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Portland State University Solid Waste Assessment Report

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Portland State University Solid Waste Assessment Report

Prepared for Portland State University Campus Sustainability Office
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May 7, 2013

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Section 1: Background

In January of 2013, the Campus Sustainability Office (CSO) of Portland State University (PSU) contacted Community Environmental Services (CES) with the request to conduct a landfill-bound waste assessment for the University's 50-acre downtown campus, located in Portland, Oregon. CES is a research and service unit within the Center for Urban Studies at Portland State University. PSU is a state university that was founded in 1946, is home to Oregon's largest undergraduate and graduate enrollment, and is the only public university in the state located in a major metropolitan city. Portland State is world-renowned for its sustainability initiatives, and has had this status reflected in the numerous green rankings achieved through the campus's efforts.

PSU currently employs a variety of material diversion practices depending on the building and its occupants. All buildings currently collect commingled recycling and glass bottles and jars. Pre-consumer compost is collected in various locations across campus such as the Aramark serviced kitchens and retail tenant kitchens. Post-consumer compost is collected in three locations: the student-run, sustainably-focused Food for Thought Café, Victor's, and a single station in the Smith Viking Food Court. Compost collection is also available in sporadic locations employing "DIY" systems, in which responsible parties empty their own internal compost bins into the external compost containers provided by the commercial hauler.

The collection for recycling of rigid plastics, batteries, e-waste, film plastics, yard debris/landscape waste, expanded foams, media (including CDs), and other recoverable materials is accomplished through individual and independently generated work order requests on behalf of individual departments or units. PSU employees have pointed out that high variability, changes to staff and units responsible for collection, and insufficient staffing have made campus-wide collection difficult. Periodic collection recycling events are also held for Styrofoam, textbooks, and e-waste.

Chuck It for Charity collection bins are located in Ondine Residence Hall, Broadway Housing Building, Montgomery Residence Hall, and Blumel Hall for 10 days during spring, fall, and winter quarter move out. Through this service, students can donate gently used furniture, kitchenware, working electronics, clothing, blankets, small appliances, household items, and non-perishable food items.

The objectives of the waste assessment were as follows:

1. Determine the composition of the landfill-bound waste stream by conducting a waste sort on the waste generated from twenty-two strategically-selected buildings on campus during a disposal period of one to three days. The buildings were chosen to represent the entire campus by their usage type and square footage, thereby allowing a snapshot of the waste composition and daily activities of the entire campus to be assessed. The waste assessment included hand sorting the waste into material categories, weighing the sorted materials, recording the data, and making quantitative and qualitative observations.
2. Develop recommendations regarding material waste that could be diverted or reduced based on the findings from the waste assessment.
3. Provide evidence of waste minimization and targeted diversion opportunities.

For the purposes of this report, the term “waste sort” refers to the physical hand sorting of materials into defined categories. The term “waste assessment” refers to the entire process of sorting, observing, and analyzing the waste.



Figure 1. 15% by Volume Sample (on left) and Remaining Materials (on right)

Section 2: Methodology

The waste sort was conducted on April 16th, 2013 by CES, Facilities and Property Management (FPM), and CSO employees at the Metro Central Transfer Station, located at 6161 NW 61st Avenue, Portland, Oregon. A landfill-bound waste load originating from twenty-two buildings on the PSU campus was delivered to the site. The materials in the load originated from the landfill-bound waste containers in thirteen different disposal corrals located throughout the PSU campus and contained materials collected over one to three days. The landfill-bound waste load weighed 3.44 tons (6,880 pounds) according to the Metro Central scale house. The hand-sorted sample weighed a total of 690 pounds, comprising 10% by weight of the entire load, and approximately 15% by volume.

The 22 buildings chosen for assessment are listed below with a generalized use type and their respective landfill-bound waste containers. Among the buildings included are three of the seven PSU-managed campus housing buildings (The Broadway, Stephen E. Epler Hall, and King Albert), the centrally located Millar Library, the LEED Gold Certified Academic and Student Recreation Center, the Helen Gordon Child Development Center, which is a child day care center serving the students and faculty/staff and serves as an academic laboratory resource, and PSU's University Place Hotel. See "Appendix A: PSU Waste Assessment Buildings' Usage Type by Square Foot" for a complete breakdown of the buildings by technical use types and square footages.

- The Broadway - Residential/Retail/Classroom/Office, two 2-yard compactors, one 4-yard container
- Smith Memorial Student Union - Residential/Retail/Classroom/Office, two 2-yard compactors
- Shattuck Hall and Annex – Classroom/Office, one 2-yard container
- East Hall - Office, shares container with Shattuck Hall and Annex
- Fourth Avenue Building - Classroom/Office, two 4-yard containers
- Engineering Building – Classroom/Office/Lab, shares container with Fourth Avenue Building
- George C. Hoffman Hall - Residential, shares container with King Albert
- Koinoinia Building - Retail/Classroom/Office, one 2-yard container
- Graduate School of Education - Classroom/Office, shares container with USB
- School of Business Administration – Classroom/Offices, shares container with USB
- Science and Research and Teaching Center (SRTC) – Classroom/Lab, one 4-yard container
- Science Building One – Classrooms/Labs, shares container with SRTC
- Stephen E. Epler Hall – Residential/Classroom, one 4-yard container

- King Albert Building – Residential, one 4-yard container
- Urban Center – Retail/Classroom/Office, one 3-yard container, one 4-yard container
- Simon Benson House - Offices, shares container with USB
- Branford Price Millar Library - Retail/Classroom/Office, one 4-yard container
- University Place – Hotel/Retail, one 3-yard container
- University Services Building (USB) - Retail/Office, two 4-yard containers
- Helen Gordon Child Development Center – Classroom/Office, one 2-yard container
- Academic and Student Recreation Center - Recreation/Retail/Classroom/Office, 4-yard container

Figure 2 presents the entire 3.44 ton landfill-bound waste load from PSU. Figure 3 presents the waste sort in progress.



Figure 2. Landfill-bound Waste Load Prior to Sampling and Sorting



Figure 3. Waste Sort in Progress

The landfill-bound waste sample of materials that weighed over 690 pounds, was hand sorted into the twenty-seven material categories listed below. The five categories that are grouped under “Readily Recyclable and Recoverable” are considered more readily recyclable due to the available diversion infrastructure on campus. The general category of “Other Recoverables” includes materials that are divertible through current systems at PSU. The general category of “Non-recoverables” includes materials that are avoidable and possibly divertible through unique diversion programs. See “Section 7: Glossary of Material Categories” for detailed descriptions of each material. These material categories were chosen by CES and CSO to best view the waste composition of the PSU campus in accordance with the current campus diversion systems. The list of material categories is as follows:

<p>Readily Recyclable and Recoverable:</p> <ul style="list-style-type: none"> • Corrugated Cardboard • Mixed Paper • Metal Containers • Plastic Bottles and Tubs • Glass Bottles and Jars <p>Compostable:</p> <ul style="list-style-type: none"> • Compostable Food Scraps • Compostable Fibers • Compostable To-Go Food Containers • Compostable Beverage Cups 	<p>Other Recoverables:</p> <ul style="list-style-type: none"> • Yard Debris • Construction Debris • Rigid Plastics • Rigid Plastic To-Go Food Containers • Rigid Plastic Cold Beverage Cups • Plastic Film • Reusable Office Supplies • Expanded Foam Polystyrene (blocks, peanuts, and sheets) • E-waste • Batteries • Compact Discs • Liquids 	<p>Non-recoverables:</p> <ul style="list-style-type: none"> • Textiles • Poly-coated Beverage Cups • Poly-coated To-Go Food Containers (non-compostable and non-plastic) • Soap • Restroom Waste • Non-recyclable Materials
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The twenty-seven material categories above can be viewed as four general types of categories 1) Recyclables, 2) Compostables, 3) Other Recoverables and 3) Non-recoverables. The terms “recyclable,” “compostable,” and “other recoverable” refer specifically to a material’s ability to be recycled, composted, or recovered by other means, in the current diversion programs on the PSU campus.

In this report, three of the material categories were grouped as a “To-Go Containers” category and includes Compostable To-Go Food Containers, Rigid Plastic To-Go Food Containers, and Poly-coated To-Go Food Containers. Additionally, the three material categories of Compostable Beverage Cups, Rigid Plastic Cold Beverage Cups and Poly-coated Beverage Cups were grouped together as “To-Go Cups,” in order to accentuate their potential for reduction on campus. It should be noted that each of the three types of

containers or cups belong to the Rigid Plastics, Compostables, or Non-Recoverables categories elsewhere in the report.

Figures 4 and 5 below present a visual representation of the sorted materials. The waste sort was performed in two rounds due to the limited number of bins and available space for sorting. Materials that were too large to fit into a bin were included with other materials of that category and are featured in the photo outside of the bins.



Figure 4. Organized Material Categories: Round 1



Figure 5. Organized Material Categories: Round 2

Section 3: Findings

Findings and recommendations resulting from the waste sort are cited in terms of weight in pounds. Lighter materials such as plastic film, Styrofoam, and coffee cups can represent a large percentage of volume in the waste stream, however, when considered by weight alone these materials may not appear as a significant component of the load. Please refer to the photos in Section 6 for visual examples.

Table 1 and Figure 6 present the weight according to the four types of material categories outlined in the methodology. According to the data, 36% of the landfill-bound waste consists of compostable food and fibers. By combining the compostable materials (36%) and the readily recyclable materials (13%), a total of almost 50% of the landfill-bound waste could be recovered and/or diverted through PSU’s standard recycling practices, and by expanding compost collection throughout all buildings. An additional 20% of the landfill-bound waste could be recovered if PSU were to expand its recycling and recovery systems to make it easier to divert the items in the “Other Recoverables” category. The materials could be targeted by offering a more user-friendly system of collection for plastic film, rigid plastics, e-waste, batteries, and printer toner across the entire PSU campus and by promoting building-specific practices for capture of office reuse materials. Further elaboration into this strategy can be found in Section 5: Recommendations.

MATERIALS	LANDFILL BOUND WASTE	
	LBS	%
RECYCLABLE	86.70	13%
COMPOSTABLE	251.06	36%
OTHER RECOVERABLES	139.27	20%
NON-RECOVERABLES	213.08	31%
Total Waste Sample	690.11	100%

Table 1. General Waste Composition by Weight

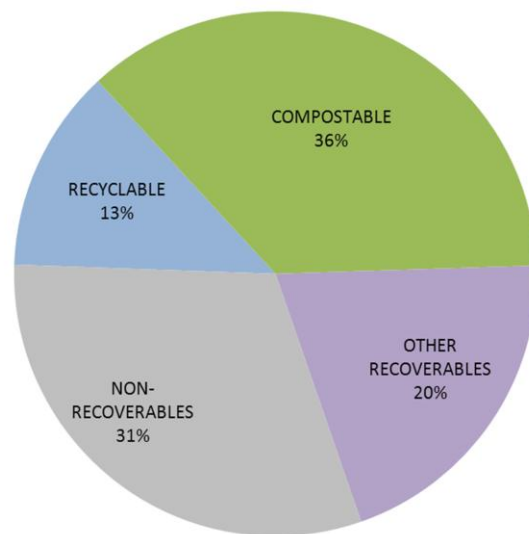


Figure 6. General Breakdown of Waste

Table 2 and Figure 7 present the landfill-bound waste according to the specific material categories. Figure 7 presents the category of “Materials Outside of the Diversion Program” as stratified to assess potential materials for additional diversion programs where none currently exist at PSU. All tables and figures present the data as a comprehensive waste stream that is representative of the PSU campus as a whole. Percent variances are due to rounding.

PSU WASTE AUDIT DATA

	MATERIALS	LANDFILL BOUND WASTE	
		lb	%
READILY RECYCLABLE AND RECOVERABLE	MIXED PAPER	37.36	5%
	CARDBOARD	5.51	1%
	METAL CONTAINERS	12.14	2%
	PLASTIC BOTTLES & TUBS	13.97	2%
	GLASS BOTTLES & JARS	17.72	3%
	COMPOSTABLE FOOD SCRAPS	172.68	25%
	COMPOSTABLE FIBERS	68.34	10%
	COMPOSTABLE TO-GO FOOD CONTAINERS	5.18	1%
	COMPOSTABLE BEVERAGE CUPS	1.88	0.3%
OTHER RECOVERABLE MATERIALS	RIGID PLASTICS	7.78	1%
	PLASTIC TO-GO FOOD CONTAINERS	23.66	3%
	PLASTIC COLD BEVERAGE CUPS	5.17	1%
	PLASTIC FILM	43.44	6%
	PLASTIC PAPER TOWEL DISPENSER	5.69	1%
	OFFICE REUSE	8.13	1%
	EXPANDED FOAM	1.95	0%
	BATTERIES	0.33	0.0%
	CDS	3.46	0.5%
	E-WASTE	24.93	4%
	LIQUID	13.65	2%
	YARD WASTE	2.98	0%
NON-RECOVERABLE MATERIALS	NON-RECYCLABLES	109.30	16%
	RESTROOM WASTE	66.12	10%
	POLYCOATED TO-GO FOOD CONTAINERS	5.15	1%
	POLYCOATED BEVERAGE CUPS	28.04	4%
	SOAP	1.08	0%
	TEXTILES	4.47	1%
Total Weight of Landfill-bound Waste Sample		690.11	100%

Table 2. Specific Material Waste Composition by Weight

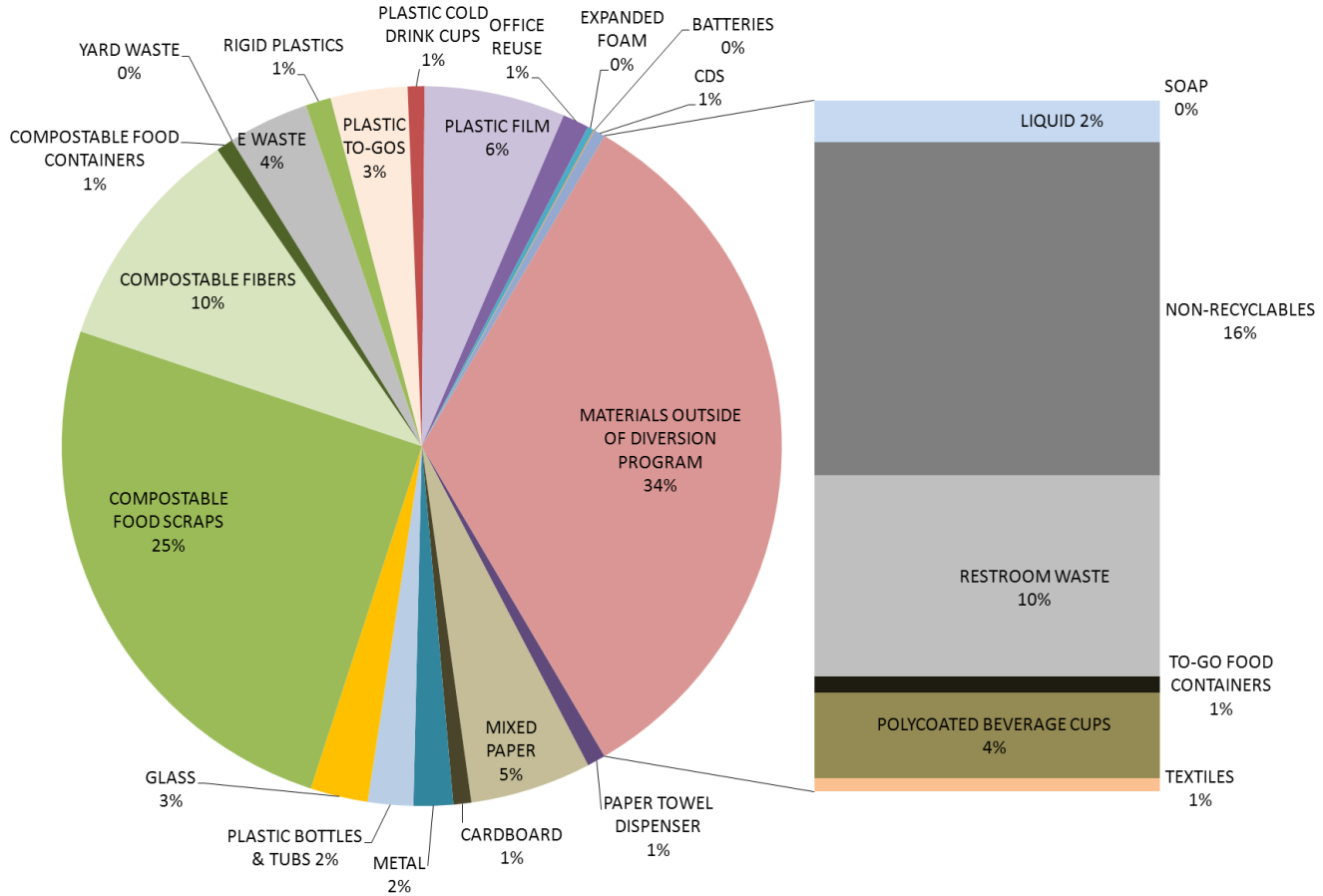


Figure 7. Specific Landfill-Bound Waste Categories

Figure 8 presents the generalized material composition with a specific break-out of the combined “To-Go Containers” and “To-Go Cups”.

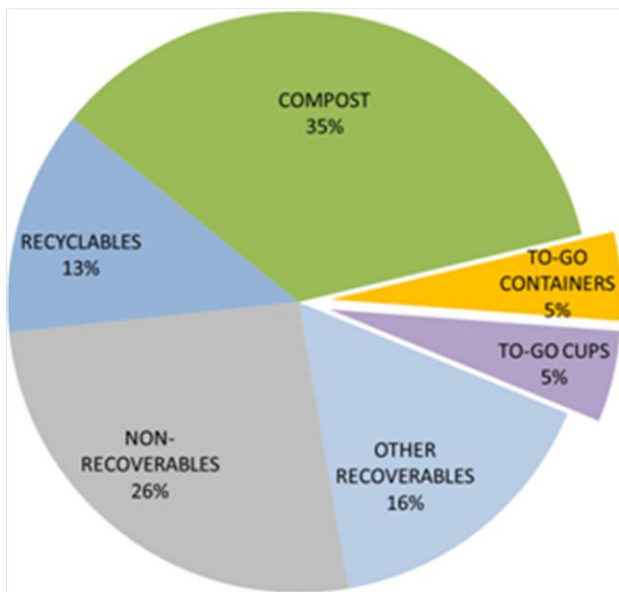


Figure 8. To-Go Cups and To-Go Containers as Combined Categories

The three material categories that were grouped as “To-Go Containers” include “Compostable To-Go Food Containers”, “Rigid Plastic To-Go Food Containers”, and “Poly-coated To-Go Food Containers”. The three material categories that were grouped together as “To-Go Cups,” include “Compostable Beverage Cups”, “Rigid Plastic Cold Beverage Cups,” and “Poly-coated Beverage Cups.” It should be noted that each of the three types of containers or cups belong to either the Rigid Plastics, Compostables, or Non-recoverables categories elsewhere in the report; for this reason the Compost, Other Recoverables, and Non-recoverables categories are effected in their percentages in Figure 8. Together, these materials totaled to 69 pounds, or 10% of the entire waste sample, exhibiting a significant potential for

reduction on campus. The potential is further recognized when the materials are considered in terms of volume, since their percentage by weight would be considerably higher.

Section 4: Observations

The following qualitative observations were made in addition to the qualitative data gathered from the sort:

1. An abundance of compostable materials appearing to originate from kitchens and back-of-house activities was observed in the waste stream (Figure 4.1 and 4.4 to 4.5).
2. Landfill-bound bags originating from individual rooms at University Place contained commingled recycling materials. Evidence that guests want to recycle, have items for recycling, and are without access to recycling collection or drop-off was identified in the guest room bags (Figures 4.2 and 4.3).
3. Multiple bars of hotel soap and full or partially full shampoo bottles were discovered in the landfill-bound waste (Figure 4.7).
4. Trash bags originating from the Smith Food Court vendors were observed to contain mostly divertible materials, including recyclable metal cans from back-of-house activities, milk cartons, and compostable fruits and veggies from food preparation.
5. Large green bags originating from Chipotle contained food

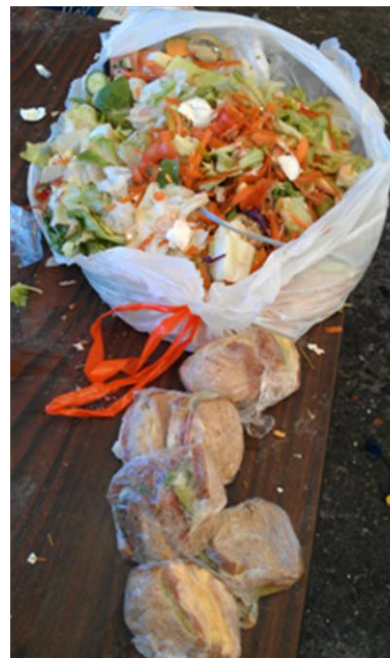


Figure 4.1 Compostable Materials



Figure 4.2 Guest Room Recycling

scraps, compostable fibers, and post-consumer trash.

Approximately 90% of the bagged materials appear to have resulted from back-of-house food preparation activities (Figure 4.5).

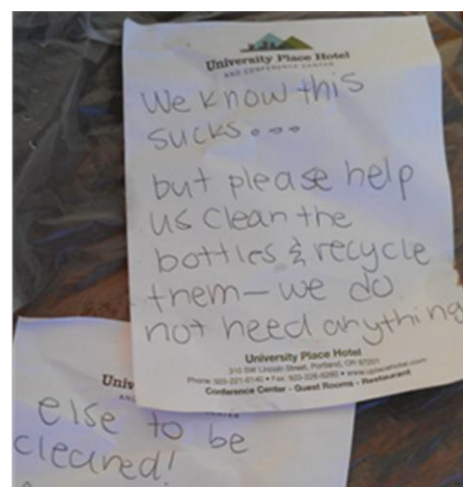


Figure 4.3 Guest Note on Recycling

6. A microwave and a plastic paper towel dispenser were discovered in the landfill-bound waste, despite the diversion work order system in place at PSU for recycling both items (Figure 4, page 8).
7. Multiple bags from Smith Food Court held a mix of post-consumer trash and compostable food scraps (Figure 4.6).



Figure 4.4 Back-of-House Compost



Figure 4.5 Chipotle Back-of-House



Figure 4.6 Smith Food Court



Figure 4.7 Sort in progress with bar soaps on table

Section 5: Recommendations

After analysis of the data, CES recommends the following:

COMPOST

Compostable materials accounted for 36% of the campus' total landfill-bound sample. To reduce this amount, continue to provide internal compost collection containers to any departments/units requesting them through a work order, continue to provide access to free compostable bags and liners, and implement the following eight suggestions:



1. Reestablish the former compost collection route for offices, which was serviced by PSU Recycles staff; and provide technical assistance to increase participation in composting across campus.
2. Expand the current post-consumer compost collection program on campus to include multiple food service locations; glean insight from Food For Thought's long-running compost program on proper composting practices for post-consumer collection.
3. Target on-campus tenants and vendors specifically for pre-consumer/back-of-house compost capture:
 - Provide signs in all current PSU back-of-house kitchen compost operations to inform staff/employees on what can be composted and what are excluded materials.
 - Inform all food service tenant/vendors that are not composting, about their external compost container location and use; and introduce them to composting system basics.
 - Conduct periodic visits to tenant/vendors that are participating in composting.
4. Explore Resource Management providing general outreach, including compost education to staff, students, tenants, and vendors, but also:
 - Direct outreach to tenants/vendors on PSU campus as outlined in Recommendation 3 above.
 - Direct outreach to DIY/office locations with internally collected compost containers.
 - Provide outreach for PSU events that are catered or non-catered, but generate food scraps; including outdoor events.
5. Contracts:
 - Add post-consumer/public food service areas compost collection to custodial service contracts.

- Consider establishing contractual language with janitorial service providers for compost collection from offices.
 - Set catered-event contract requirements with caterers on campus (such as Aramark) for collection of compost and disposal of the compost to include buildings other than Smith only.
6. Establish catering contracts and food service guidelines for all university-supported events including Aramark or outside-catered events; with requirements of:
- Durable food service ware or City of Portland Composting Program-approved compostable food service ware.
 - Non-allowance of disposable container catering, such as lunches in rigid plastic or poly-coated containers.
 - Ensure the caterer will deposit compost into provided containers.

RECYCLING

Continue to improve the collection of recyclable materials such as corrugated cardboard, mixed paper, plastic bottles and tubs, aluminum, steel, and tin cans, and glass bottles and jars, as these materials comprised a total of 13% of the waste sample (Figures 6.1 to 6.5).

Campus-specific:

1. Make campus recycling a required topic for new student orientations, new faculty and staff orientations, and all campus tours.
2. Provide periodic in-service recycling training to janitorial service staff, current staff, faculty, and new employees or students that may have missed the initial orientations.
3. Provide signs in each collection area and ensure that all landfill-bound containers are “buddied up” or “paired up” with commingled recycling collection containers. This will help prevent recyclable materials from being deposited into the landfill-bound receptacle due to the lack of the proper recycling container being present.
4. Ensure that all events, including athletics, have commingled recycling.

Retail, tenant, and vendor recycling outreach:

1. Provide tailored assistance to the University Hotel:
 - Work with the General Manager and Housekeeping Supervisor in initiating an in-room recycling program for guests and updating any public recycling areas.
 - Encourage switching from individual soaps and shampoos to liquid soap dispensers.

- Explore a partnership with PSU Food Pantry to donate unused bar soap and shampoos, investigate where used bar soap can be directed to.
2. Continue “All in the Hall” efforts by ensuring that “pairing up” of all landfill-bound waste containers, both internal and external, with commingled recycling collection containers is taking place. This will help prevent recyclable materials from being deposited into the landfill-bound receptacle due to the lack of the proper recycling container being present.
 3. Invest in standardizing the PSU commingled recycling collection containers by providing Mid-Point stations for “All in the Hall” efforts as well as centralized areas in offices and departments.
 4. Through establishing the quality control route, apply new stickers (“garbage only” and “commingle recycling”) to any containers with fading or obstructed stickers, to ensure proper disposal and prevent confusion and contaminants as commingle recycling stickers usually list the materials accepted.
 5. Provide educational posters to tenant/vendors on the common contaminants often thrown into the commingled recycling such as coffee cups, napkins, tissue paper, and unacceptable plastics. These materials contaminate the recycling load and reduce the quality of the recycled product.
 6. Include language in the tenant lease agreements that require or encourage recycling and composting collection. Provide assurance to new tenants that PSU and property management will give full support to their sustainability efforts.

OTHER RECOVERABLES:

The combined category of “Other Recoverables” accounted for 20% of the landfill-bound waste. To reduce the presence of these materials in the landfill-stream, CES suggests the following:

1. Target plastic film, rigid plastics, e-waste, batteries, and printer toner for increased recycling recovery:
 - Offer a more user-friendly “Other Recoverables” system across the entire PSU campus and providing noticeable drop-off sites or online, easily accessible resources for potential users (Figures 6.15 to 6.17).
 - Establish and promote an annual E-waste recycling event in April to prevent employees from throwing away electronic materials (microwave in Figure 4).
2. Raise awareness on the materials being directed to the PSU Reuse Room:



- Promote building-specific practices across campus for capturing office materials, such as each unit/department has a collection area that is transported to the Reuse Room on a periodic basis.
 - Ensure visits to the Reuse Room on campus tours and for staff or new student orientation.
 - Explore further promotion of the Reuse Room, which could draw additional volunteer-staff and offer the opportunity for expansion to include a book exchange or free library area.
3. Continue to perform staff, retail, tenant, and vendor outreach:
- Encourage vendors to participate in a reusable to-go container program (such as Go Box) to reduce the amount of disposable food containers.
 - Encourage vendor/retail/tenants to explore recycling options through Recycle at Work program for materials such as plastic film and rigid plastics (Figures 6.15 to 6.17)
 - Provide training to contractors, janitorial service staff, and the Facilities Department on recycling of building maintenance materials. An example of such materials includes the microwave, plastic paper towel dispenser, and ceiling tiles found in the waste (Figure 4). The combined weight of the microwave and paper towel dispenser alone accounted for 5% of the entire waste sample.
 - Styrofoam is difficult and expensive to recycle and is a material that should be avoided for environmental purposes. It also takes up a large amount of volume in the landfill-bound loads. Work with relevant custodial and purchasing staff to reduce PSU's use and indirect purchase of this material (Figure 6.16).
 - Promote and expand the current a hard-plastics collection system, establish a collection route with a hauler, increase campus educational outreach for collection of rigid plastics (Figures 6.6 and 6.15).
4. Consider bulk enhanced-water system for athletics, such as Gatorade fountain machine, in order to reduce the quantity of liquids in the landfill-bound waste.

NON-RECOVERABLES:

The materials in the general category of “Non-recoverables” accounted for 31% of the landfill-bound waste. To reduce the presence of these materials, CES suggests the following:

1. Restroom Waste:
 - Explore the option of providing high-efficiency hand dryers to supplement



paper towel usage in restrooms. Currently, restroom waste makes up approximately 10% of the campus' landfill-bound waste stream.

- In conjunction with hand dryer installation, post stickers or specially designed permanent signage that read “These Come from Trees” or “Please Conserve” on paper towel dispensers. The “These Come from Trees” stickers can save up to 100 pounds of paper every year, reduce the amount of janitorial effort in restrooms, and cost \$19 for a pack of 100 stickers. More information on how to purchase the stickers can be found at <http://thesecomefromtrees.blogspot.com/>
2. To-Go Cups and To-Go Containers (Figures 6.6, 6.11 to 6.15):
 - Initiate a campus-wide campaign to “kick the container” and use durable reusable to-go containers in place of poly-coated disposable food containers on campus and at nearby food carts.
 - Incentivize the use of reusable mugs and tumblers for hot and cold drinks through campus-wide campaigns and mug drives.
 - Create more durable service ware options around campus (e.g. mug/cup board at PCC, Go Box project at select Portland west side food carts pods).
 - Address disposables by setting an annual PSU goal for reduction in purchases.
 3. Research and create a diversion practice for textiles and hotel goods; coupling this with the University Place outreach in regards to soaps and basic recycling.

Waste Reduction:

In addition to the above recommendations, CES suggests the following strategies for overall material waste reduction:

➤ **Create a Green Scene:**

On the premise of the Green Screen that is located in the Smith lobby, which is an interactive dashboard that allows visitors to see real-time water and energy use for the building, the Green Scene would feature each building's waste and diversion data across campus to promote sustainability awareness and resource stewardship.

➤ **Hydration Stations:**

Promote more Hydration Stations for refilling reusable water bottles in order to reduce plastic waste from disposable water bottles and wasted water from disposable water bottles. Plastic water bottles and the liquid from them made up almost 4% of the PSU landfill-bound waste sample.

Section 6. Waste Sort Photos



Figure 6.1 Sorted Containers



Figure 6.2 Sorted Glass



Figure 6.3 Sorted Cardboard



Figure 6.4 Sorted Mixed Paper



Figure 6.5 Sorted Mixed Paper



Figure 6.6 Sorted Plastic Drink Cups



Figure 6.7 Sorted Food Scraps



Figure 6.8 Sorted Compostable Fibers



Figure 6.9 Sorted Food Scraps



Figure 6.10 Sorted Textiles



Figure 6.11 Sorted Compostable To-Go's



Figure 6.12 Sorted Non-Compostable/Non-Plastic To-Gos



Figure 6.13 Sorted Poly-Coated Drink Cups



Figure 6.14 Sorted Hot Drink Cups



Figure 6.15 Sorted Plastic To-Go's



Figure 6.16 Sorted CDs and Styrofoam



Figure 6.17 Sorted Plastic Film



Figure 6.18 Sorted Office Reuse

Section 7: Glossary of Material Categories

- **Aluminum, Steel, and Tin Cans and small Metal** – Containers made of aluminum, steel or tin, including containers for beverages, food, and other materials. Empty aerosol cans, scrap metals in a commingled recycling acceptable small size, and clean aluminum foil are included in this category.
- **Batteries** - Alkaline, button cell, lead acid, lithium ion, magnesium, nickel cadmium, nickel metal hydride, nickel iron, silver oxide, zinc air, and zinc carbon.
- **Compact Discs** – CDs, or Compact Discs made of media plastic. NOT recyclable through Far West Fibers. Media Plastics: CDs, DVDs, tape cases, jewel cases, VHS tapes, and cassette tapes are no longer accepted at Far West or Pride Depot as of 4/8/13.
- **Compostable Food Scraps** – Vegetable, fruit, grain-based food scraps, meat, fish, fat, bones, bread, eggshells, coffee grinds, tea bags, and flowers. This category excludes non-compostable hot drink cups, gable-top or square-shape aseptic cartons, utensils, straws, lids, or bags made of plastic. For a complete list of

accepted materials go to Portland Composts! Website:

(<http://www.portlandonline.com/bps/index.cfm?c=41788&a=111044>)

- **Compostable Food-soiled Fibers** – Paper fibers contaminated with food including coffee filters, soiled napkins, soiled paper bags, pizza boxes, waxed corrugated cardboard, wood toothpicks without frills, chopsticks, coffee stir-sticks, wood boxes from cheese rounds and approved compostable food service-ware products that meet the guidelines set by Cedar Grove Composting (www.cedar-grove.com/acceptable/acceptedlist.asp, ASTM, and BPI. This category excludes non-compostable hot drink cups, gable-top or square-shape aseptic cartons, utensils, straws, lids, or bags made of plastic. For a complete list of accepted materials go to Portland Composts! Website: (<http://www.portlandonline.com/bps/index.cfm?c=41788&a=111044>)
- **Construction Debris** – Concrete, drywall, sheetrock, and wood boards, scraps, pallets, crates, branches, and other wood products.
- **Corrugated Cardboard** – Corrugated cardboard boxes or sheets used for shipping and packaging materials.
- **E-Waste** – Discarded electronics such as central processing units (CPUs), monitors, televisions, cell phones, microwaves, radios, printers, fax machines, cords, and related electronic office equipment.
- **Expanded Foam Polystyrene** - Expanded polystyrene plastic block, sheets, and peanuts. Also known as “Styrofoam,” these materials in block form are accepted at Pacific Land Clearing, Far West Fibers, or Total Reclaim; and in peanut and sheet form are accepted at many local mailing facilities. This category excludes expanded foam trays such as used for meat packaging.
- **Glass Bottles and Jars** – Containers made of glass; shaped in bottles or jars. This category excludes light bulbs, flat glass, flower vases, drinking glasses, and tempered glass such as baking dishes.
- **Lighting** - Light bulbs and tubes that are straight fluorescent, UTube/compact/Biax/Par, HID/mercury, metal halide, low/high pressure sodium, coated or shatter shield, ultraviolet/germicidal or incandescent.
- **Liquid** – Any liquids found in the waste, generally water and other beverages from bottles, jars, and cups.
- **Metals** – Large metal scrap and metals items, such as file cabinets that cannot be accepted in the commingled recycling system due to size.
- **Mixed Paper** – Paper products including office paper, newspaper, magazines, phonebooks, paper board/soft cardboard, folders, scrap paper, sticky notes, shredded paper, paper bags, paper towel egg cartons, cereal boxes, and all other non-corrugated cardboards. This category also includes aseptics such as gable-top milk and juice cartons and square-shaped cartons often used for soups or soymilk and sometimes branded as Tetra-pak.
- **Non-Recoverables** – Materials that cannot currently be recycled through most commercial haulers, local recycling facilities, or a partnership system; and materials that cannot be composted through local composting facilities. Products that are a paper-plastic embedded combination such as frozen food boxes, beverage bottle holders for six to 24 packs, ice cream containers, paper coffee cups; and products that are plastic lined such as the paper coffee cups and other food service ware that are used as “to-go” containers. Receipts printed on thermal paper, any plastic film or rigid plastics that are heavily contaminated with food or non-food residues, waste related to restroom activities, any durable goods that are broken and irreparable, liquids, soiled fabrics that are unfit for donation. Stickers and sticker backing, candy wrappers, chip bags, gloves (poly and vinyl gloves), rubber mats/sheets, rubber fruit protectors, broken dishware, ceramics, Styrofoam that is not recyclable such as meat trays, PVC gift & scrip cards, “Compostable” or “biodegradable” bioplastic not

approved for composting in local facilities, and PVC fruit tray packs. These materials are also known as “true waste” because there are currently no recycling markets for the materials or they are not readily recycled.

- **Plastic Bottles and Tubs** – Plastic containers with a neck, including containers for beverages, other fluids; plastic tubs of primarily food grade plastic often used for yogurt, margarine, and other food or non-food materials, that are 6 ounces or larger. Plant pots larger than four inches, and plastic buckets smaller than five gallons are also included. This category includes bioplastics that are made from plant-based resins (plant based PET), such as the “Plant bottle”. This category excludes bioplastics that are biodegradable and all other plastic products labeled as “biodegradable.”
- **Plastic Film** - Plastic film and plastic film bags including shopping, grocery, and sandwich bags; also includes shrink wrap, pallet wrap, bubble wrap, air packaging pillows, and plastic films. Additional items included in this category are six-pack plastic rings and plastic Onion/potato mesh bags. Excluded from this category are bioplastics, soft/stretchy film such as Saran wrap, and any soiled or contaminated film.
- **Poly-coated Beverage Cups** - Non-durable drink cups of mixed materials, generally paper-plastic embedded combination and often plastic-lined. Non-recyclable and non-compostable; and used to serve coffee, water, tea, soda, juice or other cold beverages. Generally labeled as disposable and intended for “single use.”
- **Restroom Waste** – Bathroom paper towels, and other restroom related items.
- **Reusable Office Supplies** – Lightly used office supplies and equipment such as furniture, tools and durables that can be reused through donation or by in-house programs.
- **Rigid Plastics** - Plastic tub lids, plastic drink bottle lids, plastic caps, coffee cup lids, plastic green berry/tomato boxes and asparagus boxes, plastic freight strapping, clean plastic straws, plastic register tape rolls, rigid mini four-pack beer tops, lamination scrap, and other plastic consumer durables.
- Non-necked shaped bottled plastic #1 thru #7, nursery pots, tubs, buckets, trays, plastic toys, and hard plastics ARE NOT ACCEPTED AT FAR WEST FIBERS AS OF 4/8/13
- **To-Go Food Containers of Plastic** – Plastic clamshell containers used to hold food.
- **To-Go Food Containers** - Non-compostable and non-plastic clamshell containers used to hold food, most likely plastic-paper embedded and/or paper with plastic lining.
- **Textiles** – Fabric, materials, made from organic and non-organic sources (cotton, nylon, wool, rayon, etc.)
- **Yard Debris** – Landscaping debris such as woody stems and branches, leaves, grass clippings, and other organic materials generated in the activity of grounds keeping.

Appendix A: PSU Buildings’ Usage Types by Square Foot

PSU Campus-wide Waste Sort Buildings Assessed		
State No.	Abrv.	Building Name
254	BHB	THE BROADWAY
018A	SMSU	SMITH MEMORIAL STUDENT UNION
B0025	SH	SHATTUCK HALL AND ANNEX
B0023	EH	EAST HALL
036A	FAB	FOURTH AVENUE BUILDING
B0034	HOFF	GEORGE C. HOFFMANN HALL
250	KHSE	KOINONIA BUILDING
B0008	ED	GRADUATE SCHOOL OF EDUCATION
B0038	EB	ENGINEERING BUILDING
B0003	SB1	SCIENCE BUILDING ONE
042	SEH	STEPHEN E. EPLER HALL
009	BA	SCHOOL OF BUSINESS ADMINISTRATION
037	URBN	URBAN CENTER (URBN)
B0099	SBH	SIMON BENSON HOUSE
B0005	SRTC	SCIENCE RESEARCH AND TEACHING CTR.
106	KNGA	KING ALBERT BUILDING
B0022	ML	BRANFORD PRICE MILLAR LIBRARY
202	UP	UNIVERSITY PLACE (UP)
006B	USB	UNIVERSITY SERVICES BUILDING (USB)
013	HGDC	HELEN GORDON CHILD DEV. CENTER
B0022	ASRC	ACADEMIC AND STUDENT REC. CENTER

USAGE TYPE BY SQ FT

Percent of PSU Use Type - Scenario #2

		Waste Sort Buildings	PSU Actual	Difference
Circulation	419,578	20%	17%	3%
Mechanical	116,155	6%	4%	1%
Building Services	35,133	2%	1%	0%
Off-line	-	0%	0%	0%
Service Areas	45,747	2%	2%	0%
Classroom Facilities	81,572	4%	4%	0%
Classroom Lab Facility	89,500	4%	3%	1%
Non-class Lab Facility	124,795	6%	3%	3%
Office Facility	255,704	12%	11%	1%
Study Facility	118,531	6%	3%	2%
Special Use Facility	13,421	1%	2%	2%
General Use Facility	291,536	14%	9%	5%
Support Facilities	223,108	11%	26%	16%
Healthcare Facilities	-	0%	0%	0%
Residential Facilities	250,378	12%	11%	1%

TOTAL PSU SQ FT Assessed 2,065,158 **100%** **100%** **35%**

PSU % Sq Ft Assessed **46%**

Total PSU Campus Sq Ft 4,523,070