



IT'S ALL ABOUT REDUCING OUR



WASTE SIZE



## WE'RE SLIMMING DOWN ON SOLID WASTE AND TONING UP FOR AN ENVIRONMENTALLY SOUND FUTURE



Puente Hills MRF

Think of the Puente Hills Materials Recovery Facility (MRF) as a personal trainer for the environment, with an end goal to keep it healthy and in great shape. Its mission? To optimize the recycling process that turns solid waste into useful, everyday products.

The MRF is an innovative and environmentally-sophisticated recycle and recovery operation. It is owned and operated by the Sanitation Districts of Los Angeles County, an agency that serves the solid waste needs of the region while protecting the health and safety of surrounding communities.

The MRF is permitted to receive an average of 4,000 tons per day. This state-of-the-art facility achieves its nice tight waste-line through a combination of manual and mechanical methods. Employees do the hand sorting of recyclables, while machines do the heavy lifting and daily crunches required to bundle the recovered materials.

After the recyclables are removed, the waste is hauled by truck to a variety of cost-effective management options such as regional landfills, land reclamation sites, and waste-to-energy facilities. The utilization of multiple destinations allows for flexibility, keeping costs lower for our customers. In the future, the MRF will become the starting line for the waste-by-rail program, whereby waste puts on its training shoes and goes the distance, getting transferred by rail to the finish line – the new Mesquite Regional Landfill in Imperial County, approximately 200 miles southeast of Los Angeles. This remote landfill will be able to accept 20,000 tons per day with a lifespan of 100 years. That's a healthy life expectancy!



Puente Hills  
MRF Office

## THE MRF IS CRITICAL FOR MEETING WASTE REDUCTION GOALS

In 1989, AB 939 was passed, calling for cities and counties to divert 50 percent of their waste away from landfills by January 2000. Recent legislation has increased diversion goals significantly. In 2011, AB 341 established a new statewide goal where 75 percent of the waste would be recycled by 2020. Bills such as AB 1826, AB 1594 and SB 1383 have focused on the organic fraction of the waste, like food waste and grass clippings. SB 1383 requires a 75 percent reduction in organics disposal at landfills by 2025. The MRF will be instrumental in helping cities reach these goals. Open to the public six days per week, the MRF serves a wide range of customers, from large hauling companies with established routes to small business operators and homeowners. The MRF is also set up to receive source-separated food waste for recycling purposes.

Puente Hills MRF with Puente Hills Landfill in the Background



# PUENTE HILLS MATERIALS RECOVERY FACILITY

## It's the "Pick of the Litter" When It Comes to Turning Solid Waste Into Solid Resources

Because most cities already have effective household recycling programs, whereby recyclables are separated from waste at the source, the Puente Hills MRF was designed to focus on non-residential, commercial waste that is not presorted.

### GETTING THE JOB DONE

The process begins when refuse trucks drive to the scale house to be weighed. The MRF then uses a combination of mechanical and manual means to remove recyclables from the refuse. Sorters manually remove recyclable items such as wood, plastic containers, cardboard, carpet, and metal from the waste piles on the sorting floor. The remaining materials and refuse loads that have a higher content of recyclable material are placed on a conveyor belt for separation by the processing equipment and belt sorter employees. When loads of presorted materials are delivered to the site, they can go directly to the baler with very little handling. These recyclable loads, as well as green waste loads, qualify for discounted disposal rates. The result is a slimmer, trimmer waste stream going to its final destination.



### ON THE SORTING FLOOR...

**1. SCALE HOUSE**  
Incoming waste is weighed and scanned before entering the MRF.

**2. SORTING FLOOR**  
Waste processing begins here. Heavy equipment and floor sorting staff remove recyclables from the refuse.

**3. HANDLING LARGE BULKY ITEMS**  
Loaders, material handlers, and excavators are used to remove large and bulky items.

**4. WOOD, TEXTILES, AND CARPET/PADDING SEPARATION**  
Wood and textiles are separated and sent to an off-site facility for conversion to electricity. Carpet and padding are removed and recycled into new carpet padding.

**5. FLOOR SORTERS**  
Floor sorters work to remove large recyclables from loads. These include metals, cardboard, and plastics.



## DID YOU KNOW ?

- Every aluminum can recycled saves enough energy to run a television for three hours, which equals 95 percent of the energy used to make the can from scratch.
- Recycling one ton of paper saves 17 trees, 7,000 gallons of water, three cubic yards of landfill space, two barrels of oil, and enough electricity to power the average home for five months.
- Glass never wears out – it can be recycled over and over. Recycling one glass bottle saves enough energy to run a 100-watt light bulb for four hours.

## ON THE BELT SORT LINE...

### 6. BELT SORTERS

The remaining waste is moved to belt sorters where beverage containers and paper are collected, or contaminants are removed to produce clean materials at the end of the line.

### 7. CARDBOARD AND PLASTICS

Cardboard and clear and colored film plastics are recovered. Rigid plastics are also removed from the waste.

### 8. BALE AND LOAD CONTAINERS

Cardboard and plastics are baled. The bales are loaded into shipping containers and ultimately recycled into new products.

### 9. TRUCK OUT-LOADING

Residual waste is trucked from the MRF to a landfill or other management facilities.

## TIGHTENING THE WASTE STREAM WITH THE BELT SORTING PROCESS





# BUILDING ON THE POWER OF GREEN DESIGN

## GREEN FROM THE GROUND UP

Everywhere you look at the MRF, you'll see "green," beginning with the raw materials used in construction. Recycled materials were used throughout the project from structural and reinforcing steel to restroom partitions, carpeting, insulation, ceiling and floor tiles, and plastic wheel stops in the parking lot. Recycled water is used for irrigation and toilets throughout the MRF, and the building uses green power generated from landfill gas. Environmentally friendly design features include high-efficiency air conditioning systems and lighting, over 500 skylights, and occupancy sensors for lighting to minimize electricity use. Going green... it's a powerful way to build when you consider the reduced energy needs and major cost efficiencies that are achieved.

## A CONTROLLING INTEREST

Happily, the expert design team addressed several control issues when they went to work on the MRF, including:

### DUST AND LITTER CONTROL

High-tech design and operations minimize the creation, emission, and accumulation of dust and litter. Control measures include a water misting system inside the facility to remove dust and particulates from the air, a wall separating the floor area from the equipment room to reduce dust migration, frequent sweeping of access roads and parking lots, and the requirement that all incoming customer loads be covered.



Puente Hills MRF  
Green by Design



Numerous Skylights at the MRF Save Energy



Odor Mitigation





Refueling an  
LNG Vehicle

## ODOR CONTROL

Entrance and exit doors at the MRF are built at right angles to contain odors and prevent a “wind tunnel” effect. The load-out area where residual waste is loaded into trailers is located at the back of the building, the furthest distance away from any neighbors. All incoming truckloads are processed only in the enclosed building after entering through high-speed open/close doors. Excessively odorous loads are not accepted at the facility, and potentially odorous air is exhausted as far away from adjacent properties as possible. Air is drawn in from the front of the building and exhausted through roof fans on the back of the building. These fans are ringed with stainless steel tubing with nozzles to distribute odor-neutralizing mist into the exhaust air.

## AIR POLLUTION CONTROL

In keeping with the environmentally-friendly design of the MRF, diesel-fuel operated wheel loaders and material handlers with the latest emission reduction devices were selected. The forklifts used for commodity handling are electric powered with zero emissions. Propane is used to operate some of the smaller support equipment such as sweepers and man-lifts. Staff members, including mechanics, gardeners, and supervisors, use electric carts as their everyday mode of transportation in and around the facility.

## WATER POLLUTION CONTROL

Education, monitoring, and training play major roles in protecting water quality and ensuring storm water compliance at the MRF. Best management practices include roof downspout filters, catch basin filters, street sweeping, and routine vehicle and equipment maintenance.

## Scale House Screens for Unacceptable Waste



Random Load Check

### **KEEPING CONTROLS ON HAZARDOUS WASTE**

Hazardous wastes are prohibited at the MRF. The Sanitation Districts continuously monitor the unloading and processing areas of the MRF for the presence of unacceptable e-waste and hazardous, toxic, or infectious wastes. Detectors located at the inbound weigh scales screen every load of incoming waste for radioactivity. All loads are visually scanned during the floor sorting process and randomly selected loads are searched thoroughly. If unacceptable wastes are found, they are transferred to appropriate off-site disposal facilities. Haulers who deliver unacceptable waste are charged for the cost of properly disposing of the waste and may face suspension or loss of disposal privileges. This program acts as a strong deterrent to illegal disposal of unacceptable wastes.



## **ALTERNATIVE FUELING STATION**

The Puente Hills MRF is home to a liquefied natural gas (LNG) and compressed natural gas (CNG) fueling station. This facility was built to fuel vehicles and other equipment that operate on LNG and CNG. Natural gas benefits the environment because it is a cleaner burning fuel than gasoline or diesel. The station is open to the public and serves the Sanitation Districts' fleet as well as the fleets of several refuse collection companies. Natural gas also saves money since it is less expensive than regular gasoline.



## **WASTE NOT, WANT NOT**

### **Converting Food Waste to Energy**

New state laws and regulations require increasing levels of diversion of food waste from landfills, and the Sanitation Districts are ramping up our food waste recycling program to help meet state goals. The Sanitation Districts are currently receiving food waste slurry at our Joint Water Pollution Control Plant (JWPCP) in Carson, where it is mixed with sewage sludge and digested to create methane gas and biosolids. The methane is used to create electricity, and the biosolids are used for compost or soil amendments.

The Sanitation Districts are planning and building additional infrastructure that will allow us to receive and process up to 165 tons per day of food waste at the Puente Hills MRF, to digest up to 500 tons per day of food waste at JWPCP, and to produce natural gas for vehicle fueling from the additional methane generated by digesting food waste.



## PUENTE HILLS CERTIFIED BUYBACK RECYCLE CENTER

### Flexing Its Muscle to Help the Community

Area residents use the recycle center located at the Puente Hills MRF to recycle glass, cardboard, paper, aluminum, and all types of plastic. This center accepts free drop-off of e-waste as well, so there is no need to wait for e-waste collection events.

Getting cash back for your recyclables, eliminating clutter around your home, and knowing that you're helping reduce the flow of solid waste into the landfill are great incentives for taking advantage of this valuable service.

To get to the center, use one of the two entrances: the Puente Hills Landfill entrance at 13130 Crossroads Parkway South, off the Pomona (SR 60) Freeway, or the gate at the MRF building at 2808 Workman Mill Road (push the call button if gate is closed), both located in Whittier, CA. For more information and hours of operation call **(562) 908-4875**.



# TRASH DOESN'T JUST HAPPEN! IT'S EVERYONE'S RESPONSIBILITY TO REDUCE, REUSE, AND RECYCLE

- Buy in bulk and buy concentrated cleaners and detergents to reduce packaging waste.
- Reuse left over materials. For example, if you buy coffee in bulk, store it in empty coffee cans.
- Recycle everything that can be recycled, such as cans, bottles, paper, and yard waste.
- Whenever possible, purchase recycled, recyclable, or reusable products.
- Ask manufacturers to reduce the amount of packaging for their products.
- Donate unwanted clothes, toys, furniture, and other household goods to a charitable organization.
- Be a leader. Kids and adults alike can help educate others about how important it is to Reduce, Reuse, and Recycle.

## RESOURCES

The Sanitation Districts of Los Angeles County have created world-class models for environmentally sound and cost-effective solutions to waste disposal and recycling. To learn more, we encourage you and your school or organization to visit our waste management and recycling facilities and take a tour. You may also request a brochure or visit our website. Many important programs and services are just a click away at [www.lacsd.org](http://www.lacsd.org).

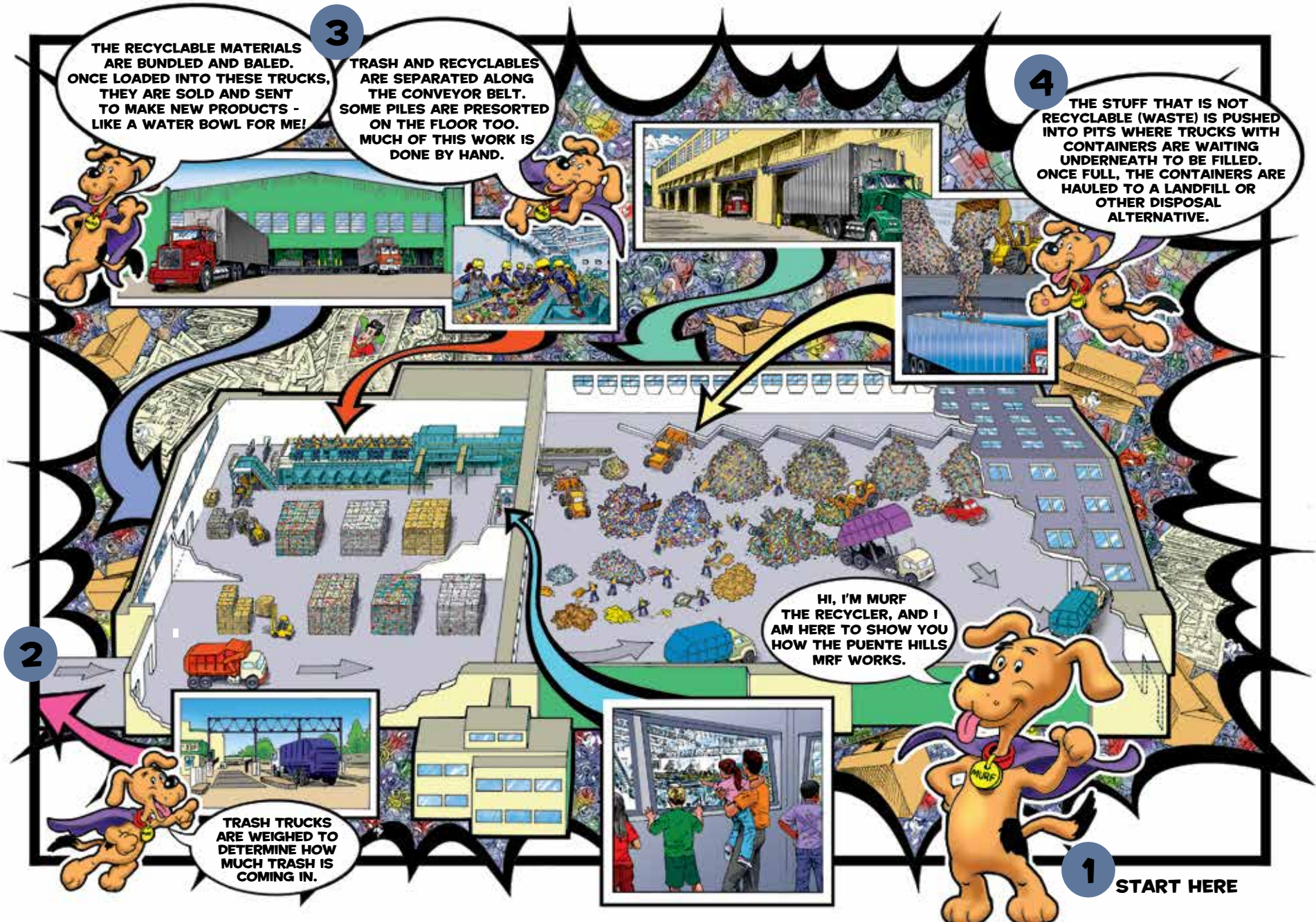
Whether you're an individual, a business, or a community leader, it's important that we all take on our fair share of the responsibility in conserving our resources and reducing solid waste disposal by Reducing, Reusing, and Recycling.



[www.lacsd.org](http://www.lacsd.org)

Check out the following websites for other “green” resources, services, and tips that can help keep Planet Earth “in the pink.”

- [www.888CleanLA.com](http://www.888CleanLA.com)
- [www.earth911.org](http://www.earth911.org)
- [www.epa.gov](http://www.epa.gov)
- [www.calrecycle.ca.gov](http://www.calrecycle.ca.gov)



3 THE RECYCLABLE MATERIALS ARE BUNDLED AND BALED. ONCE LOADED INTO THESE TRUCKS, THEY ARE SOLD AND SENT TO MAKE NEW PRODUCTS - LIKE A WATER BOWL FOR ME!

3 TRASH AND RECYCLABLES ARE SEPARATED ALONG THE CONVEYOR BELT. SOME PILES ARE PRESORTED ON THE FLOOR TOO. MUCH OF THIS WORK IS DONE BY HAND.

4 THE STUFF THAT IS NOT RECYCLABLE (WASTE) IS PUSHED INTO PITS WHERE TRUCKS WITH CONTAINERS ARE WAITING UNDERNEATH TO BE FILLED. ONCE FULL, THE CONTAINERS ARE HAULED TO A LANDFILL OR OTHER DISPOSAL ALTERNATIVE.

HI, I'M MURF THE RECYCLER, AND I AM HERE TO SHOW YOU HOW THE PUENTE HILLS MRF WORKS.

2 TRASH TRUCKS ARE WEIGHED TO DETERMINE HOW MUCH TRASH IS COMING IN.

1 START HERE





1955 Workman Mill Road, Whittier CA 90601 • (562) 699-7411 • [www.lacsd.org](http://www.lacsd.org)