



A Public Agency

SBWMA Technical Advisory Committee (TAC) Special Meeting

THURSDAY, October 26, 2017 at 2:00 p.m.

San Carlos Library
Conference Room A
610 Elm Street, San Carlos, CA 94070

AGENDA

1. Roll Call

2. Public Comment

Persons wishing to address the Board on matters NOT on the posted agenda may do so.

Each speaker is limited to two minutes. If there are more than five individuals wishing to speak during public comment, the Chairman will draw five speaker cards from those submitted to speak during this time. The balance of the Public Comment speakers will be called upon at the end of the Board Meeting.

If the item you are speaking on is not listed on the agenda, please be advised that the Board may briefly respond to statements made or questions posed as allowed under The Brown Act (Government Code Section 54954.2). The Board's general policy is to refer items to staff for attention, or have a matter placed on a future Board agenda for a more comprehensive action or report and formal public discussion and input at that time.

3. Executive Director's Report

4. Approval of Consent Calendar:

Consent Calendar item(s) are considered to be routine and will be enacted by one motion. There will be no separate discussion on these items unless members of the Board, staff or public request specific items be removed for separate action. *Items removed from the Consent Calendar will be moved to the end of the agenda for separate discussion.*

A. Approve the September 14, 2017 TAC Meeting Minutes

5. Administrative Items

A. Election of TAC Chair and Vice Chair for 2018

B. Approval of 2018 TAC Meeting Calendar

6. Discussion about Shoreway Fires and Battery Hazard Mitigation Planning

7. Shoreway Diversion Efforts and Related Future Capital Improvement Planning

8. Contractor Program Feedback

A. Recology

B. SBR

9. Future TAC Agenda Items

10. TAC Member Comments

11. Adjourn

MEMBER AGENCIES

ATHERTON * BELMONT * BURLINGAME * EAST PALO ALTO * FOSTER CITY * HILLSBOROUGH * MENLO PARK * REDWOOD CITY
* SAN CARLOS * SAN MATEO * COUNTY OF SAN MATEO * WEST BAY SANITARY DISTRICT



CONSENT CALENDAR



DRAFT MINUTES

SOUTH BAYSIDE WASTE MANAGEMENT AUTHORITY
 MEETING OF THE TECHNICAL ADVISORY COMMITTEE
 September 14, 2017 – 2:00PM.
 San Carlos Library Conference Room A

Call to Order: 2:07PM

1. Roll Call

Agency	Present	Absent	Agency	Present	Absent
Atherton		X	Menlo Park	X	
Belmont	X		Redwood City	X	
Burlingame	X		San Carlos	X	
East Palo Alto	X		San Mateo	X	
Foster City	X		County of San Mateo	X	
Hillsborough	X		West Bay Sanitary District	X	

2. Public Comment

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None

3. Executive Director's Report – Update on Franchise Agreement Extensions

Executive Director La Mariana welcomed new TAC Members Ramana Chinnakotla representing Redwood City, and also Rebecca Lucky who is back after a three year absence representing Menlo Park. He also welcomed Nicole Scott the new Alternate TAC Member representing San Carlos.

Executive Director La Mariana then noted regarding the Franchise Agreement Extensions, that 8 of the 12 Member Agencies are in active discussions and on track to get the Franchise Agreement Extension moved forward. He also noted that there are 3 important discussion items: Bulky Item Collection, Abandoned Waste Collection, and Storm Water still needing negotiation. He added that on legal counsel's recommendation these will be discussed separately and bundled together as the first amendment to the contract extension. It was recommended that these items be more fully vetted, and this approach allows time for additional discussion and then have an amendment in place well before the start of the contract in 2021. He then noted that due to SBWMA staff turnover storm water was not on the radar until late August. He added that the SMCWPP work group put a plan together and there is some language from that plan that should be included in the Franchise Agreements to meet the MRP requirements and Public Works departments should be engaged to estimate costs that need to be

included in the franchise fees.

Member Murray asked if Recology or SBWMA will be doing outreach.

Executive Director La Mariana answered that outreach will likely be part of a 3 year plan, and the plan will be developed every three years, and when the plan is developed, who is doing what will be determined.

Member Daher asked why Recology didn't bring up storm water during the negotiation.

Chair Oskoui explained that there was a disconnect during the negotiations, but Recology is already doing what needs to be done, the language just needs to be added to the contract and figure out the best way forward.

Lillian Clark commented that some of the liter reduction is required before 2021.

Chair Oskoui noted that the TAC needed to give time for the discussions on storm water to take place to see if an amendment is needed in the current contract.

Matt Farby of SMCWPP noted the requirements of the Stormwater Pollution Program. That are to eliminate the impacts of trash on water bodies by 100% by 2022, which requires visual inspections to prove liter improvement on the streets. He also added that to the extent there are costs associated with meeting the requirements it might be easier through the solid waste rate structure than through storm water.

Executive Director La Mariana noted that the Franchise Agreements are 1/3 of the total system costs, and contracts affecting the 2021 total cost will be coming up for renegotiation before 2020, including disposal (Ox Mountain), and 1/2 of the organics tons (Newby Island) which is getting close to being wrapped up. He also noted that there will be a model staff report regarding the Franchise Agreements coming in the next day.

Lillian Clark asked if it included storm water.

Executive Director La Mariana answered no.

Chair Oskoui suggested putting a note in the email about the 3 items that are still being negotiated and will be included as amendments to the Franchise Agreements.

Executive Director La Mariana noted that the October TAC meeting would be moved to October 26, and would be a battery discussion to give feedback to the Board on battery options, as well as a capital budget discussion and feedback on future capital projects. He also added that a new chair and vice chair would be elected. He then noted that one TAC member was looking for Prop 218 vendors other Member Agencies have used.

The list mentioned included: Precision, Accurate, Pin Preset, Precise Mailing, and Calibre Printing.

Executive Director La Mariana noted that the 2018 TAC Calendar would be 4 or 5 meetings. He also noted that there would be an open house to see the SBWMA office remodel before the November Board

Meeting. He then gave a recruitment update noting that two of the four Fellow positions have been filled, with a third offer being made, and interviews for the open Outreach Programs Manager were being scheduled.

Staff Gans explained the Compology pilot program in commercial containers. He showed an example of the camera that would go inside the commercial containers. He noted that the intent of the pilot is to see if the technology is beneficial in monitoring use, right sizing containers, and to understand the power of the system to see if it could have financial benefits to implementing.

4. Approval of Consent Calendar:

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A. Approval the June 8, 2017 TAC Meeting Minutes

Member Cook made a motion to approve
Member Murray seconded the motion
Voice vote: all in favor.

5. Compensation Applications

A. Review the SBWMA Final Report Reviewing the 2018 Recology San Mateo County Compensation Application

Staff Fakira gave a Power Point presentation with the details of the Recology compensation application, and what the steps the SBWMA goes through to analyze the compensation application.

Following the presentation there was Q&A.

Member Chinnakotla asked for further explanation of the 1.3% and 0.4% adjustments, and he commented that the 1.3% doesn't matter to each agency.

Executive Director La Mariana noted that both the total agency adjustment, and each individual Member Agency adjustment percentage matters, he explained how the numbers in line D5 on the Table 8 slide tie to the first page slide in question.

Chair Oskoui suggested adding in another line to show the adjusted rate.

B. Presentation by HF&H Consultants on Future Rate Projections (through 2022)

Executive Director La Mariana introduced Marva Sheehan of HF&H Consultants. He explained that HF&H was contracted with this year for a peer review of the SBWMA's process, and two to do a projection out past 2018, to help the Member Agencies prepare for the increase in the contract extension currently being discussed at each Member Agency. He noted that the work HF&H is doing will help the Member Agencies set up a rate stabilization fund to buy down the jump at the start of the 2021 contract.

Marva Sheehan explained the tool that will help Member Agencies look at rates more completely going forward in the next three years, because the number in table 8 alone can be misleading. HF&H has created a template for each Member Agency, and she showed the City of San Mateo's template as an example.

Executive Director La Mariana added that as future contract costs like disposal and organics start to become known they can be dropped into the template, and the rate requirement for 2021 can start to become clearer.

C. Review of the SBWMA Final Report Reviewing the 2018 South Bay Recycling Compensation Application

Staff Gans noted that the SBR process is similar to what Staff Fakira presented on the Recology side, but the cost of SBR's operation is captured in the tipping fees. For the most part SBRs 3 lines of services, to run the MRF, run the transfer station and transportation of materials is increased based on CPI based increases. He noted that the total increase for 2018 is 1.9% and is fairly predictable.

Executive Director La Mariana thanked everyone for their work on the compensation applications.

6. Long Range Plan Update

A. Staff Update on the Public Spaces Project – Presentation by Kevin Russell, Public Spaces Fellow

Executive Director La Mariana introduced Kevin Russell RethinkWaste Public Spaces Fellow for the summer who worked on the

Staff Russell gave a Power Point presentation on the research he had done over the summer months on his preliminary research findings, indoor and outdoor container options, and considerations for the pilot program.

Member Murray noted that she was concerned about contamination in the recycling containers, and rodents in the organics containers if organics collection was being added to the public spaces containers.

Lillian Clark noted that Recology wants roll out carts versus pull out carts due to worker's compensation issues. She talked about the County carts shown on page 6 of the presentation, and how they have a small opening in the recycle carts for targeted recyclables.

Member Murray talked about San Mateo's carts also pictured on page 6 of the presentation. She noted that the Toter carts fit into the enclosures, and the roofs of the enclosures are slanted to prevent spills on the tops of the containers and they are meant to keep animals out of the carts.

Executive Director La Mariana noted that the SBWMA staff would be working to get consensus represent the Member Agencies in group advocacy, and that containers could be paid for through Doc Grant Funding which includes a section for litter.

Member Daher suggested using Sam Trans throughout the service area for the pilot.

Lillian Clark noted that Recology doesn't service Sam Trans due to it being outside of the Franchise, but she thought it was a good idea to work with them to get uniformity throughout the service area.

Member Lucky suggested getting storm water involved in the pilot.

Member Murray splitting the pilot by jurisdiction type, rather than north and south, where jurisdictions might not be similar.

Chair Oskoui suggested gathering a working group to implement the pilot.

7. Contractor Program Feedback

A. Recology

Mike Kelly Recology General Manager, noted that currently Recology is currently focused on the Extension Agreements, and deliverables on attachment changes.

B. South Bay Recycling

Dwight Herring general manager of SBR noted that there has been a 10% commodity price reduction in fiber, a 65% commodity price reduction in non-fiber. He noted that they expect further drop in commodity prices of fiber during Q4 of 2017, and China is looking to ban plastics 3-7.

Lillian Clark asked if there was a plan if not China.

Executive Director La Mariana answered that he spoke with Dan Domonoske on this subject who is taking a leadership role in these discussion, and that Dan represents a lot of material including ours through Potential Industries, and there is not a very good plan B because there is no other market for the material.

Lillian Clark noted that warehouse space needs to be looked at, and that a letter needs to be written to Cal Recycle to urge them that infrastructure needs to be built so that if the material can't go to China the state can still meet its 75% goal.

Dwight Herring noted that SBR would keep everyone updated as things evolve.

8. Future TAC Agenda Items

Member Lucky asked if some of the things mentioned in the commodities discussion at the state level could be discussed.

Executive Director La Mariana noted that the June TAC meetings going forward would be with the State Cal Recycle to discuss legislation, and issues like commodities and the beverage container grant.

9. TAC Member Comments

Member Lucky noted that Menlo Park approved a Zero Waste Plan, and their public hearing on their 218 notice to increase rates over the next three years will be in November.

Member Tong noted that the County is working on a possible ordinance that will require all ewaste recyclers to be certified with one of two standards, and the idea is to make sure all the ewaste that is being sent is handled in humane and environmentally friendly ways.

10. Adjourn 3:52PM



ADMINISTRATIVE ITEMS

STAFF REPORT

To: SBWMA TAC Members
From: Cyndi Urman, Clerk of the Board
Date: October 26, 2017 TAC Meeting
Subject: Election of TAC Officers for 2018

Recommendation

At the request of the current Chair Afshin Oskoui, who has been serving at TAC chair since 2013, staff recommends the TAC elect new officers for 2018. The TAC Chair has the following roles and responsibilities:

- a. Conduct TAC meetings.
- b. Review and set TAC meeting agendas with the Executive Director.
- c. Occasionally report to the SBWMA Board of Directors on TAC discussions and recommendations

It is also recommended that the TAC elect a Vice Chair who shall act in the absence of the Chair, with full powers of the Chair.

Background

Staff recommends the following process for electing a TAC Chair and Vice Chair for calendar year 2018:

1. Chair calls for nominations for the position of Chair (nominations do not require a second).
2. Motion is adopted to close nominations.
3. Board votes on nominations in the order in which the nominations were made until a Chair is elected.
4. The new Chair takes the gavel and assumes the office and calls for nominations for Vice Chair and the same procedure is followed for electing the Vice Chair.

Fiscal Impact

None.



STAFF REPORT

To: SBWMA TAC Members
From: Cyndi Urman, Board Secretary
Date: October 26, 2017 Technical Advisory Committee
Subject: Approval of 2018 TAC Calendar

Recommendation

It is recommended that the SBWMA Technical Advisory Committee (TAC) approve a 2018 TAC meeting calendar.

Summary

Staff recommends continuing with a 2nd Thursday meeting as there are not any Member Agency governing body meetings on this day of the week. Additionally, the 2nd Thursday of the month also allows time for staff to prepare any feedback from the TAC to the SBWMA Board of Directors before their monthly meeting on the 4th Thursday of the month. New for 2018, staff recommends the TAC meet 4 times per year as outlined in the Executive Director's Assessment and Recommendations of SBWMA Staffing and Operations.

Analysis

In the last two to three years several of the monthly TAC meetings have been cancelled due to lack of Agenda items. To use the TAC resource at its highest and best use, staff recommends this proposed 4 times a year meeting schedule

Background

At the March 23, 2017 SBWMA Board of Directors Meeting, the Board approved the Executive Director's Assessment and Recommendations of SBWMA Staffing and Operations. That report recommended the following annual TAC meeting schedule:

Proposed TAC Annual Schedule		
Month	Primary Meeting Topics	Comments
January	*Annual Legislative/Regulatory Review & Priorities *Contractor Feedback <i>(Recology/SBR)</i>	*Provides recommendations for legislative/regulatory priorities in upcoming year. Upon Board approval, Staff can work nimbly with industry partners on the development of proposed legislation that directly affects our operations, site and industry.
June	*CalRecycle Staff Meeting <i>(Compliance Review/Discussion w/TAC)</i> * Contractor Feedback <i>(Recology/SBR)</i>	*Provides a unique opportunity for MA and agency Staff to directly engage with our primary program regulators on an annual basis. This meeting is strategically scheduled to proceed the August 1 st Annual Program Report (known as the EAR) by the member agencies that is due to CalRecycle

Proposed TAC Annual Schedule		
Month	Primary Meeting Topics	Comments
September	*Contractor's Compensation Application Review * Pub Ed Program/Commercial Program Review * Contractor Feedback <i>(Recology/SBR)</i>	*Provides a first cut MA review of proposed rate reviews--after Staff and rate consultants have reviewed and before SBWMA conduct its final review and consideration.
October	*Shoreway Site Review: Facility Improvements/Capital Projects Review *Agency Scope of Services Review *Contractor Feedback <i>(Recology/SBR)</i>	*Provides a structured annual review of site, operational and agency needs that will precede (by six months) the following year's budget, thus allowing time to investigate and review follow up items identified in this meeting.

Fiscal Impact

There is no fiscal impact associated with scheduling 4 annual TAC Meetings.

Attachments

Attachment A – Proposed 2018 TAC Meeting Dates

SOUTH BAYSIDE WASTE MANAGEMENT AUTHORITY
2018 TAC MEETING SCHEDULE

Meetings of the South Bayside Waste Management Authority Technical Advisory Committee are held on the second Thursday of the following months from 2:00 pm to 4:00 pm

Location: City of San Carlos Library, 2nd Floor, Conference Room A, 610 Elm St., San Carlos, CA 94070

January	11	2018
June	14	2018
September	13	2018
October	11	2018

DRAFT



FIRES AND BATTERY HAZARD MITIGATION PLANNING



STAFF REPORT

To: SBWMA TAC Members
From: Hilary Gans, Sr Operations & Contracts Manager
Date: October 26, 2017 Technical Advisory Committee
Subject: Shoreway Fires and Battery Hazard Mitigation Planning Discussion

Recommendation

The SBWMA staff is requesting input from the TAC about the management of batteries within the service area so that a recommendation can be brought to the SBWMA Board in November.

Summary

There was a large fire at the MRF on September 9th and a fire at the Transfer station two days later on September 12th of 2016. This catastrophic MRF fire caused \$8.5 M in restoration costs and has taken a year to repair the damages. In 2017 year to date, there have been 16 fire incidents - nearly one every other week. Fortunately, these have been extinguished by SBR staff before damage occurred. SBWMA has researched the source of the fires and lithium ion batteries are to blame. With the incidence of lithium ion battery fires at the MRF the agency must act to reduce the risk posed by batteries by eliminating them from entering the MRF in the commercial and residential recycling programs.

Analysis

The curbside battery collection program is likely a vector for lithium ion batteries entering the MRF. The SBWMA needs to determine the best way to handle batteries and whether the curbside collection of batteries should be discontinued or changed.

An updated **Fire Hazard Mitigation Plan** is attached and provides background information about: the fires that occurred in September 2016, the efforts that have been taken by the SBWMA and SBR to “harden” the MRF and transfer station from fire, and stakeholder’s efforts to identify and reduce the presence of batteries in the commercial and residential recycling and waste stream.

Another report, **Lithium Ion Batteries Fire Risk Research Results** will be sent out prior to the TAC meeting. This report is being prepared for the SBWMA by RRS Consulting who is assisting the agency resolve this lithium ion battery fire issue. The author of the report, Michael Timpane will be presenting his research findings at the TAC meeting.

Attachments

Attachment A – Battery Hazard Mitigation Plan – Revised 10.2017



Shoreway Fire Hazard Mitigation Plan

Original - November 2015

Last Revised - February 2017

1. Introduction

The SBWMA Fire Hazard Mitigation Plan (Plan) outlines the roles and responsibilities and efforts of SBWMA, South Bay Recycling (SBR), and, Recology San Mateo County (Recology) regarding eliminating or substantially reducing the fire hazard of batteries, propane bottles and other household and/or commercial ignition source materials delivered to the Shoreway Environmental Center Materials Recovery Facility (MRF) and Transfer Station. The recent fires at the MRF and Transfer Station requires a coordinated and expanded effort by all the stakeholders to mitigate fire risks.

SBR's investigation of previous fires over the past few years identify lithium-ion (LI) batteries as the main source of ignition for most fires in both the residential and commercial recyclables. Because these batteries are present in large quantities in the recyclable materials and are known to be a fire hazard when punctured or shorted, there's an obvious concern over worker safety, property damage, loss of commodity revenue, and other operational impacts associated with fires caused by batteries as well as other ignition sources.

2. Background on Battery Collection

The SBWMA service area first started targeting household batteries for collection in a pilot project in the City of San Carlos in 2007 through the franchised collection services provided by Allied Waste/Republic Services. Based on the success of this program, this new service was rolled out to all Member Agencies in 2008. The practice of curbside collection of household batteries and cell phones continues in the current franchise agreements with Recology. In the current program, residents and businesses are encouraged to place batteries in Ziploc type bags on top of the blue recycling carts (specifically, SBWMA has promoted that residents tape individual batteries prior to placing them in a plastic bag to help reduce potential ignition from battery shorting). The bags of batteries are collected by hand by the Recology drivers, are stored on the collection truck, and are delivered to a special battery collection container at the Shoreway facility.

At Shoreway, the batteries are accumulated and are collected by a special haz-waste vendor for subsequent processing (batteries are sorted by chemistry, taped, and recycled by domestic and overseas companies). Annually, the SBWMA's curbside battery recycling program collected roughly 70,000 pounds (roughly two tractor-trailer loads) of batteries (mostly alkaline). Annually the Agency pays ~\$325,000 to contract vendors for handling/recycle the collected batteries.

3. Battery Collection and Fire Incidents

While the curbside battery collection program has been very successful at capturing batteries (last year the program collected 70,000 lbs of batteries) the program is likely also creating an association in people minds that; 1) batteries are recyclable, 2) that they can be placed in the blue bin. While this hypothesis is very difficult to verify, it is cause for concern and it explains why so many batteries (and battery fires) are at the Shoreway MRF. When compared to other waste handling facilities, the Shoreway MRF seems to be experiencing more fire incidents than other MRFs in the region and nation and staff believes this is attributable to the curbside battery collection program which is unique to the SBWMA collection programs.

All MRFs operators are wary of fires - the presence of large quantities of combustible materials and the constant delivery of waste materials that may contain flammable materials (specifically chemicals, propane canisters, and hot-loads) puts these facilities at constant risk. In 2013, SBR identified an increased number of fire incidents occurring at the Shoreway MRF from lithium ion batteries. The SBWMA staff convened a meeting with SBR and Recology to try to identify the reason for the increase of LI battery fires and to prevent the batteries from entering the MRF and transfer station.

LI batteries pose a serious fire risk if they are punctured or crushed. There have been 50 fire incidents at the Shoreway MRF since 2013 and investigations into the sources of fire incidents identify LI batteries as causing most of the fires (LI batteries have caused 25 [50%] of the fire incidents - see **Footnote 1**. Fire Log).

While most residents and businesses follow the battery collection program guidelines (place batteries in plastic a bag and set them on top of the blue recycling cart), it was discovered by looking closely at the recyclable materials entering the MRF that significant quantities of batteries are discarded “loose” – dumped directly into the recycling and trash containers. Preliminary research conducted by the SBWMA and others indicate that the frequency of LI battery fires is higher at Shoreway than experienced in other MRFs across the nation (**footnote 2**). This seems to indicate that there are more LI batteries entering the Shoreway MRF than at other MRFs. To determine the quantity of batteries erroneously placed in the recyclable materials (blue bin) by residents and businesses, a battery test sort was conducted in 2015 and again in 2017. **Table 1** below shows the battery quantities entering the Shoreway MRF and the subset of the batteries that are lithium ion and pose a serious fire risk.

Table 1. Battery Quantity Entering the MRF - 2017			
<i>Results are from a 2-month test of the Shoreway MRF recyclables</i>			
Battery Type	Count /hr.	Count/Day	Count/Year
Lithium Battery (Single)	4.4	35	9,137
Lithium Battery (Multi-Pack)	1.1	9	2,264
Ni Cad Battery	9.4	75	19,468
Alkaline Battery	310.5	2,484	645,851
Lead-Acid Battery	0.9	7	1,855
Total Batteries	326	2,610	678,574
Total LI Batteries	5	44	11,401
Percent LI Batteries	2%		

4. Shoreway Facility Fire September 2016

There was a catastrophic fire at the MRF on September 9th, 2016 that required over 25 fire engines and 100 fire fighters to extinguish. The fire damaged the MRF sort system and building and required \$8.5 million in restoration costs and shut the MRF for three months (full restoration of the MRF building took a full year to complete). Surveillance video of the MRF provides clear images of the start of the fire in the MRF processing equipment. The location and the character of the ignition indicate that a lithium ion battery was wrapped in the processing equipment and lit paper on fire that subsequently spread throughout the plant. The same week, a fire occurred at the transfer station in a pile of waste. The fire was unrelated to the MRF fire, was smaller, and caused minor damage and was discovered on Sunday evening by the night watchman. The cause of the fire was not determined.

While the SBWMA was fully reimbursed for the \$8.5M by property insurance company (Hanover), the fire incidents have had a long-lasting insurance impact - as a result of the fires, Hanover Insurance dropped coverage of the Shoreway Environmental Center forcing the agency to sign new policies with much higher premiums (property insurance premiums increased approximately \$500,000 per year). Additionally, there is a concern that if there is another fire occurrence, the facility may be deemed "uninsurable" and the SBWMA could be forced to self-insure the facilities.

5. Recent Fire Suppression Enhancements

Immediately following the September 2016 MRF and transfer station fires, SBR/SBWMA hired a team of fire experts to critically evaluate the facility's fire suppression systems and emergency response procedures. Additionally, SBR and the SBWMA met with representatives from Cosco Fire and the Redwood City Fire Marshall to review capabilities of the existing MRF and transfer station fire sprinkler suppression system and other options for enhancing current suppression systems. Both Cosco representatives and the Fire Marshall concluded that the building's existing overhead sprinkler system performed in the manner expected, that SBR personnel correctly followed the emergency plan, and that both were largely successful in containing the spread of the fire. (See **Footnote 3**. For a list of Current Fire Prevention Measures at the Shoreway Site).

The following companies toured the MRF and Transfer Station and reviewed the fire incident history prior to making recommendations; 1) Fire Rover, Inc.; 2) Bolls Fire & Safety, Inc.; 3) Fire Safety Supply; and 4) Cosco Fire Protection). Some of the specific recommendations to come out of the meeting are listed below:

Recommendation	Action Status
Installation of an infra-red (IR) early fire detection system	Contract and Board approval pending with Fire Rover
Installation of a water/foam deluge system at screens	Fire sprinklers added to screens were fire started
Replacement of current fire extinguishers with 10lb. "cartridge" extinguishers.	F-500 fire suppression added to extinguishers
Addition of hose reels placed near mechanical equipment	water drops and hose reels added at 5 locations

6. Stakeholder Responsibilities and Actions

SBWMA

As the owner of the Shoreway Environmental Center, the SBWMA has the lead role in protecting the assets at Shoreway and insuring the structures from catastrophic loss. In this role, SBWMA staff has investigated and implemented fire protection measures to “harden” the facility through enhanced fire suppression. The SBWMA staff has engaged fire experts to assist with investigation of the fires, review the facilities current fire suppression systems and to suggest additional enhancements to the buildings capabilities. Specifically, before and after the fire, the SBWMA has taken the following measure at the MRF and transfer station:

- expanded fire sprinklers into areas of materials storage
- tripled the number of hand-held fire extinguishers
- added water drops and hose reels throughout the facilities
- added special fire suppression carts with F-500 solution to enhance extinguishing capabilities
- included F-500 solution in water-based fire extinguishers
- expanded fire sprinkler coverage into MRF screens (where MRF fire started)
- SBWMA continues to research and implement advanced fire detection and suppression systems where feasible

In addition to the built fire protection, SBWMA and SBR have implemented operational and training measure to make sure that fire risk is minimized and that employees are safe. These “soft” measure include in the list of measure implemented by SBR:

The SBWMA is also charged with developing and disseminating public outreach and education of the collection services provided by Recology. Public education efforts relating to batteries have focused primarily on expanding participation in the curbside battery collection program through newsletters, ads, websites, and social media, however, there has been no information about the dangers that batteries pose.

Action Steps: The SBWMA should develop a battery education outreach campaign to educate customers on how to recycle batteries and about the hazard that “loose” batteries pose:

- *Developing a bill insert targeting residential, multi-family and commercial customers*
- *Incorporating articles in the Rethinker newsletters*
- *Updating the RethinkWaste website*
- *Incorporating information in RethinkWaste media/social sites and e-blasts*
- *Providing content for Recology and Member Agency websites, social media sites and e-blasts*
- *Develop bin labels to inform the public that batteries can't be placed inside.*

South Bay Recycling (SBR)

The Shoreway Operations Agreement requires SBR to handle and process a variety of household materials from residential, commercial and Member Agency customers delivered to the Shoreway Facility by Recology and the public. There are many process and procedures that are in-place to minimize fire risk that include:

- Eliminated the second shift MRF operations – all MRF operations now occur at daytime
- Increased facility cleaning to remove dust and loose material from surfaces
- Ensuring that the MRF equipment is “run clean” of materials at the end of the day
- Keeping stock piles at the MRF and transference station small and away from equipment
- Spotters visually inspect loads as they are being tipped onto the MRF floor for items that pose a fire risk including: batteries, propane bottles, charcoal, chemicals, and other hazardous materials
- Scale Attendants perform random load checks of vehicles entering the Shoreway Facility to ensure only acceptable materials are being delivered for disposal
- Material audits are performed annually to determine the number and types of batteries and other hazardous materials against a baseline established in 2014
- Employees are trained in fire suppression techniques and emergency evacuation procedures (Twice annually training of employees of fire safety and fire response)
- Management investigates all fires to determine cause and reports its findings to the SBWMA
- SBR conducts research to identify fire suppression options and reports these to the SBWMA for further evaluation and study
- 24/7 security patrol service provides facility over-watch and fire-watch during non-operating hours (**footnote 4**) Bay Alarm provides 24 hour live alert response for active fire alarm incidents.

Recology

The collection services agreement with Recology includes the collection of batteries (that are set out on-top-of the blue recycling container) by customers within the Member Agencies. Customers interested in recycling batteries/cell phones in this program are required to package the batteries/cell phones separately for collection by Recology. Recology is also required to keep the batteries/cell phones separate when collected and delivered to Shoreway. Specifically, the participation requirements dictate that batteries/cell phones are placed in a clear zip-type bag and the contacts of all button cell batteries are taped. In addition, the cell phones should also be wrapped separately in paper prior to being placed in the zip-type bag. The bag must then be placed on top of the customers blue recycle cart when the cart is set curbside for collection by single-family dwelling customers or if located in an enclosure for multi-family dwelling customers. While customers are encouraged to adhere to the participation requirements, Recology is obligated to collect the batteries/cell phones even if they are not prepared properly prior to being set out for collection. In addition, Recology is required to provide a separate container upon request to multi-family dwelling customers for the collection of batteries/cell phones and this service is also provided to Member Agency facilities.

Action Steps: Recology's efforts to assist in mitigating battery caused fires at the MRF should include taking the following actions:

- *Review issue and proper battery collection procedures with drivers at their “Hot Topic Tuesday” meetings*
- *Review issue and proper battery collection procedures with drivers and other employees at monthly safety meetings*

- *Provide assistance in educating commercial customers through their commercial recycling sales representatives when they contact customers*
- *Work in collaboration with SBR to identify where, which route and possible business a load may have come from in the event of a fire*
- *Assist SBWMA in developing public education and outreach materials/messages to address the issue*

Footnote #1 (Page 1)

Attachment 1								
SBR Fire Incident Summary		LOCATION			TYPE			
DATE	CAUSE	# TS FIRES	# MRF FIRES	# OTHER	BATTERY	GAS CYLINDER	OTHER	UNK
4/13/2013	Chemicals		1				1	
5/1/2013	Loader		1				1	
6/10/2013	Unknown			1				1
7/6/2013	Unknown			1				1
7/29/2013	Batteries		1		1			
8/5/2013	Batteries		1		1			
11/6/2013	Unknown	1						1
3/11/2014	Wood / Metal		1				1	
4/16/2014	Wood / Metal		1				1	
4/22/2014	Batteries		1		1			
4/22/2014	Batteries		1		1			
5/20/2014	Batteries		1		1			
6/18/2014	Batteries		1		1			
7/1/2014	Batteries		1		1			
9/11/2014	Metal / Wood		1				1	
9/11/2014	Charcoal		1				1	
3/24/2015	Batteries		1		1			
6/17/2015	Batteries		1		1			
6/24/2015	Batteries		1		1			
6/29/2015	Batteries	1			1			
7/13/2015	Propane Tank		1			1		
7/29/2015	Fry pan		1				1	
8/27/2015	Screen wrap		1				1	
9/21/2015	Unknown		1					1
9/23/2015	Unknown		1					1
11/16/2015	Batteries		1		1			
11/18/2015	Batteries		1		1			
2/8/2016	Hot Load		1				1	
3/30/2016	Propane Tank		1			1		
4/14/2016	Batteries		1		1			
7/7/2016	Propane Tank		1			1		
8/8/2016	Propane Tank		1			1		
9/7/2016	Batteries		1		1			
9/11/2016	Self Heating	1					1	
2/8/2017	Unknown		1					1
3/1/2017	Batteries		1		1			
3/16/2017	Batteries	1			1			
4/27/2017	Unknown		1					1
6/6/2017	Batteries	1			1			
7/3/2017	Batteries		1		1			
7/18/2017	Strike Match Box	1					1	
7/28/2017	Batteries		1		1			
7/31/2017	Batteries		1		1			
8/2/2017	Batteries		1		1			
8/2/2017	Batteries		1		1			1
8/25/2017	Unknown		1					
9/8/2017	Propane Tank		1			1		
9/11/2017	Batteries		1		1			
9/25/2017	Batteries		1		1			
9/29/2017	Unknown		1					1
	Totals	6	42	2	25	5	11	9
		12%	84%	4%	50%	10%	22%	18%
TOTAL FIRE INCIDENTS								50

Footnote 2 (Page 1) – Research into fires at MRFs shows that there is little printed information on this problem and other MRFs and industry contacts do not identify batteries as a significant fire risk at other MRFs. In order to better understand the frequency and causes of MRF/TS fires along with measures taken to prevent and extinguish them, SBR reached out and communicated with the following companies: Rumpke Waste and Recycling, OH; Republic Services, TX; CR&R Environmental Services, CA; TFC (Tidewater) Recycling, VA; Metropolitan Paper Recycling, NY; Recology, CA; Potential Industries, CA; Burrtec Waste Industries, CA; Waste Management, CA; Swordfish Consulting, CO; Friedman Recycling, AZ; Bulk Handling Systems, OR; Van Dyke Recycling Solutions, CA; CP Manufacturing, CA; Machinex, Canada; and Spragg Industries, CA, BHS, Or.

In 2017, SBWMA hired RRS consulting to research the issue of MRF fires and the connection of Lithium Ion batteries as the potential cause of MRF Fires. This Report provides strong evidence of the link and that the fire risk posed by these batteries is increasing each year as the batteries proliferate and their power-storage increases.

Footnote 3 (Page 3) - Current Fire Prevention Measures at the Shoreway Site

There are many layers of fire suppression installed at the Shoreway MRF and transfer station buildings. These elements include 1) building elements required by fire code, 2) added elements that have been installed by the SBWMA as supplemental fire suppression, 3) employee fire training and employee fire safety elements, 4) facility operations best-practices.

Materials Recovery Facility

- A foam-assisted fire sprinkler system covers the entire 70,000 square feet of the building interior.
- A foam-assisted overhead fire sprinkler system is located in each fiber storage bunker.
- There are nine (9) 100' 1" hose reels mounted throughout the facility that can be used to support fire suppression efforts. These reels are strategically placed to access processing equipment that are subject to high fire risk (e.g., balers, mechanical screens, & storage bunkers).
- There are 65 cartridge fire extinguishers mounted throughout the facility. This equipment is inspected monthly to ensure they are fully charged, operable and maintain their certifications.
- There are two (2) F-500 foam assisted fire suppression systems located in the facility; one, at the entrance to the tipping area and the second on the platform above the commercial and residential conveyance bins.
- 8-additional fire sprinklers have been added to the Fiber Screens – the location where the 2016 MRF fire started.
- Employees and VRS personnel are provided theoretical and practical training twice per year in Fire Prevention and Suppression and Emergency Response Procedures.
- Air horns are located throughout the facility and employees and VRS personnel have been trained in their use to alert all personnel in the event of an emergency that requires evacuation of the plant
- All fiber and container bunkers, belts and balers are emptied and free of any materials at the end of each and every processing shift.
- Loose residential and commercial recyclables are kept to a minimum.
- Loose recyclables are stored away from stationery equipment.

- All three (3) residue pits are cleaned out once per week.
- Debris is removed from beneath the conveyor belts of the residential and commercial conveyance systems twice per month.

Transfer Station

- A foam assisted fire sprinkler system covers the entire 70,000 square feet of the building interior.
- There are nine (9) 100' 1" hose reels mounted throughout the Transfer Station that can be used to support fire suppression efforts. These reels are strategically placed to access stored materials (C&D, Organics and Solid Waste) and equipment (Wheel Loaders, Forklifts, etc.) that are subject to high fire risk.
- There are fifteen (15) cartridge fire extinguishers mounted throughout the Transfer Station and Loading Tunnel. This equipment is inspected monthly to ensure they are fully charged, operable and maintain their certifications.
- There are three (3) F-500 foam assisted fire suppression systems. One is located in the public side of the Transfer Station, and two are located on the member agency side of the Transfer Station.
- Employees are provided theoretical and practical training twice per year in Fire Prevention and Suppression and Emergency Response Procedures.
- Air horns are located throughout the facility and employees and VRS personnel have been trained in their use to alert all personnel in the event of an emergency that requires evacuation of the plant.
- Loose materials are kept to a minimum and stored away from walls and equipment.

Footnote 4 (Page 4) - Security Patrol Service

Onsite security provides facility over-watch and fire-watch during non-operating hours. Bay Alarm provides 24-hour live-alert response for active fire alarm incidents. Since SBR started operations at the Shoreway Facility, it has contracted with a third-party Security company to provide facility over-watch and fire-watch during non-operating hours. The security company utilizes state-of-the art technology to report any incidents and to log the security officer's locations throughout their shift. SBR has the ability to contact the security officer on-site directly. The Security Company provides reports to SBR on a daily basis. It was the Security Officer on patrol late in the evening of Sunday, September 11, 2016 who noticed smoke coming from the public side of the Transfer Station and notified the Fire Department and SBR Management.

Shoreway Hours of Operation

The MRF is staffed Monday through Friday from 7:00 a.m. to 11:45 p.m. and closed on Saturday and Sunday (Processing Shift 7:00 a.m. to 3:30 p.m., Maintenance Shift: 3:15 p.m. to 11:45 p.m.).

Security Company - Patrol Services Hours	
Monday-Thursday	6:00pm - 6:00am
Friday	6:00pm - 8:00am
Saturday	5:00pm - 8:00am
Sunday	5:00pm - 6:00am



DIVERSION EFFORTS AND FUTURE CAPITAL IMPROVEMENT PLANNING

Agenda Item 7

**Shoreway Diversion Efforts and Related Future Capital Improvement
Planning**

No Staff Report discussion item only at the October 26, 2017 TAC Meeting