organizational safety systems. In other words, we are constantly looking for what can go wrong. It is very dangerous to think that an organization is safe because no information is saying otherwise. The culture we are creating requires safety management to be aware of the numerous factors that have an impact on the safety systems (i.e. human, technical, organizational, and environmental). SBRs safety culture is reflected and promoted by the following four factors:

- Senior management’s commitment to safety;
- Shared care and concern for hazards and a solicitude for their impacts on people;
- Realistic and flexible norms and rules about hazards; and
- Continual reflection upon practice through monitoring.

## Preventative Measures

SBR makes every effort to ensure it is in full compliance of the General Operating Standards and Services required under the Operating Agreement. SBRs approach is preventative versus reactive. To this regard, management works collaboratively with its employees, the SBWMA and other regulatory agencies to develop and implement preventative measures that will reduce the risk of injury to our employees and the public we serve.

Since the start of operations, SBR and the SBWMA identified the need to install an additional fire suppression systems, including those inside each of the fiber storage bunkers located in the Materials Recovery Facility (MRF). Over the years’ improvements were made to enhance the fire protection capabilities.

To ensure the operation is compliant with Cal-OSHA standards, SBR contacted Cal-OSHA's Consulting Division and requested a post-operating review of the operation and its safe workplace practices program. Prior to startup of MRF operations, a representative of Cal-OSHA conducted a comprehensive inspection of the MRF and Transfer Station operations, and reviewed its safety programs, policies, procedures, and training regimen. As a result, Cal-OSHA identified areas of concern and made recommendations to its established programs. SBR has since corrected all areas of concern and have updated its safety program to include the recommended changes and trained staff and employees on the updated procedures.

## 2018 Accidents/Injuries

Date of Occurrence	Job Classification	Location	Injury
1/30/2018	Dispatcher	Office	Spider Bite
11/13/2018	Sorter	Transfer Station	Strain Lumbar
11/15/2018	Mechanic	Truck Shop	Laceration
12/13/2018	Spotter	Transfer Station	Strain Neck

## 2018 Facility Fire Incidents

Date	Time	Location	Cause
05/08/18	8:50 AM	MRF	Lithium Battery
05/29/18	5:06 PM	MRF	Lithium Battery
06/14/18	1:00 PM	MRF	Lithium Battery
06/22/18	10:49 AM	MRF	Back dragging
06/26/18	12:51 PM	TS	Wood
07/03/18	8:03 AM	MRF	Lithium Battery
07/19/18	9:00 AM	MRF	Lithium Battery
08/15/18	4:48 PM	MRF	Unknown
08/31/18	1:18 PM	MRF	Lithium Battery
09/03/18	5:04 AM	TS	Unknown
09/03/18	8:38 AM	MRF	Lithium Battery
09/25/18	8:10 AM	MRF	Lithium Battery
12/22/18	10:00 AM	MRF	Lithium Battery

Other General Operating Standards and Services in place include, but are not limited to:

### Litter Control

SBR has dedicated employees' who are assigned to collect and properly dispose of any litter or debris that may be on or adjacent to Shoreway Road between Ralston and Holly. These employees are also responsible for collecting and removing any debris found throughout the property at the Shoreway Facility. SBR has contracted with a commercial sweeping company who is required to sweep all areas within the Shoreway Facility and on Shoreway Road between Ralston and Holly twice per day.

### Vector Control

SBR conducts its operations in such a manner as to ensure that conditions are unfavorable for production of rodents, insects and seagulls. To this regard, SBR ensures that all solid waste, organics and construction and demolition debris that enters the Transfer Station is loaded and transported to the disposal site or processing facilities within 48 hours of receipt. SBR contracts with a pest control services company to provide vector control throughout the Shoreway Facility. Bird control measures have been installed throughout the Facility to reduce the presence of seagulls and crows.

### Odor, Dust and Noise Control

Odor, noise and dust are always a concern when operating a Transfer Station, Materials Recovery Facility and Transportation operation. Dust and odor control systems have been installed and are in good working condition at the Transfer Station and Materials Recovery Facility.

### Regulatory Compliance

SBRs management team conducts monthly facility and equipment inspections to ensure the facility and equipment are in good working condition and are compliant with DOT and OSHA regulations, and facility Operating Permits. Any deficiencies or areas of concern are documented and corrected prior to the next inspection. SBR utilizes EEAP (Safety Consultant) to conduct quarterly, comprehensive facility inspections, and reviews their findings with the management team.

On March 7, 2018, CHP conducted a Basic Inspection of Terminals (BIT) of SBRs tractor-trailers and equipment maintenance files, following a complaint filed by a former employee. 50% of SBRs fleet was visually inspected, and equipment maintenance files were reviewed to determine SBRs compliance with state and DOT rules and regulations. SBR was provided a satisfactory rating.

The inspector San Mateo County Local Enforcement Agency (LEA) conducts monthly inspections to ensure the facility is operating in compliance with the Solid Waste Facilities Permit. SBR received no Areas of Concern (AOC) or Notices of Violation (NOV) from the LEA in 2018.

### Employee Training

SBRs management team conducts safety meetings each month with its employees. The training topics are listed below.

- Bloodborne Pathogens
- Confined Space Entry
- Driver Qualification and Inspection
- Emergency Response
- Employee Observation
- Ergonomics
- Fall Protection
- Fire Prevention & Suppression
- Hazard Communication
- Hearing Conservation
- Lock Out/Tag Out
- Personal Protective Equipment
- Seat Belt Use
- Spill Prevention Control & Containment

## FUTURE OPTIONS UNDER CONSIDERATION

SBR is intent on identifying opportunities to expand the diversion efforts at the Shoreway Facility. We are focused on working directly with SBWMA staff and Equipment Manufacturers to identify, and analyze current and emerging technologies that could potentially improve material quality, and recovery of high value commodities with appropriate staffing levels to expand recycling efforts. In 2018, SBR collaborated with SBWMA staff and conducted several tests to identify recyclable materials that could be recovered from solid waste in the Transfer Station. Space constraints continue to be the biggest challenge in the Transfer Station.

SBR continues to participate in the Long-Range Planning process, which includes, evaluating markets that will bring new opportunities to enhance diversion and create the sorted products demanded by the marketplace. There are two key areas that are currently under review: MRF Equipment Upgrades and Mixed Waste Processing:

### MRF Equipment Upgrades

SBR and SBWMA staff have been working on several initiatives.

1. Public Recycling Center (PRC) Retrofit. Removal of landscaping and curb to add a third lane, improving traffic flow, and allow trailer access to the Mix Glass loadout area inside the MRF, improving operational efficiency, safety, and reducing transportation costs.
2. MRF Mix Glass Loadout System. Raise glass auger to allow loading of mix glass directly into a low-side end dump trailer. This eliminates the need to transport this material between buildings and avoids double handling of this material, thereby allowing SBR to direct haul the glass to market This project is made possible due to the PRC Retrofit.
3. Enhanced Glass Cleanup System. This system is designed to remove contaminants, including, shredded paper, batteries, and metals from mix glass, reducing the risk of LI-Battery caused fires, and improving material value.
4. Third-Sort Optical Line. Mechanically scalps recyclable materials that are 4 inches or less, and conveys this material through optical sorters, recovering high value fiber, and CRV containers. Convey paper to the fiber post-sort QC with residue being sent directly to the Transfer Station. Robotic technology will provide accurate measurement of material compositions enabling real-time adjustments to equipment settings.
5. MAX-AI Vision Fiber QC & Scada. Using the latest Artificial Intelligence (AI) technology, this equipment located at the end of each fiber post-sort line, identifies and records the composition of material reporting to the paper bunkers. This information is communicated to SCADA (Software Information System) for further analysis. Robotic technology will provide accurate measurement of material compositions enabling real-time adjustments to equipment settings.
6. MAX-AI AQC for Residue. This AI equipment identifies and records the composition of the residue conveyed to the Transfer Station This information is communicated to SCADA (Software Information System) for further analysis. Robotic technology will provide accurate measurement of material compositions enabling real-time adjustments to equipment settings.

7. Optical Sorting of Paper. Adding six optical sorters (2 each on three paper lines) to recover OCC, produce high value fiber (High Grade Paper), recover CRV containers, and remove film plastic and residual material. By reducing the amount of Mixed Paper, creating a new commodity High Grade Paper (HGP), and increasing the amount of OCC generated there will be a significant increase in SBWMA revenue.

### Mixed Waste Processing

SBR is working with SBWMA and their consultants to identify inbound source separated organics for testing to determine the amount of wet fraction that can be culled from this material for further processing into a renewable energy. The first steps of this development project have been approved by the SBWMA and it will take place in the Transfer Station. SBR continues to take an active supporting role in this important project.

## CIVIC ENGAGEMENT

South Bay Recycling recognizes that our business is unique; touching nearly every resident and business in the communities we serve. Ours is truly a public-private partnership. We also recognize the importance of community involvement, from civic and charitable endeavors to business and government participation.

### Earth Day and America Recycles Day



Each year, SBR participates in Earth Day and America Recycles Day. SBR staff engages with the public, and provides materials and information on the importance of recycling, and what items should be placed in the blue carts. At each event, SBR invites visitors to guess the number of aluminum cans or plastic bottles in a post-processed bale. The person coming closest to guessing, without going over, wins a 21-speed touring bicycle.