

*Environmental Health & Safety*

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**PROCEDURES**  
**FOR THE**  
**DISPOSAL OF LAMPS & BALLASTS**

**I. INTRODUCTION & REGULATORY BACKGROUND**

Environmental Health & Safety (EHS) has developed the following procedures for the safe, environmentally responsible disposal of used mercury containing light bulbs (lamps) and light ballasts (both Polychlorinated Biphenyl (PCB) and non-PCB containing) generated on Towson University (TU) owned property. This policy encompasses the appropriate procedures from the US Environmental Protection Agency (EPA) and the Maryland Department of the Environment (MDE). All waste lamps and ballasts are shipped off-campus for recycling in an environmentally responsible manner in compliance with all applicable regulations.

Mercury containing lamps and fluorescent light ballasts (both PCB & Non-PCB containing) are regulated as Universal Wastes under federal and state hazardous waste regulations.

There are strict penalties for the improper disposal of mercury containing lamps and light ballasts. Mercury containing lamps and light ballasts will not be disposed of via domestic waste disposal channels. Any fines, penalties or remediation costs resulting from improper lamp or ballast disposal will be the generators responsibility.

**II. PURPOSE**

The purpose of this document is to ensure the safe and environmentally responsible disposal of all regulated lamps and light ballasts generated on Towson University property by University employees and Contractors.

### ***III. RESPONSIBILITIES***

#### **A. Facilities Management/University Contractors/Employees**

1. Generators are responsible for the proper collection, packaging, labeling and short-term storage of waste lamps and ballasts generated from campus maintenance or construction/renovation activities in preparation for on-campus transportation for recycling/disposal.
2. Generators are responsible for contacting the appropriate campus organization via email for scheduling pickup and disposal from campus buildings or jobsites:
  - A. ***LAMPS***: Contact Campus Recycling ([recycling@towson.edu](mailto:recycling@towson.edu)) to request disposal of accumulated waste lamps or for empty lamp storage fiber tubes.
  - B. ***LIGHT BALLASTS***: Contact Environmental Health & Safety (EHS) ([safety@towson.edu](mailto:safety@towson.edu)) to request disposal of accumulated ballasts or for empty waste ballast drums.
3. Container and disposal costs for waste lamps and ballasts from campus construction and renovation projects will be back-charged to the Project.

#### **B. Campus Recycling**

1. Responsible for all day-to-day lamp recycling operations to include the proper collection and transportation of accumulated waste lamps from the point of generation to the Landscape Services Building (LSB).
2. Responsible for the safe, proper storage of all lamps collected pending crushing and all containers of crushed lamps at the LSB pending off-campus disposal.
3. Responsible for the safe operation of the lamp crusher and maintaining cleanliness of crusher area at LSB.
4. Responsible for the proper packaging, labeling and storage of crushed lamp drums pending off-campus disposal by EHS.

- C. Environmental Health & Safety
  - 1. Responsible for the management and oversight of the campus Lamp Recycling Program (LRP).
  - 2. Responsible for ballast disposal operations to include the collection and transportation of properly packaged accumulated ballasts.
  - 3. Responsible for the off-campus disposal of recycled lamps and ballasts.

#### IV. LAMPS

##### A. *Regulated Lamps*

The following lamp types are regulated for disposal and will be collected for recycling:

- 1. Fluorescent Light Bulbs (all sizes & types)
- 2. Compact Fluorescent Light Bulbs (all sizes & types)
- 3. High Intensity Discharge (HID)
- 4. Mercury Vapor
- 5. High Pressure Sodium
- 6. Metal Halide

Contact EHS for disposal guidance for lamps not listed above.

##### B. *Non-Regulated Lamps*

Incandescent and halogen bulbs typically do not contain mercury and may be safely disposed of via traditional domestic waste disposal channels.

##### C. *Safe Lamp Handling, Packaging & Labeling*

- 1. Safe Lamp Handling and Packaging
  - a. All lamps will always be handled to minimize breakage.
  - b. Loose lamps will be segregated by type and stored and transported in closed DOT approved cardboard tubes (in photo below). Only containers in good condition will be utilized for storage of recycled lamps. Fiber tubes should only be used with lids.



To prevent accidental breakage, lamps will not be accumulated, stored or transported loose or taped into bundles.



- c. Any broken lamps will be immediately cleaned up using techniques that will minimize dust production and the debris placed into a separate leak proof container specifically for the collection of broken lamps. (See Attachment 2) No trash or other debris will be placed into these containers. Broken lamp containers will be labeled as required below.

- d. Lamp recycling tubes for campus construction and renovation projects are available from Campus Recycling ([recycling@towson.edu](mailto:recycling@towson.edu)). Please allow five (5) business days for delivery.
- e. ***Improperly packaged lamps will not be collected for recycling/disposal. It will be the generator's responsibility to repackage waste lamps so that they may be safely transported.***

2. Lamp Container Labeling

- a. Each recycled lamp tube or broken lamp container will be labeled with a TU Universal Waste Lamp Label (shown below) available from EHS at (410) 704-5500 or [safety@towson.edu](mailto:safety@towson.edu) ). The label shall be placed onto the container in a conspicuous location and the date the first waste lamp is placed into the container recorded in the “Container Start Date”.



- b. Tubes for construction/renovations projects will have TU Universal Waste Lamp Labels already attached and the “Container Start Date” will be the date of delivery.

**D. Temporary Storage**

1. Waste lamps may only be stored in closed packages that show no evidence of leakage, spillage or damage.
2. Store waste lamp containers in dry locations away from public access and do not allow to become wet.
3. Waste lamps may be accumulated at the point of generation for up to one (1) year from the date of discard. Waste lamps accumulated for more than one (1) calendar year should be immediately disposed of by emailing Campus Recycling ([recycling@towson.edu](mailto:recycling@towson.edu)).
4. Waste lamps do not require secondary containment devices (SCD's).

**E. Waste Lamp Disposal**

1. Once several boxes/tubes of waste lamps have been accumulated in campus buildings or upon construction/renovation project completion contact Campus Recycling via email ([recycling@towson.edu](mailto:recycling@towson.edu)) to have them picked up for recycling. Please allow five (5) days for pickup. This request should include the number of containers to be collected and if any additional empty containers are required.
2. Full lamp tubes should be centrally located in one, weather protected location easily accessible with a hand cart.
2. All waste lamp disposal pickup requests must be in writing via email. **No verbal or telephonic requests will be accepted.**

**F. Waste Lamp Disposal Costs**

1. Disposal costs for waste lamps from campus construction or renovation projects will be back-charged to the Project. Estimate disposal costs are shown in Attachment 1. Contact EHS for current waste disposal fees.
2. Lamp tubes are delivered complete with lids. Full tubes without lids are considered damaged and not reusable. Campus construction projects will be charged for damaged or missing tubes.

3. Waste lamps from routine campus building maintenance activities are exempt from back-charges.

## V. LIGHT BALLASTS

### A. Safe Ballast Handling, Packaging & Labeling

#### 1. Safe Ballast Handling & Packaging

- a. Ballasts will always be handled to minimize leakage.
- b. Ballasts will be individually inspected and sorted into one of the two following categories listed below. Each type of ballast will be packaged separately.
  1. **PCB Containing:** If the ballast was manufactured prior to 1979 or does not clearly indicate “NO PCB’s” on the ballast it will be considered to be PCB containing. Drums containing these ballasts will be identified as “PCB Containing Ballasts”.
  2. **Non-PCB Containing:** Ballast label clearly states “No PCB’s”. These ballasts will be collected for off-campus recycling. Drums containing these ballasts will be identified as “Non-PCB Containing Ballasts”
- c. Ballasts will only be accumulated in properly labeled DOT approved 30 or 55 gal steel drums. Only non-leaking drums in good condition will be utilized for the storage of ballasts. Approved drums are available from EHS at (410) 704-5500 or [safety@towson.edu](mailto:safety@towson.edu). Please allow five (5) business days for delivery.



- d. To increase drum capacity, clip all ballast wires before placing ballasts into drum.
- e. Ballast drums will be kept closed and tightly sealed at all times except when adding ballasts to the drum. When drums are full or no longer needed, drum rings should be bolted tight.

**CAUTION:**

*Full waste ballast drums are extremely heavy and should never be handled by just one person. Full drums must be tightly sealed before being moved.*

2. Labeling

- a. Ballast drums provided by EHS will have the proper labels attached (shown below) and will be dated with the date of delivery. Additional labels are available from EHS.

Towson University, 8000 York Road, Towson, MD 21252

**UNIVERSAL  
WASTE BALLASTS**

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**Container Start Date:**

When full or to request additional containers, contact Environmental Health & Safety at (410) 704-5500 or [safety@towson.edu](mailto:safety@towson.edu).



- b. The “Container Start Date” block will be dated with the date the drum was delivered by EHS.
- c. Indicate on label whether drum contains “PCB Containing” or “Non-PCB Containing” ballasts.

## B. Temporary Storage

### 1. Storage Requirements

- a. Pending collection for disposal, waste ballast drums must be stored in properly labeled, tightly closed drums that show no evidence of leakage, spillage, exterior contamination, deterioration or damage.
- b. Waste ballast drums must be stored out of the weather secured from accidental damage and public access.
- c. Waste ballast drums provided by EHS are lined with 30-mil poly drum liners and do not require secondary containment devices (SCD’s). Unlined drums not provided by EHS will require properly sized SCD’s.

### 2. Accumulation Time Limits

- a. There are no time limits for waste ballast drum accumulated in campus buildings from routine campus building maintenance activities.
- b. Waste ballast drums generated from campus construction/renovation projects should be removed as soon as possible after completion of the project.

## C. Waste Ballast Disposal

- 1. For removal of full drums or partially filled construction/renovation drums no longer needed, contact EHS via email ([safety@towson.edu](mailto:safety@towson.edu)). Please allow five (5) business days for pickup. This request should include the where the drums are located; the number of drums to be collected and if any additional empty drums are required.
- 2. All waste ballast drum disposal requests must be in writing. **No verbal or telephonic requests will be accepted.**

3. Bolt drum rings tight and do not move waste ballast drums from the project areas after project completion pending collection for disposal.
4. Full ballast drums must be centrally located in one, weather protected location easily accessible with a drum dolly.

D. Waste Ballast Disposal Cost

1. Disposal costs for waste light ballasts from campus construction or renovation projects will be back-charged to the Project. See Attachment 1 for estimated fees and contact EHS for current disposal costs.
2. Waste ballasts from routine campus building maintenance activities are exempt from back-charges.

## VI. QUESTIONS

Questions concerning these procedures should be directed to EHS at (410) 704-5500 or [safety@towson.edu](mailto:safety@towson.edu).

cc: Facilities Management

- Roger Hayden
- Kevin Peterson
- Dennis Bohlayer
- Rene Florendo
- Warren Riefner
- Scott Guckert
- Dave Mayhew

Attachment 1

Waste Fluorescent Light Bulb & Light Ballast  
Disposal Fee's

Fluorescent Light Bulbs (FLB's)

- 8 Foot Straight FLB's
  - 8 Ft Fiber Tube (~85 bulbs) \$300.00/fiber tube
- 4 Foot Straight FLB's
  - 4 Ft Fiber Tube (~85 bulbs) \$150.00/fiber tube
- 2 Foot Straight FLB's
  - 4 Ft Fiber Tube (~160 bulbs) \$150.00/fiber tube
- "U" Tube, Circline & Biaxial FLB's \$1.00/fiber tube
- Compact FLB's \$0.50/bulb
- Plastic Coated FLB's (Any Size) \$2.50/fiber tube
- Incandescent/Spot Lamps \$0.50/bulb
- 4 Ft Fiber FLB Shipping Containers (Lost/Damaged) \$75.00/fiber tube
- 8 Ft Fiber FLB Shipping Containers (lost/Damaged) \$100.00/fiber tube

Light Ballasts

- 30 Gal Steel Drum: \$426.00/Drum + \$175.00 Transport & Load Fee
- 55 Gal Steel Drum: \$806.40/Drum + \$175.00 Transport & Load Fee
- 30 Gal Drum, Empty (Lost/Damaged) \$140.00/each
- 55 Gal Drum Empty (Lost/Damaged) \$194.00/each

## Attachment 2

# Cleaning Up a Broken Fluorescent Light Bulb (FLB)

U.S. Environmental Protection Agency June 2010

Fluorescent light bulbs contain a very small amount of mercury sealed within the glass tubing. The U.S. Environmental Protection Agency recommends the following clean-up and disposal steps:

### Before Cleanup: Air Out the Room

- Have people and pets leave the room, and don't let anyone walk through the breakage area on their way out.
- Open a window and leave the room for 15 minutes or more.
- Shut off the central forced-air heating/air conditioning system, if you have one.

### Cleanup Steps for Hard Surfaces

- Carefully scoop up glass pieces and powder using stiff paper or cardboard and place them in a glass jar with metal lid (such as a canning jar) or in a sealed plastic bag.
- Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder.
- Wipe the area clean with damp paper towels or disposable wet wipes. Place towels in the glass jar or plastic bag.
- Do not use a vacuum or broom to clean up the broken bulb on hard surfaces.

### Cleanup Steps for Carpeting or Rug

- Carefully pick up glass fragments and place them in a glass jar with a metal lid or in a sealed plastic bag.
- Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder.
- If vacuuming is needed after all visible materials are removed, vacuum the area where the bulb was broken.
- Remove the vacuum bag (or empty and wipe the canister), and put the bag or vacuum debris in a sealed plastic bag.

### Cleanup Steps for Clothing, Bedding and Other Soft Materials

- If clothing or bedding materials come in direct contact with broken glass or mercury-containing powder from inside the bulb that may stick to the fabric, the clothing or bedding should be thrown away. Do not wash such clothing or bedding because mercury fragments in the clothing may contaminate the machine and/or pollute sewage.
- You can, however, wash clothing or other materials that have been exposed to the mercury vapor from a broken FLB, such as the clothing you are wearing when you cleaned up the broken FLB, as long as that clothing has not come into direct contact with the materials from the broken bulb.
- If shoes come into direct contact with broken glass or mercury-containing powder from the bulb, wipe them off with damp paper towels or disposable wet wipes. Place the towels or wipes in a glass jar or plastic bag for disposal.

### Disposal of Cleanup Materials

- Wash your hands after disposing of the jars or plastic bags containing clean-up materials.
- Contact EHS for the disposal of contaminated cleanup materials as hazardous wastes.

### Future Cleaning of Carpeting or Rug: Air Out the Room During and After Vacuuming

- The next several times you vacuum, shut off the central forced-air heating/air conditioning system and open a window before vacuuming.
- Keep the central heating/air conditioning system shut off and the window open for at least 15 minutes after vacuuming is completed.