UCLA Zero Waste Plan

RETHINK RECYCLE
SUSTAIN.UCLA.EDU

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1 EXECUTIVE SUMMARY

Background

The University of California Sustainable Practices Policy, developed by the ten UC campuses, sets the ambitious target of Zero Waste by 2020, with an interim target of 75% waste diversion by 2012. UCLA has a decades-long history of pursuing sustainable practices in campuswide operations and has established extensive academic, research, and community outreach programs in climate change and sustainability. UCLA successfully met the 2012 target, achieving 75% waste diversion.

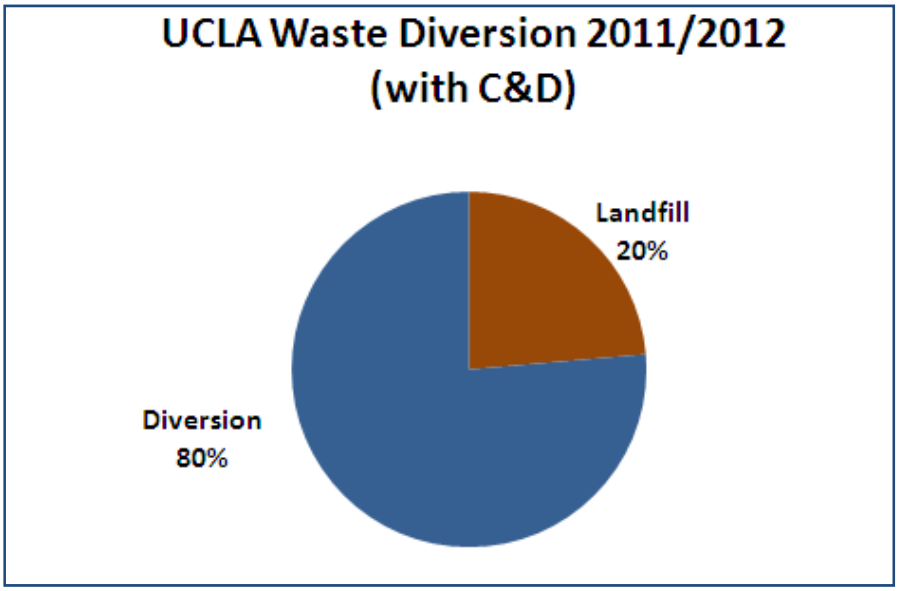
Pursuant to the Policy, UCLA has developed this Zero Waste Plan, to begin to map out how to reduce our waste and get to zero waste to landfill, or 95% or higher diversion by 2020. This plan is intended to be a living document. It will provide an overall road map, and begin to identify the initiatives and additional analysis we need to get there.

This plan is authored and will be implemented by the Recycling and Waste Taskforce, a taskforce of the UCLA Sustainability Committee. Members of the taskforce are key staff from across the university, as well as students and faculty.

Achieving 75% Waste Diversion by 2012

UCLA successfully achieved greater than 75% waste diversion by 2012. See Figure 1-1. This was a monumental effort that required participation from all across campus. This Zero Waste Plan begins with highlights of our current initiatives in source reduction, reuse, recycling, composting, and other diversion efforts.

Figure 1-1: UCLA Waste Diversion 2011/2012 (Including Construction and Demolition)



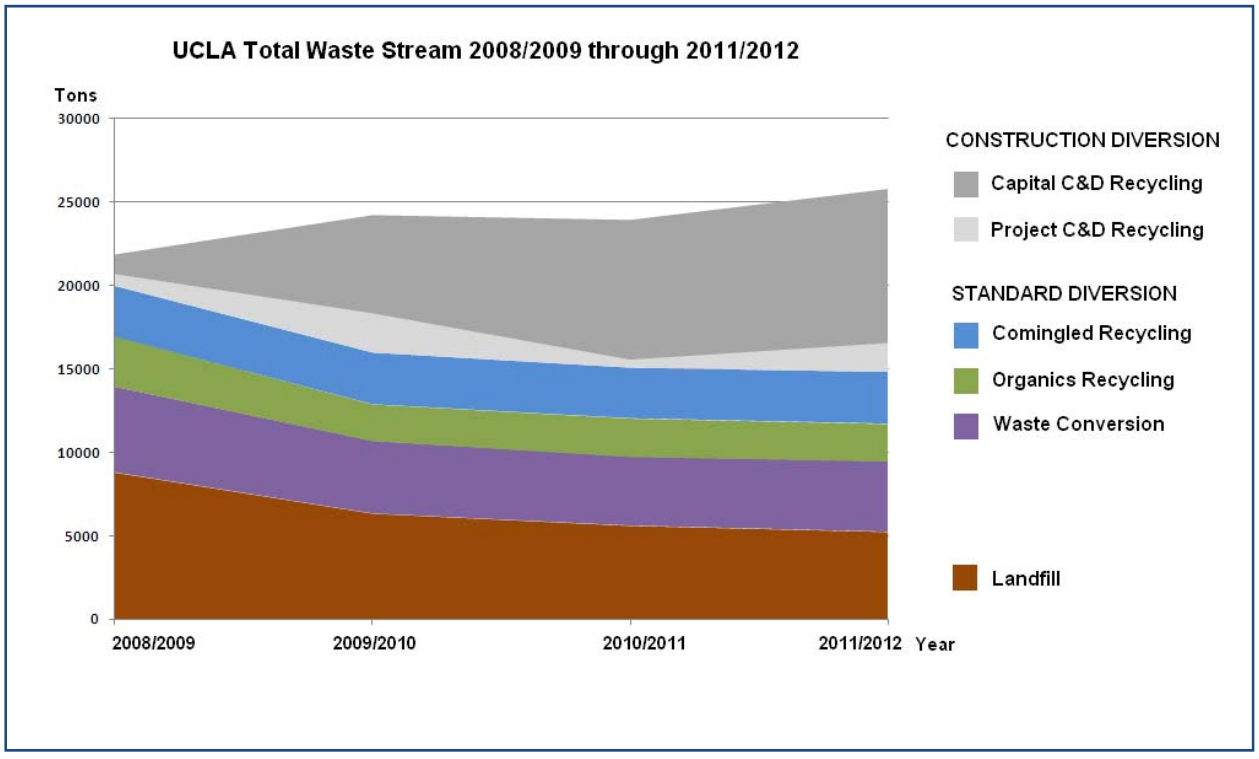
UCLA has a comprehensive suite of source reduction and diversion programs. The University has a program that recycles a wide variety of materials including:

- CRV Beverage Containers
- White Ledger Paper
- Mixed Paper and Newspaper
- Cardboard
- Plastic Film
- Steel and Metal Cans
- Green Waste
- Rock product, Wood and Metal
- Ink and Toner Cartridges
- Food Waste

The University has also pursued a number of waste reduction initiatives, from clothes donation to paperless initiatives.

Although UCLA has had a recycling program since 1990, and a comprehensive program since 2000, in 2008 the University hired a full time recycling coordinator and since then has seen a steady increase in diversion rate and a decrease in landfill waste and overall non-construction related waste. See Figure 1-2

Figure 1-2: UCLA Total Waste Stream 2008/2009 Through 2011/2012 in Tons



Moving towards Zero Waste

This Zero Waste Plan reflects the first comprehensive examination of the campus' waste reduction and diversion programs, and represents a major step towards advancing UCLA's leadership role as an academic institution in the area of sustainability. This plan will provide a foundation for moving towards zero waste to landfill.

Achieving zero waste for any institution is challenging, particularly for a university. UCLA is like a small city, with an average daily population of 70,000 consisting of students, staff, faculty, patients, and visitors. We have an incredibly diverse waste stream as a result of the range of activities and processes that occur on campus and our population is constantly in flux and turning over. Getting to zero waste will require participation from the entire campus community. We will need to take all aspects of our waste management to the next level, from data management to communication and outreach.

UCLA will take all of our existing programs to the next level, increasing recycling on the grounds, in the buildings and expanding composting to additional dining facilities. The university will work closely with the waste hauler to assess our current waste stream through audits and waste characterization, and establish an electronic data management system for waste data, possibly employing a dashboard system. UCLA will pilot Zero Waste in one department or school, testing the strategies and initiatives on a smaller scale before expanding to the full campus.

The Recycling and Waste Taskforce will work closely with UCLA Purchasing to address potential waste reduction initiatives with our suppliers. One of the key initiatives is extended producer responsibility, ensuring that companies and distributors are addressing waste along the full life cycle of a product.

Remaining waste will be sent to a Materials Recovery Facility, which will sort out any remaining recyclables that were not source separated, and the waste remaining after that will be sent to waste conversion facilities; either incineration, plasma gasification, or new technologies as they arise. The UC Policy and UCLA follow a hierarchy of reduce, reuse, and recycle, with MRF and waste conversion being supplemental strategies.

Education and outreach are key to any successful program and we will strive to keep our education programs fresh, ongoing, and in multiple languages where appropriate, keeping in mind audiences and messages, and providing contact information for any inquiries. The Recycling and Waste Taskforce will work to coordinate signage, and develop a cohesive campus-wide communication strategy.

UCLA Health System

As a result of the unique challenges of waste management in a hospital and clinic setting, Medical Centers throughout the UC System track and report their waste separately from the main campuses. Therefore, the Zero Waste Plan has incorporated this special section dedicated to the UCLA Health System data and initiatives. For the purpose of this plan, the scope of the data and initiatives includes The Ronald Reagan Medical Center, Santa Monica Hospital, and Medical Plaza buildings 200 and 300.

Current initiatives within the Health System include reusable totes, sharps containers, pallets, and isolation gowns; medical device reprocessing; recycling batteries, light bulbs, and ink cartridges; elimination of polystyrene from dining facilities; and shredding and recycling of HIPAA paper. The Health System has also undertaken a number of communication and outreach programs including a dedicated website, newsletter features, and an Earth Day Contest. Currently, the Health System is developing a version of the UCLA Green Office Program that is adapted specifically for clinics and medical offices.

Managing waste at a hospital poses some unique challenges in moving forward towards a Zero Waste goal. Working with other UC Medical Centers and nationally through Practice Greenhealth, UCLA Health System will continue to improve recycling and composting and reduce waste, while increasing communication and outreach. Similar to the main campus, supplemental strategies such as MRF (Materials Recovery Facility) and waste conversion will need to be employed in order to reach zero waste to landfill.

Conclusion

Following the UCLA Climate Action Plan, this Zero Waste Plan is part of a larger strategic sustainability planning process that addresses sustainability initiatives in operations, curriculum, research, and outreach efforts. There are many challenges ahead as we strive to take our waste management to the next level and achieve zero waste to landfill and this plan is intended to be a guiding document that we will update and change as we move forward. Through implementation of the initiatives in this plan, UCLA will move towards more sustainable management and stewardship of our resources.

2 INTRODUCTION

On March 22, 2007, University of California (UC) President Robert C. Dynes, signed an expansion to the University of California *Policy on Sustainable Practices* (UC Policy), which committed the ten UC campuses to minimize their individual impacts on the environment and charged them to reduce their dependence on non-renewable energy. The UC Policy was expanded to include sustainable operations, environmentally preferable purchasing, and recycling and waste reduction. The goal was set to achieve zero waste to landfill by 2020, with an interim goal of 75% diversion by 2012.

Pursuant to the Policy, UCLA has developed this Zero Waste Plan to begin to map out how to reduce our waste and get to zero waste to landfill, or 95% or higher diversion by 2020. This plan is intended to be a living document. It will provide an overall road map, and begin to identify initiatives and additional analysis we need to get there. Contingencies will also be part of the plan as the plan is periodically revised to incorporate new initiatives and technologies.

This plan was reviewed and approved by the UCLA Sustainability Committee. The committee has subcommittees- Operations, Academics, Communication, and Events, as well as area specific taskforces. The main analysis was conducted and written by the Recycling and Waste Taskforce, with assistance from EcoTelesis International. The Taskforce will be responsible for implementation of the plan. The Sustainability Committee, formed in 2004, consists of several faculty and administrators from a variety of campus departments, including Student Affairs, Capital Programs, Purchasing, General Services, Housing and Hospitality Services, Staff Assembly, Events Management, ASUCLA, University Communications, the Health System and the Chancellor's Office, along with two graduate and two undergraduate student representatives. The mission of the Campus Sustainability Committee is to create a culture of sustainability at UCLA in which the entire UCLA community is aware of, engaged in, and committed to advancing sustainability through education, research, operations, and community service activities.

3 BACKGROUND –WHY ZERO WASTE

3.1 Moving Beyond Waste

The United States (US) is the most waste-producing country in the world at 1,609 pounds per person per year. This means that 5% of the world's people generate 40% of the world's waste. Each year the US population discards 16 billion diapers, 1.6 billion pens, 2 billion razor blades, 220 million car tires, and enough aluminum to rebuild the US commercial air fleet four times over. Out of every $10 spent buying goods, $1 (10%) goes for packaging that is thrown away. Packaging represents about 65% of household trash and about a third of an average landfill. This kind of inefficient use of our natural resources is unsustainable. All over the world, landfills are filling up with unnecessary wastes and creating greenhouse gases with negative impact on

our environment. Close to home, Puente Hills Landfill, one of our largest landfills in the LA County, will be closing in November of 2013. Our residual wastes will be sent via train and rail-hauled 200 miles to Mesquite Landfill in Imperial County. This will not only increase the landfill disposal fee which currently averages $40 to over $80 per ton, it also continues our unsustainable consumerism with unintended detrimental consequences for our future generations.

Waste, as we think of it, does not exist in nature. In natural systems, waste equals food- the waste of one animal or system is food or fuel for another. As the Zero Waste Alliance puts it, waste is a resource in disguise. Ray Anderson of Interface defined waste as anything their company was paying for and not selling to their customers. Waste represents a failure of process, and inefficiencies. Moving towards a sustainable economy means moving towards zero waste, capturing the resources in our waste through recycling, composting and other means, as well as reducing the waste we produce in the first place. On a global scale it means designing products and systems that are cradle to cradle, or cyclical, where the resources used in production are truly captured and reused fully, rather than buried in landfills.

3.2 Plan Scope

For the purpose of this plan and the UC Policy, Zero Waste refers to zero waste to landfill, or 95% or higher waste diversion. That is, any waste that the university generates must be reclaimed or reprocessed through recycling, composting, and waste conversion. These processes are not one hundred percent efficient. As the field of sustainable design moves forward, we hope that someday all our products will be efficiently designed with the end of life use in mind, and we will be able to more fully recapture all resources. For the time being, we must do the best we can to conserve, recycle, and recapture the resources we use.

Our zero waste policy and plan refers to Municipal Solid Waste or non-hazardous solid waste, which CalRecycle defines as “all putrescible and non-putrescible solid, semi-solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes and other discarded waste (whether of solid or semi-solid consistency); provided that such wastes do not contain wastes which must be managed as hazardous wastes, or wastes which contain soluble pollutants in concentrations which exceed applicable water quality objectives, or could cause degradation of waters of the state (i.e., designated waste).”[1] This does not include regulated waste such as hazardous waste or medical waste, though we have policies and practices in place to process those waste streams.

Our current initiatives are divided into Source Reduction and Reuse measures, and Diversion measures. According to CalRecycle: "Source Reduction" includes, but is not limited to, reducing

[1] http://www.calrecycle.ca.gov/Laws/regulations/title27/ch3sb2a.htm

the use of non-recyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes generated, establishing garbage rate structures with incentives to reduce the amount of wastes that generators produce, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials.[2] CalRecycle also refers to the EPA definition that "source reduction should not increase the net amount or toxicity of wastes generated throughout the life of a product. Reuse measures are a type of diversion, but as we do not currently track or quantify our reuse measures as part of our diversion, we are describing them separately.

3.3 Policy and Regulatory Framework

In 1999, California passed AB 939, the Integrated Waste Management Act. This set diversion mandates of 25% by 1995 and 50% by 2000 for local cities and counties. It also created CalRecycle (the California Department of Resources Recovery and Recycling, formerly the California Integrated Waste Management Board) to administer and provide compliance oversight.

In 2006, to address climate change, California passed the Global Warming Solution Act, AB 32. It set ambitious goals of reducing greenhouse gas emission to 1990 levels by 2020 and 80% below 1990 levels by 2050 in order to mitigate the effects of climate change. AB 32 also set the stage for California to shift our dependence on fossil fuels and transition the state into a cleaner, more secure and sustainable economy. Comprehensive measures of market based strategies and sector-specific regulatory mandates were adopted in 2008. These measures include shifting to renewable energy, zero emission vehicles, and green buildings, and also included increasing recycling and waste diversion and zero waste to landfill strategies.

AB 32 reinforced the importance of recycling and waste prevention in decreasing the emission of greenhouse gases as well as the need to go to zero waste. Currently, California diverts about 65% of solid waste disposal from landfills, exceeding the 50% diversion goal mandated by AB 939. However, according to CalRecycle, over 70% of solid waste being disposed is from commercial sectors (64% from businesses and 8% from multifamily complexes), and most of the waste can be easily recycled. To encourage commercial sectors to source reduce and recycle, California passed the Mandatory Commercial Recycling act, AB 341, in October of 2011.

AB 341 expands on AB 939 and AB 32 waste diversion mandates and greenhouse gas reduction goals by requiring businesses and larger multifamily complexes to have a recycling program in place by July of 2012. It established a statewide policy goal of diverting 75% of waste from landfill by 2020 and reinforced the need to go to zero waste as an integral part of sustainability strategies to reduce our carbon footprint. CalRecycle is seeking public input to take California to a higher level of diversion effort by redefining "diversion" to "recycling" and shifting some

[2] http://www.calrecycle.ca.gov/reducewaste/define.htmhttp://www.calrecycle.ca.gov/reducewaste/define.htm

diversion activities allowed in our current compliance measurement to disposal; and expanding the average per capita baseline years from 2003-2006 to a longer term average of 1990-2010.

At the local level, the City of Los Angeles took on the climate reduction challenge and adopted GREEN LA in 2007 to fight global warming. It mapped out more than 50 initiatives to transform the city into a green and sustainable community, including solid waste measures to divert 70% of city's waste by 2015 (accelerated to 75% by 2013 in 2008) and zero waste by 2025. It also included the use of alternative technologies to convert solid waste being disposed into clean energy and valuable raw materials as part of the City's overall sustainability strategies.

4 WASTE DATA

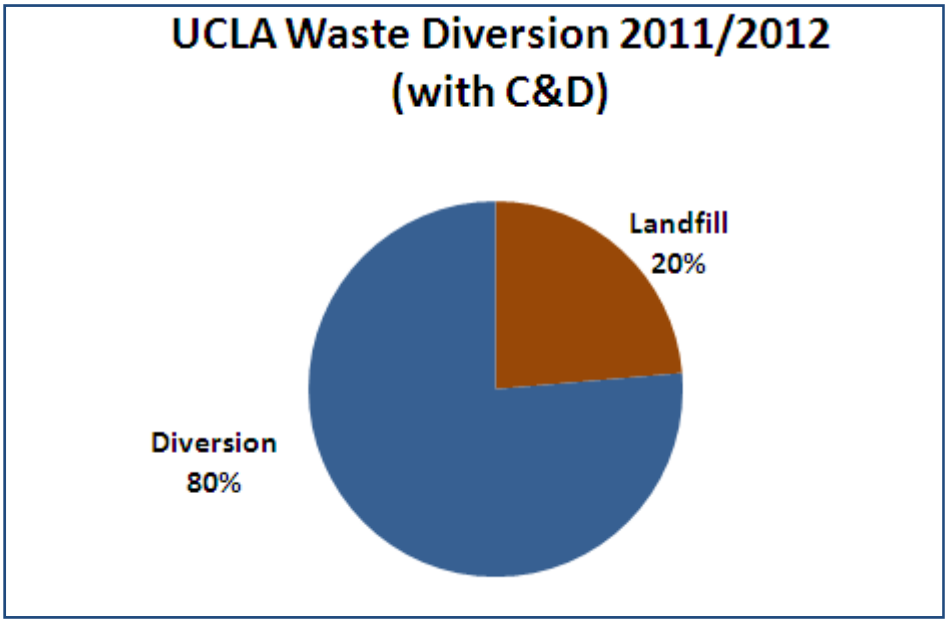
4.1 Scope

Because of the specific challenges of managing waste in a hospital environment, the University of California has chosen to track and report medical center waste and diversion separately. The UCLA Health System is unique among the UCs in that one hospital and many clinics are located on the Westwood campus. The Health System works closely with the rest of the University and many of the sustainability initiatives are tracked and measured together. For this plan, the Health System data and initiatives will be covered in a separate section. The data in Section 7 covers the Ronald Reagan Hospital, Santa Monica Hospital, and the Medical Plaza 200 and 300 buildings. The main campus section of the plan covers the Westwood campus, including the Wilshire Center and the Extension building. Off campus housing is not included.

4.2 Meeting the 2012 Target

UCLA successfully reached the UC Policy Target of 75% Waste Diversion by 2012, achieving 80% waste diversion in fiscal year 2011/2012 (See Figure 4-1). This accomplishment has required hard work from staff, faculty, and students across campus. Under UC policy, the target refers to total diversion, including recycling of waste from Capital Programs construction and demolition projects. However, because construction and demolition from capital projects (Capital C&D) waste can be heavy, and varies significantly from year to year, UCLA also tracks diversion with Capital C&D excluded. In addition to capital C&D, UCLA also recycles construction waste from renovation projects and general maintenance. In this document this waste will be referred to as Project C&D. In fiscal year 2011/2012 UCLA's waste diversion rate was 69% with Capital C&D excluded.

Figure 4-1: UCLA Waste Diversion 2011/2012 (Including Construction and Demolition)



4.3 Historical Data

UCLA has had a recycling program since 1990, beginning with paper recycling. In January 2000, the campus launched a concerted beverage container recycling effort with a grant from the California State Department of Conservation to collect aluminum and plastic. Due to issues with a previous waste hauler, and because there was not a full-time Recycling Coordinator until 2008, the earlier data is unreliable or incomplete. As a result, this plan presents four years of data to illustrate trends.

Figure 4-2 shows UCLA's total waste stream from fiscal year 2008/2009 through 2011/2012. The different components of UCLA's waste stream represented in Figure 4-2 (landfill, waste conversion, organics recycling, comingled recycling, and construction and demolition recycling) are described in greater detail in the following section on current initiatives. Diversion rates have been increasing, and overall non-construction waste has been decreasing.

As we move towards zero waste we will need to focus on landfill tonnage as a primary metric. Diversion rate is important but if overall waste increases, landfill waste can go up even with a higher diversion rate. For this reason, the UC Policy also specifies that the hierarchy of waste management practices should prioritize reduction, then reuse, then recycling. Currently UCLA documents many of our reduction and reuse programs, but we do not quantify those efforts and capture that data as part of our diversion rate. Moving forward towards zero waste will require taking our data management to the next level and quantifying our efforts in reduction and reuse. Figure 4-3 demonstrates a reduction in landfill waste each year.

Figure 4-2: UCLA Total Waste Stream 2008/2009 Through 2011/2012 in Tons

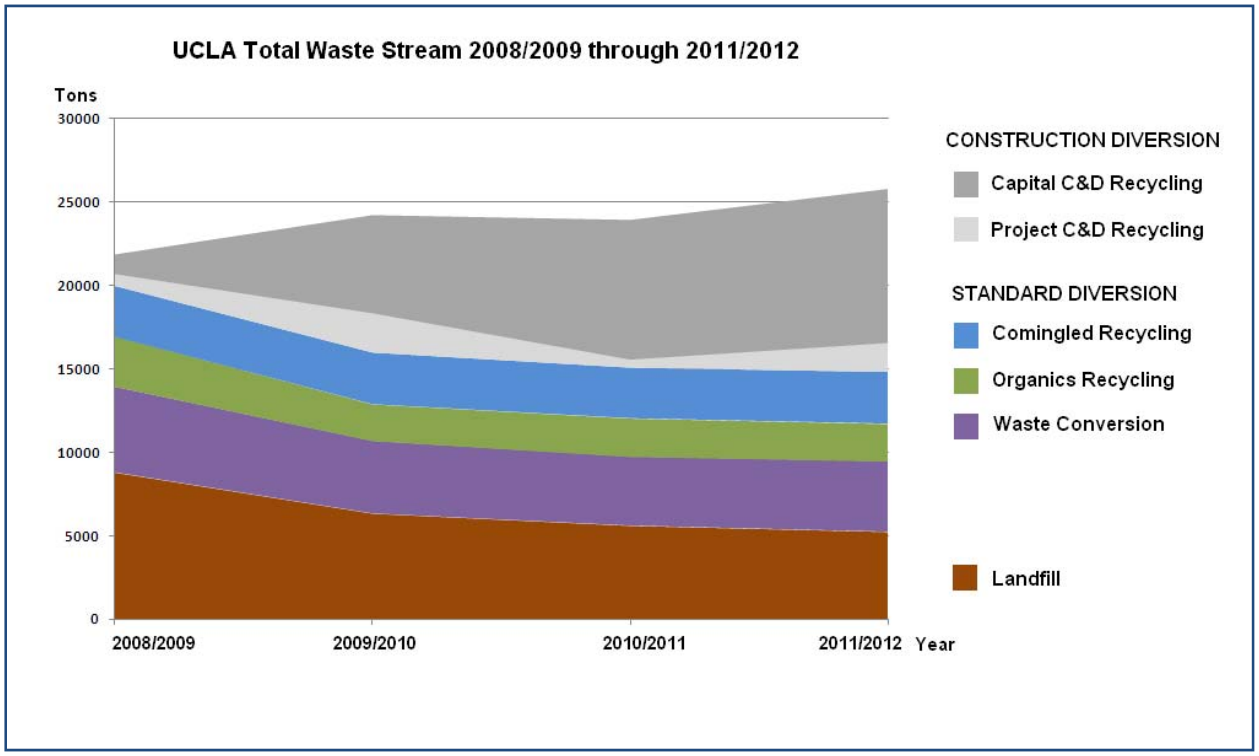


Figure 4-3: UCLA Landfill Waste 2008/2009 through 2011/2012 in tons

5 CURRENT INIATIVES

5.1 Source Reduction and Reuse Initiatives

Purchasing Department Initiatives

UCLA Purchasing works closely with vendors on a number of reduction initiatives including setting printers to duplex printing (double sided), encouraging university wide adoption of Aspen 30 recycled paper (currently 90% adoption), and use of biodegradable trash liners.

Clothes Out

The Office of Residential Life has sponsored the Clothes Out program since 1998 that takes place at the end of the academic year, where students have the option of selling unwanted items, buying other's items, and donating items to the Goodwill. The program began with the donation of clothes and appliances to the Goodwill and in 2009, the program expanded to enable students to buy and sell items as well as donate. Also, recycled boxes from Dining and On Campus Housing Rooms will be provided to students to be reused during move out. In addition, UCLA Recreation hosts a semi-annual clothing and shoe donation drive.

Chemical reuse Inventory

UCLA has offered a Surplus Chemical Exchange Program for several years. EH&S collects unused chemicals and publishes an inventory of what is available. Researchers can view the inventory and request chemical products, which are delivered to them free of charge. Many researchers bring unused chemical products to the hazardous waste pick up. In order to minimize waste disposal while making use of valuable chemicals, EH&S has implemented a surplus chemical redistribution program. There is also a smaller chemical surplus inventory located in the Chemistry department.

Dollar saver

Dollar Saver is a program where campus departments can advertise their surplus property free of charge. One department’s trash can become another department’s treasure. The program is used for small items like chairs and also large items such as equipment and electronics.

Paperless Initiatives

While a limited amount of materials is still printed, UCLA makes course directories, course schedules, and course catalogues available online. In addition, the university has switched to make W2 forms available online. UCLA is examining other potential paper publications that can be switched to online delivery and the Chancellor’s office has requested that departments send online invitations and communications rather than paper.

In an internal email, the following initiative was instituted: “Hard-copy “internal” marketing - brochures and other advertising materials sent by one department to another, or to internal audiences of faculty, students and staff — should be eliminated. Please use e-mail and the web for communications to internal audiences. Printed invitations can be replaced with E-vites, hard copy newsletters with email versions, etc. Such efforts reduce costs and serve UCLA's sustainability objectives. A reduction of print and proper utilization of electronic media also can be more effective, as well as less expensive.”

To discourage excessive printing, all major UCLA libraries, including Powell library, Charles E Young Research library, and the UCLA law library, as well as associated computer labs charge students and visitors for all printing. There are some computer labs, like the Social Science Computing lab, which provide students taking a full course-load of classes the opportunity to print up to $10 worth of free printing per quarter, but charge for any additional printing.

The Evaluation of Instruction Program (EIP) began test piloting an online evaluation system in 2011. EIP vetted many different evaluation programs and decided to use Class Climate by Scantron; a multi-functional comprehensive software package which is capable of supporting the evaluation needs of a large and diverse campus such as UCLA. The current paper evaluation system uses over 300,000 forms and 18,000 envelopes a year – that comes to over 4,700 pounds of paper that could potentially be saved by the program.

Housing and Hospitality Services Meeting Room Services (MRS) began saving paper by eliminating their event packets made for their limited appointment team members. They also began to print their packets double-sided which cut down on half the paper consumption of a normal packet. With the assistance of a student assistant, they devised a way to develop their packets in Adobe Pro and email custom packets to team members with annotations. Since January 2011, the daily BEO packets have been emailed to team members and they have taken it upon themselves to look at their daily events on their own smart phones. This initiative has saved $1,128 per year or 80,640 sheets (.4 tons) per year.

Catering Sales office switched from a manual distribution process to an electronic one. The first step was to use Adobe Acrobat to make the changes electronically instead of printing out hard copies and highlighting changes. As of April 12, 2012, Catering Sales has virtually eliminated printing revised Banquet Event Orders and is strictly editing electronically and emailing to the production kitchen. Catering Sales used to manually print out all new orders, all changes to event orders, and keep a master book of daily orders from seven to ten days out. All of those packets had to then be copied five more times to ship down to the production office, which then had to manually put the orders into three different master books and on to the clip boards for the kitchen. This initiative resulted in a savings of $1,458 per year or 103,248 sheets (.5 tons) per year

Many departments at UCLA have been switching to paperless for course materials, forms and other communication. UCLA Extension saved $50,000 annually by switching to online course materials for their paralegal program. The university also made online W-2s available in 2008.

Bike (Re)cycling

UCLA Events and Transportation annually impounds approximately 100 bikes on campus, mostly abandoned by students and staff. On Sunday morning, October 16th, 2011, over 300 people showed up on the roof of Structure 8 for UCLA Bike (Re)cycling Day, hoping to be one of 80 people who got to pick up a free used bike or bike parts previously left behind on campus. By the end of the day, every bike and bike part was taken. In fact, the feedback and outcome were so overwhelmingly positive that the event will likely be an annual campus event.

Behind the scenes, the inaugural Bike (Re)cycling Day actually took months of planning, and was made possible by a change earlier this year in the California Civil Code regarding found and unclaimed property. The change allows more flexibility in how such property is redistributed. Bikes and other abandoned property valued at less than $300 can now be disposed of at the discretion of the University.

Transportation's Planning & Policy (TPP) unit met with a representative from the Los Angeles County Bicycle Coalition (LACBC) to appraise each bike's value, and TPP worked with Parking Enforcement and UCLA Police to repurpose the bikes for the UCLA community through the UCLA Bike (Re)cycling Day. In addition to the bikes and bike parts distributed at the event, some bikes were donated to the UCLA Thrift Store and others to the LACBC, whose Bike Wrangler Program solicits abandoned bikes from different universities, then repairs the bikes and redistributes them to low-income communities. Communications Services contributed greatly to the effort, developing the graphics, producing a successful social media and communications strategy, and staffing the event with TPP.

UCLA Bike (Re)cycling Day. Photo Credit: UCLA Transportation

5.2 Diversion Initiatives

Capital Programs Construction Recycling

UCLA recycles nearly all construction and demolition waste (or C&D waste),which includes- concrete, wood, metals (steel, copper, aluminum, stainless steel), stone, plastics, paper, glass, etc. Construction waste is tracked separately because of the high variability in the materials.

Landscape/green waste recycling

UCLA recycles between 150 and 200 tons of green waste from landscaping per month and reuses it for mulch and other landscaping needs. Wood chip mulch is from the chipping of tree and landscape pruning on campus. Rather than being discarded and taking up landfill space, these products are now providing a better growing environment in the landscape areas. Wood chips help retain moisture, reduce soil temperature, reduce noxious weeds, reduce erosion, and create natural walkway paths. Turf recycling is the horticultural practice of leaving grass clippings on the turf when mowing. On a sunny day, the clippings will quickly decompose within eight hours, returning nutrients to the soil. Grasscycling reduces water and fertilizer requirements, mowing time, and disposal costs.

Commingled Recycling

In 2010, UCLA switched to commingled or single stream recycling collection on the campus grounds, meaning one bin for all recyclable materials. With technological improvements over the past few years it is now possible to recycle just about everything. Waste haulers can now very efficiently separate recyclable materials (paper, plastics, cans, and glass, etc.) at their facilities so it is no longer necessary to have separate bins for these items, making recycling more convenient and less confusing. Our commingled bins collect mixed recyclables including glass, aluminum, foam, plastic containers numbers 1-7, mixed paper, cardboard, and juice boxes (aseptic packaging). This switch resulted in a significant increase in the collection of recyclables.

Desk-side Recycling

Starting in 2008, UCLA began collecting recyclables from inside office buildings through the deskside recycling program. Beginning with mixed paper, the program also shifted in 2010 to commingled recycling. Currently the program is in 39 buildings.

Food Waste Recycling

UCLA collects 60 tons of food waste per month that is composted at American Organics composting facility in Victorville. The composting program collects food from the back of the

house (kitchen) operations at all the dining halls and from the front of the house at several boutique restaurants. Recently a student initiative has begun collecting food waste from on campus graduate housing and established a compost bin at the campus organic garden. Compost workshops are also offered.

Event Waste Diversion

The Events Subcommittee of the UCLA Sustainability Committee has worked on reducing waste at UCLA events. A volunteer training program was created to train student volunteers to assist with source separation. The Subcommittee designed a guide to green events, which has a significant focus on reducing and diverting waste. These initiatives have led to higher rates of diversion even at large events. For example, Facilities Management and Events worked with students under a grant from The Green Initiative Fund to divert waste at the annual JazzReggae festival. In 2012, waste diversion at the festival was approximately 75%.

Photo credit: JazzReggae Fest

Reusable Water Bottles at JazzReggae. Photo credit: JazzReggae Fest

Carpet and Mattress Recycling

Housing & Hospitality Services recycles 2,500 used mattresses annually. Additionally, any carpeting replaced or removed during renovations are recycled. University wide, UCLA Purchasing requires sustainability initiatives be part of the practices of any carpet vendor. UCLA carpet vendors take back and recycle all carpets, building extended producer responsibility across the life cycle.

ASUCLA Initiatives

The Associated Students UCLA (ASUCLA) operates most stores and dining facilities on campus outside the residence halls. ASUCLA provides Refillable Mug Programs in our Coffeehouses, with a significant discount in coffee and soda, or customers can bring their own mugs for a smaller discount. ASUCLA uses towel dispensers with motion sensors in our facilities that dispense towels made from a 100% recycled paper, and paperless hand-dryers have been installed in Lu Valle Commons and in Ackerman Union restrooms that save 500,000 paper towels from going to the trash every year. The UCLA Bookstore offers digital textbooks and sells recycled paper products such as writing paper, paper towels, and tissue. All restaurant napkins are recycled paper. In addition to eliminating polystyrene from the dining operations, ASUCLA required all franchises on campus to eliminate polystyrene as of 2011.
ASUCLA Sustainability: http://www.asucla.ucla.edu/sustainability/index.asp

Additional Recycling Programs

UCLA also recycles a number of items in separate smaller streams, such as ink cartridges, CDs, and DVDs. UCLA Software Central coordinates a campus wide initiative to recycle old CD, CD-ROM and DVD disks.

Electronic recycling

Although electronic waste is not counted as MSW and therefore not part of our diversion rate, UCLA has an electronic waste recycling program that recycles approximately 10 tons of electronic waste per month. This includes computers, monitors, CPU's, keyboards, batteries, cell phones, and more. Additionally, UCLA hosts a county S.A.F.E. center, a hazardous and electronic waste drop off site for the surrounding community.
SAFE Center: http://www.ehs.ucla.edu/pub/UCLA%20S.A.F.E.%20Center%20Flyer.pdf

Waste Conversion

Currently, not all materials are recyclable or compostable, so even as we increase our recycling and composting significantly, we anticipate the need for supplemental strategies to get to zero waste. Waste conversion and reclaiming valuable resources are important techniques for any thorough integrated waste management plan or zero waste plan.

Waste to energy technologies have been successfully used to manage municipal solid waste throughout the world as well as in the US. It is a reliable source of energy, reduces greenhouse gas emissions and air borne/water pollutants, extends our landfill life by reducing the volume of trash being disposed and increases recovery of resources by either pre-processing before incineration or recovery of materials such as metals after incineration. Currently there are 3 permitted waste to energy facilities in California: Two in Los Angeles County (Commerce Refuse to Energy in the City of Commerce and Covanta's Southeast Resource Recovery Facility in the City of Long Beach) and one in the Central Valley (Stanislaus Resource Recovery Facility in the County of Stanislaus).

Approximately 15-20% of our waste stream is currently processed at the Commerce facility. The Commerce facility, built in 1987, is a 350 tons per day incineration facility that converts residential and commercial waste into enough electricity to power 20,000 homes. Additional end products such as metals are recovered for recycling and the ash is processed as road based materials for use in constructing landfill roads.

5.3 Communication and Outreach

Staff Learn At Lunches

UCLA Staff Assembly hosts a Learn at Lunch series on a variety of topics. UCLA Sustainability has offered sessions on Recycling, Sustainability, and the Green Office Program through this series. These sessions give staff a chance to learn about recycling and sustainability at UCLA and get answers to their questions about recycling.
UCLA Today article: "Recycling Enthusiasts Get Tips from Campus Coordinators"
http://www.today.ucla.edu/portal/ut/recycling-enthusiasts-get-tips-74240.aspx

Staff On-Boarding

All new Housing & Hospitality Services (H&HS) employees receive a 30-minute workshop on sustainability focusing on UC's waste goals and what items are recyclable and compostable.

"Green Handbook" for Events

The Events Subcommittee of the Sustainability Committee established an online Green Handbook for event planners and organizers to educate them on options for planning and executing green events. The Handbook contains information on waste, recycling, composting, planning (including marketing, advertising, inviting and registration/ ticketing) and is currently being updated to current standards and new measures, including possible new waste management initiatives.
Green Event Handbook: http://uclaevents.com/greenevents/

Green Guide to Life at UCLA for Students

Together with a student team, UCLA Sustainability and UCLA Housing and Hospitality Services designed a green guide for students. The guide covers all aspects of sustainability including recycling and waste. The guide is available in full online in addition to a limited number of printed copies.
Green Guide: http://www.sustain.ucla.edu/get_involved/article.asp?parentid=8401

Green Guides at the UCLA Earth Day Fair. Photo Credit: Nurit Katz

Green Office Program

UCLA's Green Office Certification Program encourages UCLA staff and faculty to join in working towards a more sustainable university. As part of UCLA Sustainability, the program seeks to build on the achievements of UCLA's Center for the Study of Women (CSW), which was a green office pioneer and the success of Green Office programs at other campuses. Staff and faculty of campus departments can participate in an assessment of their office practices. Each office designates a sustainability ambassador to be the point of contact and coordinate with a UCLA Sustainability intern and complete a Green Office Evaluation. The evaluation provides tips for each office to become more environmentally-conscious and attain Green Office certification. The sustainability ambassador then teaches office peers as well. So far, over 35

departments/offices have been certified and more than 40 are in progress. Some departments have chosen to do interdepartmental competitions.
Green Office Program: http://sustain.ucla.edu/news/article.asp?parentid=6058

UCLA Extension Green Celebration. All departments of Extension participated in the Green Office Program and received a Silver or higher certification. Photo credit: Nurit Katz

5.4 Applied Student Research

UCLA has many academic programs in sustainability. A number of undergraduate and graduate student research projects have focused on waste and recycling at UCLA. The UCLA Action Research Team (ART) program, offered through the Institute of the Environment and Sustainability, is a student-run program held during winter and spring quarters with the goal of initiating dialogue, conducting research, and enacting change in sustainability by bringing together students, faculty, and administration. Students, faculty, and administration, are matched up based on mutual sustainability interests and collaboratively pursue projects leading to some remarkably successful sustainable progress.

Five teams have done projects related to waste, covering topics from measuring food waste in the dorms to assessing student attitudes towards campus recycling and composting. One ART team assisted in the design of communication campaign and signage for the roll out of our 2010 switch to commingled recycling. A 2012 Action Research Team established a composting program on campus at the student run Organic Garden at The Sunset Canyon Recreation area. Another team assisted ASUCLA in evaluating the feasibility of composting at their dining facilities.

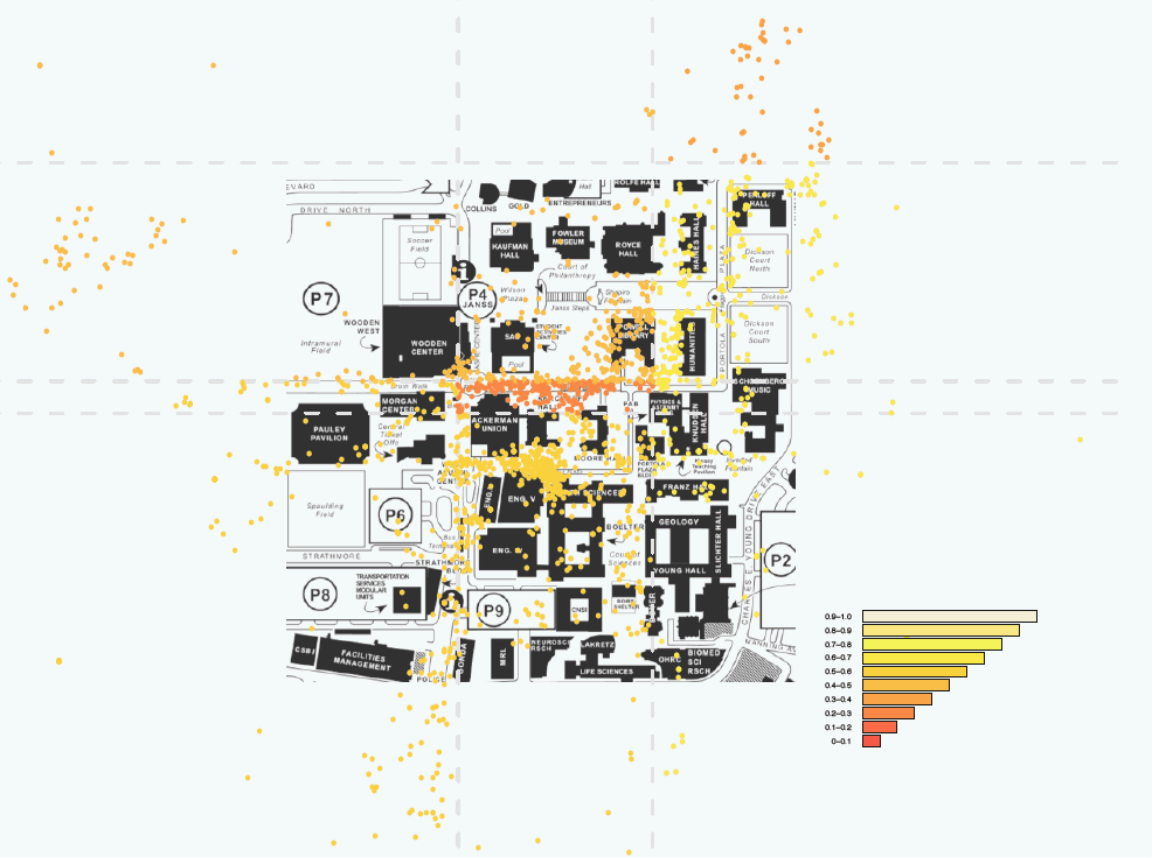
UCLA Today Article "Meet your New Trash Can"
http://today.ucla.edu/portal/ut/meet-your-new-trash-can-157514.aspx
Daily Bruin Article "Compost crew: Waste Watchers turn trash into fertilizer by properly disposing organic waste"
http://www.dailybruin.com/index.php/article/2012/06/compost_crew_waste_watchers_turn_trash_into_fertilizer_by_properly_disposing_organic_waste
Action Research Teams:
http://www.environment.ucla.edu/academics/article.asp?parentid=1050

Students in the 2010 Recycling Action Research Team,
with the new commingled recycling bins. Photo credit: UCLA Today


Students in the 2012 Waste Watchers Action Research Team. Photo Credit: Julia Jaye Posin

Graduate teams have been engaged as well. One team of Masters of Public Policy students did a final masters project on UCLA Recycling. An Urban Planning graduate student did a client project for UCLA Sustainability that focused on researching best practices in Zero Waste in both the private and public sectors. In a 2009 Garbage Watch study conducted by Sasank Reddy, a graduate student in the Center for Embedded Network Sensing, over 2,000 geo-tagged images of the tops of garbage cans were collected to demonstrate how many garbage cans throughout campus are contaminated with recyclable waste. The images, captured by cell phones over the course of three weeks, included the location (longitude and latitude) of the garbage can and whether or not it contained visible recyclable material. The purpose of this study was to help facilities determine where recycle bins could be added and how waste can be reduced by identifying the mains sources. Below, Figure 5-1 shows hotspots on campus where recyclables were getting thrown away. The darker colors equate to locations where more recycling is occurring and the lighter gradients represent areas with trashcans contaminated with recyclable material. This study helped Facilities Management determine where more recycling bins were needed.

Figure 5-1: Recyclables Density Map



Credit: Sasank Reddy

6 FUTURE INIATIVES- GETTING TO ZERO

Achieving zero waste for any institution is challenging, but a university is a particularly challenging environment. UCLA is like a small city, with a daily population of 70,000. We have an incredibly diverse waste stream and our population is in constant flux and turn over- students, staff, faculty, patients, and visitors. Getting to zero waste will require participation from the entire campus community. We will need to take all aspects of our waste management to the next level, from data management to communication and outreach.

Strategies for getting to zero waste may be as diverse as the department implementing the program. It is important to identify who are the stakeholders and decision makers. The strategies need to be dynamic, flexible, measurable, and take into account the priorities at hand – with goals and visions set well beyond the "comfort zone" so when opportunities arise - due to changes from technology, economies or key players – we can recognize it and are able to take advantage of it. Education and Outreach are key to any successful program and we will strive to keep our education programs fresh, ongoing, and in multiple languages where appropriate, keeping in mind audiences, messages and providing contact information for any inquiries.

6.1 Department Specific Initiatives

Expand Composting to ASUCLA Facilities

ASUCLA is currently evaluating the cost of implementing back and front of the house composting at their dining facilities. A student group in the Action Research Team program assisted this year with student surveys and research. Lu Valle Commons is being evaluated as a pilot site.

H&HS colored liner program

With a multi-bin system, servicing bins can be challenging. Employees servicing bins must either make multiple trips to the same areas or use a cart with multiple compartments. H&HS will be rolling out a colored bag system where each type of waste stream has a differently colored bag. This will allow the use of a single compartmented cart, while not losing track of type of waste in each bag. This will increase accuracy of recycling and composting and deter misplacement of bags of compostables and recyclables into trash dumpsters.

Capital Programs Recycling Data Management

Capital Programs will create a standardized documentation form for the General Contractor (GC) to provide to their demolition/recycling subcontractor. This form would include guidelines to ensure that the subcontractor obtains the appropriate documentation from the destination facility (date, facility name, tonnage) for the hauled waste/recycling materials. Developing standardized reporting forms will remove the margin of error on behalf of the GC's subcontractors and puts the responsibility for documentation on the GC. Capital Programs will also create a centralized database for the project managers to input the waste diversion reports for the individual projects under their leadership that will consistently generate monthly and annual tonnage data for use by the University. Developing a reporting database will streamline and centralize the collection of the C&D data for use by Capital Programs and other University departments for reporting and LEED considerations.

Additionally, Capital Programs is considering a deconstruction program. There are many organizations that will deconstruct existing buildings in order to extract reusable fixtures, materials, and architectural elements from the building prior to its demolition. This initiative would be implemented by adding this requirement into the Capital Programs Division I Specifications as a pre-activity to any demolition phase. This would be beneficial in increasing the reuse of as much of our buildings as possible and balancing the amount that needs to be recycled.

Expand Deskside Program

Facilities management will add 14 additional buildings to the deskside recycling program by the beginning of 2013.

Zero Waste at Pauley Pavilion

UCLA Recreation, ASCULA, Athletics, and Sustainability are currently examining the feasibility of zero waste at Pauley Pavilion, which is scheduled to reopen after renovation in Fall of 2012. UCLA has been in conversation with other schools that are working on zero waste athletic facilities as well as a national organization called the Green Sports Alliance.

Pouring Rights Initiative

The UCLA Coke/Pepsi pouring rights contract is up for renewal, with a new contract to be awarded September 2013. Purchasing will work with Sustainability and other campus departments to ensure that the new contract addresses sustainability and zero waste, for example, by requiring compostable lids and straws.

6.2 University-wide Initiatives

Waste Characterization Study and Process Flow Assessment

To better understanding our waste stream, UCLA will utilizes two types of waste analysis: a waste characterization study and a materials flow assessment. UCLA has conducted some waste audits and waste characterization studies in different areas of campus. In order to advance our zero waste planning, we will conduct a study of each major waste area of campus to determine the make up of disposed waste and how they are being used. Identifying what is in our waste stream and determining how materials are being used will enable us to more specifically target our source reduction/reuse and diversion initiatives. A Solid Waste Process Flow Assessment can provide information on current practices and materials flow analysis that is necessary to design effective programs. Waste Characterization studies (including audits) are more specific in determining the material make up of the trash.

Both methods can assist in identifying opportunities – not all trash ends up being disposed on site and the amount being generated of some recyclables demand an enormous amount of labor and resources. Similarly, an assessment of the recyclables can also assist in identifying opportunities to source reduce, develop alternatives to items such as packaging, or divert the materials in other ways (materials exchange). Other efficiencies can be identified such as wasted real estate (space used to store paper documents that could be scanned), labor (time and motion studies), and resources (surplus may be better able to liquidate equipment than to sell it for scrap or purchasing may not have to buy packaging or pallets). Assessment of records may include trash, recycling, service requests, purchasing, production (food over-production), and other areas.

Performance Metrics and Program Monitoring

Program monitoring, tracking and development of metrics are important tools in achieving Zero Waste and will be further developed and reported. We will develop standardized definition/terminology and program documentation/evaluation protocols to measure progress toward our zero waste to landfill goal, with “Generate No Waste” as the ultimate goal to aim for.

In addition to our existing waste and recycling metrics, we will develop source reduction metrics that will include amount of waste being displaced (detailed by count, frequency, material type, item weight and possibly volume, etc.). Sometimes recycled amounts are diverted (such as number of cardboard boxes) and without the initial numbers, recycling tonnages may decrease, giving the impression that “recycling is going down” when, in actuality, “source reduction is going up.”

Comparative correlation factors such as the “Adjusted Patient Day” metrics already in place by the Health System will be determined. Other factors, such as number of students, visitors, FTE employees, meals served, etc., will be determined. Checklists of diversion activities and other

operational procedures will assist in identifying participation that may or not be quantifiable, but play a role in program success.

Financial Analysis and Program Funding

Having adequate funding is crucial for program success. The Recycling and Waste Taskforce will develop cost estimates for wasted materials that could be reused. Estimated disposal cost avoidance would include disposal, other resources (such as electricity or water use), labor costs, and maintenance fees. Material rebate/revenue comparison will compare costs and revenue for compacted versus baled material; diverting pallets as usable pallets or combining with wood waste. The taskforce will seek additional funding such as grants and form strategic alliances with hauler, suppliers, other UC campuses, and community organizations to seek innovative revenue sharing and costs savings programs.

Data Capturing and Timely Reporting

At the end of 2012, our contract with our current waste hauler expires. We are working with EcoTelesis to rewrite the RFP for the next solicitation for waste haulers. With Mandatory Commercial Recycling (AB 341) going into effect in July of 2012, our future hauler will be required to assist with zero waste planning and education on campus as well as providing timely electronic data records, and possibly inputing data into an internal data management tool for the university. This will also help us generate timely reports to measure our program effectiveness and identify areas for improvement.

Event Green Seal Certification

We will establish protocols for all events and extracurricular activities to meet minimum criteria for recycling/composting, including in the preparation, planning, and set up phases of event production. Measures include reduction or elimination of landfill waste bins, increased awareness and marketing of "Green Seal" events, coordination with catering and food services to reduce "back of house" waste streams, and recycling of event construction materials rather that disposal.

Communication Plan

The Recycling and Waste Taskforce will develop an overall communication plan that addresses our different audiences: vendors and suppliers, students, faculty, staff, patients, and visitors. Consistent messaging with simple visual imagery is important to the success of a zero waste program. Contamination avoidance and higher participation levels are often dependent on consistent and clear messaging. For example, understanding that Pyrex and other laboratory and window glass become dangerous contaminants in beverage bottle manufacturing, or that grease is one of the main contaminants of paper, is important in the design of education programs. Programs similar in nature will be made distinct from one another through visuals, color coding, and continued education.

The plan will also include better signage coordination. Currently there is a variety of different waste and recycling signage in different departments and areas of campus (Housing, ASUCLA, Recreation, Facilities, etc.). The Recycling and Waste Taskforce will work to develop signage standards that help communicate a clear and consistent message while allowing for some variation in style across departments.

The Taskforce is considering establishing a student ambassador program as part of the communication plan. UCLA Sustainability would **t**rain a group of student volunteers to serve as recycling and waste ambassadors. They could help educate students on source separation at outdoor bins, make presentations in classes, and provide other student outreach.

Pilot Zero Waste Department

We will pilot a zero waste program in a smaller scale such as starting out at one department to evaluate success and work out challenges before expanding to the whole campus. Some buildings at UCLA have many departments, which would be challenging for outreach and tracking. A good pilot department might be a school like UCLA Anderson School of Management or a department like Capital Programs, both of which are departments that occupy an entire building or buildings and are somewhat self-contained.

Material Recovery Facility (MRF)

As described earlier in this plan, not all materials are recyclable or compostable, so even as we increase our recycling and composting significantly, we anticipate the need for supplemental strategies to get to zero waste. Materials Recovery Facilities (MRFs) are useful in capturing additional recyclable materials that are not source separated properly before sending to waste to energy facilities or to landfill.

In general, there are two types of MRFs: 1) clean MRF (single stream - putting all recyclables in one recycling container, or multiple stream – putting source separate recyclables in individual recycling containers), and 2) mixed waste "dirty" MRF that removes additional recyclable materials from our disposed solid waste streams. On average, the recovery rate for a clean MRF is 90%[3] and above, while recovery rate for mixed waste MRF is significantly lower.

As such, education and outreach will be a crucial component of our zero waste initiatives in reducing the contamination rate in our recyclable streams, lowering the amount of trash being disposed, and increasing the recovery of our valuable resources from our recycling and disposed waste streams.

[3]Contractors Report to the Board - Targeted Statewide Waste Characterization Study: Characterization and Quantification of Residuals from Materials Recycling Facilities, by R.W. Beck, Inc. and Cascadia Consulting Groups, June 2006

Waste Conversion

UCLA will continue to use waste conversion technologies as a supplemental strategy to recover energy and resources that we are not able to capture through recycling and materials recovery facilities.

The City of Los Angeles plans to build seven regional conversion technology facilities as part of its overall goal to achieve zero waste to landfill by 2025. One will be located in each of the six refuse collection districts (Harbor, South LA, Western, North Central, East Valley and West Valley) with one additional site within the local region. The City has selected three projects for development and is currently in negotiation with the project teams. Waste conversion technologies are continually being improved to reduce or eliminate the emission of pollutants and airborne particulates, increase the recovery efficiency of beneficial use in renewable fuel sources and materials as valuable feedstock.

UCLA has been and will continue to be part of the City's global warming and zero waste solution, including our own commitment to get to zero waste by 2020. We will consider moving to one of these plants from the current facility in Commerce as they become operational. The use of conversion technologies will also help us and the City achieve a number of statewide goals, including AB 32 greenhouse gas emission reduction goals, AB 939 landfill waste reduction mandates, extended landfill life, conserve natural resource conservation and creation of green jobs.

7 HEALTH SYSTEM WASTE PLAN

7.1 Introduction

As a result of the unique challenges of waste management in a hospital and clinic setting, Medical Centers throughout the UC System track and report their waste separately from the main campuses. UCLA's main hospital is situated on the Westwood campus and a second major hospital is located in Santa Monica. In addition to the hospital facilities, there are ambulatory care clinic buildings on the Westwood campus. Several other clinics under the Health System are located throughout Southern California, but waste from these facilities is handled separately. The UCLA Health System works closely with the rest of the University on sustainability with key staff serving on the Sustainability Committee and taskforces. Additionally, because of the enormity of the challenge of sustainability management in a hospital setting, the UCLA Health System recently created a full time position of Sustainability Programs Manager, and established a Sustainability Steering Committee which reports to the UCLA Sustainability Committee. In addition to the main Steering Committee, the Health System has area specific taskforces that include Energy, Procurement and Waste. The Waste Taskforce will play a crucial role in moving the Health System towards Zero Waste. For the purpose of this plan, the scope of the data and initiatives includes Ronald Reagan UCLA Medical Center, Mattel

Children's Hospital at UCLA, Stuart and Lynda Resnick Neuropsychiatric Hospital, UCLA Medical Center-Santa Monica, and the Medical Plaza buildings 200 and 300.

UCLA Health System is deeply committed to sustainability and recognizes the close ties between the environment and human health. UCLA Health System is a member of Practice Greenhealth, a national organization dedicated to sustainable practices in hospitals and medical centers.

7.2 Current Waste Data

Figure 7-1: Health System Waste Diversion 2011/2012

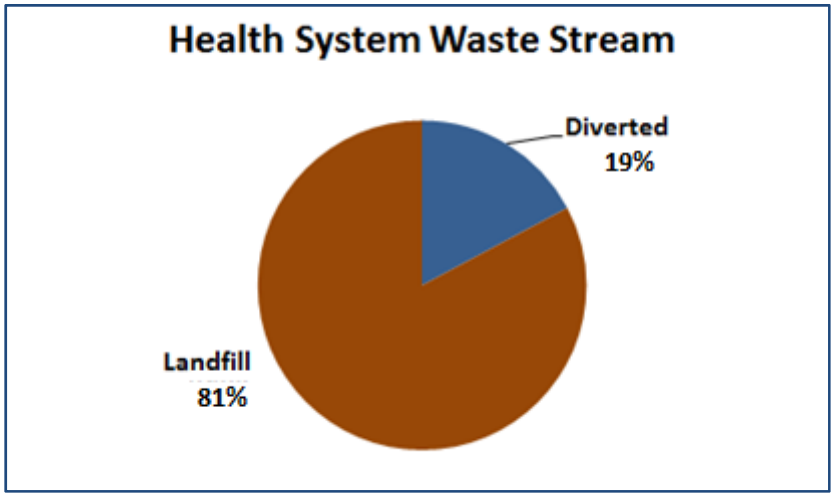
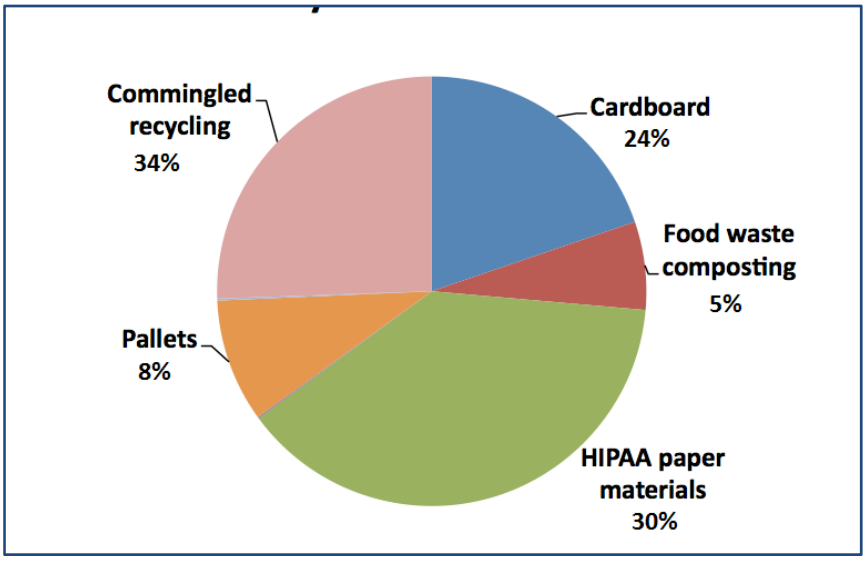


Figure 7-2: UCLA Health System Waste Diversion Breakdown, 2011/2012



Additional diversion <1%- mixed plastics, medical waste reprocessing, medical supplies donation.

7.3 Current Initiatives

The following are some of the current waste reduction, reuse, and diversion initiatives which the Health System has undertaken.

7.3.1 Reduction and Reuse Initiatives

Reusable Totes

The Materials Management department has a program with an outside distributor to reduce the amount of cardboard delivered and disposed of by the Health System. The distributor removes the items from their original cardboard box and recycles the boxes, delivers the items in reusable totes up to the floors, empties and picks up the totes to be returned to the distributor to repeat the process. This initiative has eliminated the use of 172 tons of cardboard boxes annually.

Reuseable Totes

Reusable Mug Incentive

Since 2004, the Nutrition Services Department has offered discounts to customers who bring in reusable cups or mugs.

Reusable Sharps Containers

A systemwide reusable sharps container program was initiated using an outside vendor. While the hazardous waste is sterilized and incinerated, the container itself goes through a regulated

process of sterilization, reassembly and return to the medical center. This initiative has eliminated the use of 40-60 tons of plastic containers annually since 2004.

Medical Device Reprocessing

Starting in 2009, the UCLA Health System began a contract with a vendor for the recovery and redelivery of non-invasive medical devices and equipment once considered disposable. Reusing low-cost high volume devices reduces the amount of medical equipment waste going to landfills.

Wooden Pallet Reuse

Materials Management began using an outside vendor to recycle all wooden pallets used for delivery of any bulk items to the Health System. Over 80 tons of pallets are reused annually as a result of this program.

Reusable Isolation Gowns

Gowns that are used to enter a room or treat a patient on isolation are made of disposable material that is used only once and thrown away. A reusable version of the gown is being piloted starting May 2012 with one of the busiest units at the Ronald Reagan UCLA Medical Center. It will take one year to expand systemwide. These gowns will be used once and then laundered for up to 50-75 uses. Estimated cost savings for five years can be close to $2 million, and will eliminate the use of 189 tons of disposable gowns annually.

Reuseable Isolation Gowns

Paper Reduction

The Accounts Payable department has been working on reducing duplicate invoicing and paper reduction by using an online program. This program allows departments to scan vendor invoices once and upload it onto a web-based program that streamlines the approval process. This minimizes and sometimes eliminates the need to print an invoice and sign it multiple times often wasting paper.

7.3.2 Diversion Initiatives

Commingled Recycling

Recycling containers have been located in staff lounges and administrative areas to collect recyclable paper, plastics, cardboard, and glass.

Battery Recycling

The Safety Department leads a battery-recycling program both at Westwood and Santa Monica medical campuses, recycling 2.4 tons of batteries per year. This department supplies the containers, while the Environmental Services department collects the batteries of all sizes. An outside vendor disposes of the batteries sustainably and according to regulation.

Tower Decommissioning

After patients and staff were moved to the new section of the UCLA Medical Center, Santa Monica, the decommissioning team went through every floor of the nine story tower and salvaged as much as possible. As a result, over 3,000 pieces of furniture, medical equipment and supplies (a total of 50 tons) were diverted from the landfill. Many of these items were given to hospitals overseas.

Elimination of Polystyrene Packaging from Dining

The Nutrition Services Department has eliminated the use and purchasing of polystyrene products. Over 90% of disposable packaging and service ware products in the department are now made from a product called Begasse, which is made from sugar cane.

Ink Cartridge Recycling

Materials Management at the Ronald Reagan UCLA Medical Center and UCLA Medical Center, Santa Monica began collecting all print cartridges, which are then purchased by an outside vendor for recycling. Approximately 5.2 tons of ink cartridges are recycled annually.

Shredding HIPAA

The Health System uses the Health Insurance Portability and Accountability Act (HIPAA) of 1996 as an opportunity to not only shred, but also recycle confidential paper materials. Over three hundred tons of paper have been recycled through this program annually, which began in 2003.

Rejected Linen Program

Materials Management started a 'rejected linen program' to collect linen that is torn, stained, odorous or otherwise unacceptable for the Health System use. Rejected linen is sold to a vendor who recycles the linen. Prior to this program, there was nothing in place for sustainably processing undesirable linen. The department then expanded its rejected linen collection program by establishing bins on the units, working with an outside vendor to mend salvageable linen then securing channels for the unsalvageable. Depending on the nature of the unsalvageable linen, it is used for non-UCLA EMS transport, spills, leaks, and use in School of Medicine laboratories, etc. If there is no in-house use for the linen, it is bought by a vendor who recycles the linen. Materials Management does not discard linen into the trash except for the plastic portion of the under pad liners.

"Save Blue, Go Green"

Jennelyn Natividad, B.S.N., M.S.N., started an operating room recycling program called "Save Blue, Go Green" at Ronald Reagan UCLA Medical Center. The name refers to the wide use of blue wrap in the operating rooms. This material is used to wrap surgical instruments while going through the sterilization process. In addition to blue wrap, the program recycles HDPE #5 plastics, such as IV bags and irrigation bottles. In the Ronald Reagan operating rooms alone, the program diverted 5,480 pounds of material, equivalent to 2.74 tons, of Polypropylene (PP), #5 plastics over a 9-month period. In the Jules Stein Eye Institute operating rooms, the program diverted 2,350 pounds of Polypropylene (PP), #5 plastics over a 6-month period. This program directly decreases solid waste entering landfills and associated disposal fees.

Light Bulb Recycling

UCLA Health System Facilities Management and Safety Department staff coordinates the pick-up and recycling of fluorescent light bulbs.

Additional Waste Streams

The Health System has other waste streams not included in this report, regulated medical waste and hazardous waste. We are required to handle these waste streams separate from municipal solid waste. Regulated Medical Waste (RMW) is treated either on or off-site and sent to the landfill or incinerated. At this time, there is no other environmentally friendly way to dispose of RMW. For this reason, RMW is excluded from this report.

7.3.3 Communication and Outreach

Website and Newsletter

The Health System has a web page dedicated to sustainability efforts and informing staff about recycling initiatives. In addition,success stories have been highlighted in internal newsletters.

Earth Day Contest

This contest was intended to draw ideas from all of our healthcare employees with sustainability in mind. Much of it was for marketing, but the Health System also received close to 300 ideas that will be evaluated for implementation. Seventy-two percent of the ideas submitted were categorized as recycling, reducing waste, or reusing an item.

7.4 Future Initiatives

Reusable Water Bottles

In an effort to reduce the purchase and sale of disposable plastic bottles, we are planning to provide all of the health system employees with a reusable water bottle. This yields both environmental benefits and health benefits for faculty and staff. Plans to retrofit existing water fountains and installing hydration stations are also on the horizon.

Green Office Program

A version of the existing Green Office Program will be created to encourage sustainable practices that take into account the special needs of hospitals and clinics. This will help with the promotion of the sustainability program and expand recycling.

Composting

The hospital cafeteria (Dining Commons) collectspre-consumer and post-consumer patient waste for compost done in a special facility and wants to expand this initiative to post-consumer waste from the cafeteria in an effort to reduce the amount of organics going to landfill. Currently, the Nutrition Services department serves 10,000 meals per day.

CareConnect Electronic Records

CareConnect is UCLA's electronic health record (EHR) program. The system will integrate functions currently performed by approximately 65 software applications into a single system accessible across the health system and available around-the-clock to clinical faculty and staff members. This new EHR program may drastically minimize the need for printing, reducing the use of paper and ink.
http://careconnect.uclahealth.org

Expand and Encourage Grassroots Initiatives

The staff on a medical surgical unit noticed they were stocking up patient rooms and nurse's stations with a lot of supplies that were eventually thrown out after patients were discharged. Members of an established council decided they would designate certain staff to collect all unused supplies and return them the supply room to be reused. The exceptions would be in the rooms occupied by patients on isolation. The result of this in-patient unit waste reduction project was a decrease in waste and a significant cost savings for the unit. As part of their efforts to show the need for this new process, the "Waste Monster" was created out of supplies commonly used in the unit. Projects and implemented processes to reduce waste such as this are encouraged and showcased to engage all staff to think of similar things they can do in their departments and/or units.

Waste Monster

7.5 Conclusion: Moving Towards Zero

Managing waste at a hospital poses some unique challenges. Working with other UC Medical Centers and nationally through Practice Greenhealth, the UCLA Health System will continue to improve recycling and composting to reduce waste. Supplemental strategies such as MRF (Materials Recovery Facility) and waste conversion technology programs will need to be employed in order to reach zero waste to landfill.

8 CONCLUSIONS

Following the UCLA Climate Action Plan, this Zero Waste Plan is part of a larger strategic sustainability planning process that addresses sustainability initiatives in operations, curriculum, research and outreach efforts. This plan is intended to be a guiding document that we will update and change as we move forward to our zero waste to landfill goal.

There are many challenges ahead as we strive to take our waste management to the next level and achieve zero waste to landfill. We are committed to transition UCLA into a zero waste campus by incorporating initiatives provided in this Plan as well as our other sustainability initiatives into our policy infrastructure and our daily activities. Every action taken and initiative implemented will take us closer toward more sustainable management and stewardship of our resources.

Additionally, UCLA will continue to foster collaborative alliances with stakeholders to fight global warming and climate change, share our knowledge and mentor other universities and public and private organizations on how to become zero waste within the context of protecting our planet and our people in a sustainable way.

9 APPENDIX A- GLOSSARY OF TERMS

Composting—The biological decomposition of organic materials such as leaves, grass clippings, brush, and food waste into a soil amendment. Composting is a form of recycling. The CalRecycle Organic Materials Management Web site addresses many aspects of composting.

Electronic Waste—Sometimes called E-Waste. A term loosely applied to consumer and business electronic equipment that is near or at the end of its useful life. There is no clear definition for e-waste. It includes, computers, computer peripherals, telephones, answering machines, radios, stereo equipment, tape players/recorders, phonographs, video cassette players/recorders, compact disc players/recorders, calculators, and some appliances. However, whether or not items like microwave ovens and other similar "appliances" should be grouped into the category has not been established. Certain components of some electronic products contain materials that render them hazardous, depending on their condition and density. For instance, California law currently views nonfunctioning CRTs (cathode ray tubes) from televisions and monitors as hazardous. Therefore, nonfunctioning CRTs from televisions and monitors are banned from the trash. See the Electronics portion of this Web site for a description of Electronic waste.

Extremely Hazardous Waste—A subset of Hazardous Waste. Extremely hazardous waste is any hazardous waste or mixture of hazardous wastes which, if human exposure should occur, may likely result in death, disabling personal injury or serious illness caused by the hazardous waste or mixture of hazardous wastes because of its quantity, concentration, or chemical characteristics.

Grasscycling—The practice of leaving clippings on the lawn while mowing. For more information, see the CalRecyclegrasscycling page.

Green Building—The practice of creating buildings that are designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Also known as sustainable building. Green building includes the practices of salvaging material from building demolition for reuse in new buildings and for recycling. The term, green building is also applied to buildings that minimize impact to the environment, protect health and enhance productivity of occupants, and utilize energy, water, and other resources efficiently.

Hazardous Waste—Speaking in general terms, hazardous wastes are solid wastes that are toxic, ignitable, reactive, or corrosive according to Chapter 11 of Division 4.5 of Title 22 of the California Code of Regulations. Other wastes can be categorically or specifically included or excluded from the definition of hazardous waste. For a more complete definition, refer to Title 22 or contact the Department of Toxic Substances Control. Hazardous waste is defined in section 66261.3 of division 4.5 of title 22 of the California Code of Regulations. Hazardous waste includes extremely hazardous waste, acutely hazardous waste, RCRA hazardous waste, non-RCRA hazardous waste and special waste.

Integrated Waste Management—Managing waste by multiple techniques to achieve solid waste and resource conservation goals. The techniques may include waste reduction, reuse, recycling, composting, transformation, disposal to landfills, and other means.

Medical Waste—In general, medical waste is waste which is generated or produced as a result of diagnosis, treatment, or immunization of human beings or animals, is biohazardous according to Section 117635 of the California Health and Safety Code, is generated by biohazardous research, is generated by the production or testing of biologicals including serums, vaccines, antigens, and anti-toxins, or is

considered to be sharps waste. For a more complete definition, see Section 117690 of the California Health and Safety Code or consult the Medical Waste Management Program of the California Department of Health Services. To learn more about health care waste at home, see the Waste Prevention Information Exchange.

Mercury—A toxic metal that can cause harm to people and animals including nerve damage and birth defects. Liquid mercury that is exposed to the air evaporates readily at room temperature. If mercury is released into the environment, it can contaminate the air we breathe and enter streams, rivers, and the ocean, where it can contaminate fish that people eat.

Pollution Prevention—Preventing all forms of pollution, including toxics and other pollutants emitted into air, water, and land. Waste prevention is a type of pollution prevention.

Postconsumer Content—Also know as postconsumer waste, any product which has served its intended use by a business or a consumer, which has been disposed and subsequently separated from solid waste for use as a constituent in a new product.

Postmanufacture Content—Also known as postmanufacture waste, waste that is created by a manufacturing process, and that is subsequently only used as a constituent in another manufacturing process.

Precycling—This is not a widely used or accepted term, but it refers to actions such as making purchasing decisions that will reduce waste such as buying goods with less packaging (e.g., goods in bulk or concentrated form), choosing products that will last longer, and avoiding single-use or disposable products. These actions are also considered to be waste prevention.

RCRA—The Resource Conservation and Recovery Act of 1976. RCRA is a federal law that is the root of most federal and state hazardous waste management law in the United States, although California and a few other states were already regulating hazardous substances, including hazardous waste, before RCRA. RCRA also set forth a framework for the management of non-hazardous wastes, although many states, including California, already managed non-hazardous solid wastes in a manner very similar to that framework. For California the main benefit of RCRA was the establishment of a national cradle-to-grave tracking system for hazardous waste transport and disposal. For details on RCRA see U.S. EPA's description of federal laws and regulations, and U.S. EPA Region V's description of RCRA.

Recycling—Using waste as material to manufacture a new product. Recycling involves altering the physical form of an object or material and making a new object from the altered material.

Recycling is not waste prevention because only waste can be recycled. One must generate waste in order to recycle the waste. Therefore, if you are recycling, you have already generate waste. Although recycling is a very good thing, ideally it would be better to not generate any waste.

Reuse is not recycling because reuse does not alter the physical form an object. Reuse is preferred to recycling because reuse consumes less energy and less resources than recycling. Of course, recycling consumes less energy and resources than making new replacement items with unrecycled or new material.

With recycling, you generally need to collect a material, transport it, clean and sort it, transform it (for example, melt it down, see secondary material, below), market that transformed material, make the transformed material into a new product, package the product, and market the product. Making a

product out of recycled materials is better than using virgin materials, but waste prevention is even better because it is better to not create any waste. Unlike recycling, most forms of waste prevention require little, if any, transportation, processing and marketing. See the CalRecycle recycling page for more information.

If you send your waste away to be recycled, but you do not buy products made from postconsumer waste, then you are not completing the "cycle."

Examples of recycling:

- At Home—Placing all your paper, cardboard, boxboard such as empty cereal boxes and empty toilet paper tubes, into the recycle bin, and then purchasing paper products made from post consumer recycled paper. Note that if you "recycle" paper, plastic, or anything, but you do not buy products made from postconsumer recycled material, then you are not completing the "cycle."
- In Business—Old tires can be ground up and used to make a wide variety of things, including rubber mats, door mats, pet food bowls, and playground cover. The canvas covered mats in marital arts dojos are commonly stuffed with ground up tires. Used motor oil can be reprocessed into new motor oil, and motor oil made from this "rerefined" oil is widely available.

Composting is a form of recycling.

Reuse—Using an object or material again, either for its original purpose or for a similar purpose, without significantly altering the physical form of the the object or material.

Reuse is not recycling, because recycling alters the physical form of an object or material. Reuse is generally preferred to recycling because reuse generally consumes less energy and resources than recycling. Waste is defined as material for which no use or reuse is intended. Thus, reuse prevents objects and materials from becoming waste. Therefore, reuse is considered to be a form of waste prevention. Examples of reuse follow. To learn more about reuse, consult the CalRecycle Reuse Web site.

- At Home—Wash and reuse your plastic food bags. Buy reusable plastic storage containers to store leftover food, and to store foods that you buy in bulk. Consult material exchanges to purchase used items or to find new homes for items that you no longer need. If you remodel your home, consider using reused building materials, and send demolition materials that you create for reuse. Bring a reusable coffee mug or commuter mug with you when you buy coffee drinks. (Starbucks reported that customers used their own commuter mugs, and received a $0.10 discount, approximately 12.7 million times in 2002. This prevented an estimated 550,000 pounds of paper waste.)
- In Business—Purchase "recycled" ink and toner cartridges for your printers and photocopiers. Have the tires on your cars retreaded when the tread is worn, but the tire is otherwise reusable.

One exception to the normal preference of reuse to the purchasing new items might be some appliances. It is often environmentally preferable to replace very old refrigerators, clothes washers, clothes dryers, or central heating and air conditioning units with new appliances if given a choice between repair and replacement, because the amount of energy (and water, in the case of clothes washers) used to operate some older appliances is substantially more than the amount used to operate new appliances. Of course attempts should be made when replacing appliances to have the metal in the discarded appliances recycled.

Secondary Material—This term traditionally refers to industrial byproducts of a manufacturing process that are used as an ingredient of another manufacturing process to create another product. Traditional usage of the term, secondary material, does not refer to scrap or fragments generated by a manufacturing process and subsequently returned to the same manufacturing process. However, some recent usage of the term, secondary material, contradicts the traditional definition. In some cases the term, secondary material, does include scrap or fragments generated by a manufacturing process and subsequently returned to the same manufacturing process. There is a contradiction between how this term is defined in Section 42002 (f) of the Public Resources Code and in Section 12200 (c) of the Public Contract Code.

Sharps Waste—Go to CalRecycle'sSharps Waste web page. To learn more about what to do with other health care waste at home, see the Waste Prevention Information Exchange.

Solid Waste—In general terms, solid waste refers to garbage, refuse, sludges, and other discarded solid materials resulting from residential activities, and industrial and commercial operations. This term generally includes used oil. This term generally does not include solids or dissolved material in domestic sewage or other significant pollutants in water such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants. However, if any of these materials are separated from the water that carries them, then they generally are considered solid waste. For regulatory purposes, hazardous waste is a subset of solid waste.

Source Reduction—Section 40196 of the California Public Resources Code defines source reduction as any action which causes a net reduction in the generation of solid waste. "Source Reduction" includes, but is not limited to, reducing the use of nonrecyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes generated, establishing garbage rate structures with incentives to reduce the amount of wastes that generators produce, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials. "Source Reduction" does not include steps taken after the material becomes solid waste or actions which would impact air or water resources in lieu of land, including, but not limited to, transformation. See §40196 of the California Public Resources Code. Also see California Code of Regulations, Title 22 §67100.1 (o).

An alternative definition to the one in the statute was adopted by the CalRecycle in May 1993 (as recommended in the Statewide Waste Prevention Plan). This definition highlights the role of individuals as well as organizations, clearly states that source reduction occurs before anything enters the waste stream; and addresses the question of the overall environmental impacts.

> "Any action undertaken by an individual or organization to eliminate or reduce the amount or toxicity of materials before they enter the municipal solid waste stream. This action is intended to conserve resources, promote efficiency, and reduce pollution."

The United States Environmental Protection Agency defines the term, source reduction, as follows:

> "Source reduction is the design, manufacture, purchase, or use of materials or products (including packages) to reduce their amount or toxicity before they enter the municipal solid waste stream. Because it is intended to reduce pollution and conserve resources, source reduction should not increase the net amount or toxicity of wastes generated throughout the life of a product."

The above definition emphasizes the process of how waste is generated. Analyzing this process helps us find source reduction opportunities. The last sentence of the definition handles life-cycle questions that often arise when substituting products or packaging. As you can see, waste prevention, or source reduction, has everyday opportunities such as when mowing your lawn, buying pet food, and in industrial settings such as when designing consumer products.

Source Reduction is used synonymously with the term, waste prevention, defined above. The combined experience of other states and public interest groups indicates that it is easier to understand the term waste prevention. Therefore, the CalRecycle adopted the term waste prevention in May 1993. Check how the terms are being used when reviewing documents or in conversation to avoid confusion.

Sustainability—Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.(See *Our Common Future: The World Commission on Environment and Development*, Bruntland, G (ed) (1987), Oxford: Oxford University Press.)

Transformation—Transformation refers to incineration, pyrolysis, distillation, or biological conversion other than composting. The statutory definition of transformation does not include composting, gasification, or biomass conversion. See §40201 of the California Public Resources Code.

Universal Waste—Sometimes called U-Waste, they are any of the wastes that are listed in section 66261.9 of division 4.5 of title 22 of the California Code of Regulations.

The term “universal waste” was coined by U.S. EPA in an attempt to describe wastes that seem to come from everywhere. The term results in part from an early federal method of identifying hazardous waste, which was distinctly different from the early California method of identifying hazardous waste. The earliest federal waste laws paid attention mostly to the processes that generated waste. Certain processes, mostly manufacturing processes, where deemed to generate hazardous waste based on both scientific and political criteria. The earliest California regulations took a different approach. California identified substances in wastes that were considered to hazardous based solely on risk to human health and the environment. California declared that if those substances where in waste, and if the presence of those substances in waste posed a risk to human health or the environment, then those wastes were considered to be hazardous regardless of which process generated them. Since the passage of the Resource Conservation and Recovery Act (RCRA) in 1976, there has been a blending of the two concepts, with federal regulations moving more closely to the pattern adopted by California. Additionally, RCRA allowed states to have more stringent standards than those required by federal law, and California's standards are more stringent. That is largely why the list of California universal wastes is longer than the federal list. Never the less, the term, universal waste, reflects the traditional federal concept of identifying processes. In the case of universal wastes, there are supposedly no processes that can be clearly identified as the source of generation because they come from an infinite number of sources. They seem "universal." Hence the term. California universal wastes include:

- **Batteries**—Includes AAA, AA, C, D, button cell, 9-volt, both rechargeable and single use. These may contain a corrosive or reactive chemicals, as well as toxic heavy metals like cadmium. (Automotive type batteries are not universal waste. However, when they become waste, they are banned from the trash.)
- **Fluorescent lamps and tubes**—Includes fluorescent tubes, compact fluorescent lamps, metal halide lamps, sodium vapor lamps, high intensity discharge (HID) lamps, and neon bulbs. These lamps

contain Mercury. Mercury vapor might be released to the environment when they are broken. The mercury from broken lamps in trash bins could find its way to lakes and rivers during rains storms.

- **Thermostats**—There is mercury inside the sealed glass "tilt switch" of the old style thermostats (not the newer electronic kind).
- **Electronic Devices**—Includes televisions and computer monitors, computers, printers, VCRs, cell phones, telephones, and radios. These devices often contain heavy metals like lead, cadmium, copper, and chromium.
- **Electrical Switches**—Some electrical switches and relays contain mercury. Such mercury switches can be found in some chest freezers, pre-1972 washing machines, sump pumps, electric space heaters, clothes irons, silent light switches, automobile hood and trunk lights, and ABS brakes.
- **Pilot Light Sensors**—Mercury-containing switches associated with pilot light sensors are found in some gas appliances such as stoves, ovens, clothes dryers, water heaters, furnaces and space heaters.
- **Mercury Gauges**—Some gauges, such as barometers, manometers, blood pressure, and vacuum gauges contain mercury.
- **Mercury Added Novelties**—Examples include greeting cards that play music when opened; athletic shoes (made before 1997) with flashing lights in soles; and mercury maze games.
- **Mercury Thermometers**—Mercury thermometers typically contain about a half gram of mercury. Many health clinics, pharmacies and doctor's offices have thermometer exchange programs that will give you a new mercury-free fever thermometer in exchange for your old one.
- **Non-Empty Aerosol Cans that Contain Hazardous Materials**—Many products in aerosol cans are toxic. And many aerosol cans contain flammables, like butane, as propellants for products like paint. If your aerosol can is labeled with words like TOXIC or FLAMMABLE don't put it in the trash unless it is completely empty.

Waste—Objects or materials for which no use or reuse is intended.

Some statutory and regulatory definitions use the terms discarded, relinquished, stored, and accumulated to define waste.

Waste Diversion—As defined in California statute, the combined efforts of waste prevention, reuse, and recycling practices.

Waste Management Hierarchy—The order of preference of waste management techniques, reduce, reuse, recycle, dispose, as specified in §40051 and §40196 of the California Public Resources Code. This is to say that individuals and businesses should look for opportunities to reduce the waste that they generate before they practice any other option. After all attempts to reduce or eliminate the generation of waste have been exhausted, the next preferred option is to look for opportunities to reuse items or substances which could become waste. If all waste reduction and reuse options are exhausted, individuals and businesses should try to recycle waste items or substances. Note that, in general, items and substances are not considered to be waste if they are reused, and not recycled or discarded. Items or substances that are recycled are considered waste.

Waste Minimization—Refers to reducing or eliminating, and recycling, hazardous waste.

Waste Prevention—Actions or choices that prevent the generation of waste.

Common examples of waste prevention:

- At Home—Avoiding the use of disposable utensils, napkins, and paper towels, and other disposable products. Buying durable items that will last longer than less durable items. Buying breakfast cereal, rice, or other grain-related foods in bulk, and store these items in reusable containers until needed. This eliminates the boxes used to package and store smaller portions. Note that buying a case of individual boxes of cereal would not help prevent packaging waste, although it might help reduce the frequency of automobile trips to the store.
- In Business—Buying cases of paper in which the paper is not packaged in individual reams. Some paper companies provide paper this way. Why package the package? By not creating individual packages of 500 sheets you can just open a box of paper next to the photocopier or printer, and put what they need into the machine. There is no hassling with wrappers, and more importantly, no wrapping paper waste is created.

Waste prevention is used synonymously with the term source reduction which is defined above. The combined experience of other states and public interest groups indicates that it is easier to understand the term waste prevention. Therefore, the CalRecycle adopted the term waste prevention in May 1993. A number of local jurisdictions in California, public interest groups and a few states also use the term, waste prevention, synonymously with waste reduction, also defined below. Check how the terms are being used when reviewing documents or in conversation to avoid confusion.

U.S. EPA and many states use this term to mean any action undertaken to eliminate or reduce the amount or toxicity of materials before they enter the municipal solid waste stream. Reuse is a type of waste prevention. Waste prevention is a type of waste reduction. Waste Prevention is a type of pollution prevention.

Note: Recycling is not a form of waste prevention. See the definition of recycling for more information.

Waste Reduction—Actions taken before waste is generated to either reduce or completely prevent the generation of waste. The combined efforts of waste prevention,reuse, composting, and recycling practices. A number of local jurisdictions in California, public interest groups and a few states use waste reduction synonymously with waste prevention, defined above. Check how the terms are being used when reviewing documents or in conversation to avoid confusion.

(http://www.calrecycle.ca.gov/ReduceWaste/Define.htm#Transform)

10 APPENDIX B – REGULATIONS HIGHLIGHTS

Highlights of major legislations and regulations adopted by CA since 1989 and policies adopted by the City of Los Angeles related to Zero Waste.

AB 939 – Integrated Waste Management Act, 1989

Created CalRecycle (the California Department of Resources Recovery and Recycling) to administer and provide compliance oversight; authorized penalty up to $10,000/day for non-compliance. CalRecycle was formerly CIWMB (the California Integrated Waste Management Board).
Diversion mandates: 25% by 1995, 50% by 2000; submit annual integrated waste management plan to CalRecycle for review.
Focus: Solid waste diversion from landfill using integrated waste management hierarchical approach: *Source reduction; Recycling & Composting; Environmentally safe transformation & Land disposal.*
Compliance measurement: Conduct waste characterization study to calculate total generation for base year and compliance years. (Generation = Disposal + Diversion)
Compliance entities: Local cities, counties and regional agencies. Commercial sector is not directly subject to AB 939 mandates.

AB 2494 – Adjustment Method, 1992 (amended AB 939 measurement calculation)

Offset changes in a jurisdiction's population and economic changes between base year and measurement years.
Adjustment factors include: Population, employment, taxable sales, and Consumer Price Index. Actual numbers take ~ 18 -24 months to finalize.

AB 75 – Waste Diversion Requirements for State Agency and Large Facilities, 1999

Diversion mandates: 25% by 2002, 50% by 2004 and submit annual integrated waste management plan to CalRecycle for review.
Focus: Mirrors AB 939 mandates for local jurisdictions.
Additional focus: Require to purchase postconsumer recycled content products under State Agency Buy Recycling Campaign (SABRIC, AB 14, SB 1106) to stimulate recycling infrastructure and market demand for recycled materials.
Compliance entities: State agencies and large state facilities (state agency includes community colleges and state universities). *The Regents of CA are encouraged to comply, not mandated.*

SB 1016 - Per Capita Disposal and Goal Measurement, 2008

Compliance measurement: Changed to Disposal per capita using only 2 factors: population and actual disposal numbers reported by disposal facilities. Compared to diversion based calculations (AB 939 and AB 2494), disposal per capita is simple, more accurate and more timely (~ 6 months to obtain final data).
Focus: Waste management program implementation and monitoring with disposal per capita as an indicator of compliance evaluation, not a measurement of compliance. Compliance goal is still 50%.
Compliance entities: Municipalities, state agencies and large facilities.

AB 32 – Global Warming Solution Act, 2006

GHG emission goals: Reduce emission to 1990 level by 2020, and 80% below 1990 by 2050. Tasked CARB (California Air Resources Board) to create Scoping plan (adopted in 2008) with comprehensive strategies of market based measures and regulatory mandates to reduce GHG including renewable energy, water conservation to waste and recycle measure.
Focus: An integral part of State's overall goal to combat climate change and reduce greenhouse gas (GHG) emissions from all sectors of our economy.
Collaborative partnerships with various regulatory agencies and stakeholders to design/ implement adopted measures.
CalRecycle is the lead in waste and recycle measure to come up with recycling based solutions (mandatory commercial recycling and moving towards zero waste).

AB 341 - Mandatory Commercial Recycling, October 2011

State-wide goal: 75% waste diversion from landfill by 2020.
Compliance date: 7/1/2012
CalRecycle is responsible for implementation and oversight; CARB is responsible for development of emission factors.
Focus: Mandatory commercial recycling required for businesses that generate 5 or more cubic yard of waste per week, and multifamily complexes with 5 or more units; recycling program consisting of education, outreach and monitoring required for local jurisdictions.
Compliance entities: Businesses, multifamily complexes and local jurisdictions. *"Businesses" defined included The Regents of CA"*

GREEN LA - City of LA Global Warming Action Plan, 2007, amended in 2008

GREEN LA: An action plan with 12 guiding principles and over 50 initiatives to transition the City into a green and sustainable community. The initiatives included conversion technology strategies outlined in RENEW LA as an integral part of this plan to achieve zero waste.
Solid waste diversion goals: 75% by 2013 and zero waste by 2025
RENEW LA (Recovering Energy, Natural Resources and Economic Benefit from Waste for LA), 2006, was used as the blueprint for the City to achieve zero waste. The definition of zero waste as defined is to maximize diversion by reduce, reuse, recycle or convert the resources now going to disposal into clean renewable energy and/or valuable raw materials.