**Specific and Measurable Objectives** **for the
2020 Illinois Climate Action Plan: *Zero Waste***

Leon Liebenberg and Robert McKim

1. **What is Zero Waste?**
* Zero Waste is a goal of sending nothing to the landfill or incinerator (including waste-to-energy, pyrolysis, gasification, biomass burners, etc.).
* No Bury, No Burn!
* It is a whole systems approach to materials management.
* Zero Waste includes discard management through recycling and composting, but it also must incorporate waste reduction and environmentally preferred purchasing (EPP) practices. The inputs are just as important as the outputs when designing a sustainable system.
1. **Zero Waste Goals (from the Illinois Climate Action Plan 2015)**
* Going forward, the campus should use a comprehensive Zero Waste Program to prevent waste at all stages of the life cycle of products — from reducing both the quantity and the environmental impact of products that we purchase, to encouraging the reuse of materials on campus, to recycling products that have reached the end of their service life.
* While the existing campus waste management system includes a sorting process to divert recyclables from the landfill waste stream at the campus scale, efforts to increase recycling (both on campus and around the world as students and employees travel throughout their lives) must ultimately rely upon the actions of individuals. Therefore, one of the aspirational goals of the Zero Waste Program is for individuals to take personal responsibility regarding the final destination of their own waste products.
* This program would apply and report waste-related measurements, establish baselines and accountability by campus unit for purchases and waste, implement training programs, and provide incentives.
* To raise awareness of waste reduction goals, this program should be communicated clearly to all academic and non-academic units, employees, and students, including through events and competitions.
* Life-cycle analysis should be used to identify opportunities for improvement, and enforcement measures should be considered and implemented as appropriate.
1. **Objectives (from the Illinois Climate Action Plan 2015)**

The comprehensive Zero Waste Program will include

* sustainable procurement components,
* targeted reuse programs,
* clear recycling education with incentives for participation,
* and specific targets focused on waste minimization.

Therefore, the objectives for waste minimization cover all these aspects. They are:

1. By FY17, environmental standards will be applied to purchases of office paper, cleaning products, computers, other electronics, and freight/package delivery services. At least 50% of purchases in these categories will meet campus standards by FY20, and 75% by FY25.
2. Reduce municipal solid waste (MSW) going to landfills. This involves reducing nondurable goods purchases, effectively reusing materials, and recycling. In the latter category, campus will increase the diversion rate of MSW to 45% by FY20, 60% by FY25, and 80% by FY35, while also increasing the total diversion rate to 90% by FY20 and 95% by FY25. MSW sent to landfills should decline to 2,000 tons annually by 2035.
3. Utilize landfills with methane capture.
4. Appropriately staff Zero Waste efforts through the hiring of a full-time Zero Waste Coordinator.
5. **Context for developing specific and measurable goals
to meet Objectives**
* When transitioning to a Zero Waste campus, it is crucial to think about how the waste is created and how discards are managed.
* A key to having a successful Zero Waste system is for management of waste to be integrated into one central system while reducing and greening inputs through EPP practices.
* A single (integrated) system should be stablished such that the collection of recycling, compostables and waste is all handled by one program.
* A Zero Waste campus would not have any standalone trash cans and desk side service of waste would be eliminated. Thus, office waste collection would become the responsibility of the building occupant, thus eliminating desk-side service of discards. This practice would also create an opportunity for further waste reduction through individual responsibility.
1. **Procedures and Strategies**
* Implement a materials management system to include environmentally preferable purchasing (EPP) and an integrated waste management system.
* The resulting zero waste focus involves the entire campus community including building occupants and campus participants, through the following strategies and procedures:
1. **Campus Zero-Waste Management System**

Creating a culture of zero waste is vital to success of this policy. Establishing a campus zero waste management system is critical to achieving goals of materials management and a zero-waste campus. The system should be complete in managing recycling, composting, reuse opportunities, surplus management, and other discards. The Campus Zero-Waste Management System should be incorporated in the daily operations and business practices in all aspects of routine procedures and public involvement.

The system should be comprehensive and involve all responsible parties in the design, implementation and execution of the system which includes the placement and service of any materials discard receptacles based upon the following strategies:

* Educate all administration, staff and students (starting with new employee orientation and student Introduction) on how materials management and zero waste system works at the University including purchasing, zero-waste resources available for reuse, surplus, handling of confidential materials, handing special wastes and any other waste reduction information.
* Provide mandatory departmental training for updates on zero-waste procedures, what to do when purging an office, handling office materials such as toner cartridges, office supplies and other materials that are non-routine.
* Establish the University expectation of materials management and zero waste, with all campus community, through an annual letter to campus from the Chancelor.
1. **Zero-Waste infrastructure**

Create a culture of zero waste including integrating all parts of waste management into a system instead of separating waste functions from zero waste efforts such as:

* Integrate zero waste (recycling, waste diversion, composting), campus waste management lay-out, solid waste collection, “garbage” dumpsters, surplus properties and reusable office supply into one unit entitled “Campus Zero Waste Program”. House it in Campus Operations within the materials management (or Purchasing/Contracts) division.
* Ensure industrial recycling of all industrial waste produced on campus such as wood, vehicle batteries, scrap metal, wire recycling, concrete, tires and any other items that have a potential local market.
* Purchase only what is needed, avoid over-purchasing; reduce waste produced from campus purchases through purchasing items with reduced packaging and reduced or eliminated waste generated from service contracts; utilize contracting to reduce waste and recovery by creating vendor responsibility for waste production.
* Coordinate efforts with Illinois Environmental Health and Safety (IEHS) and the Illinois Environmental Protection Agency (IEPA) to reduce the amount of hazardous materials purchased and stored on campus; integrate non-toxic alternatives into all campus practices including custodial, research and lab functions.
* Utilize green cleaning and green chemistry materials and strategies in all campus operations and research.
* Eliminate all stand-alone waste receptacles in all campus locations (interior, exterior, and in all athletic and housing facilities).
* Eliminate all waste receptacles in all classrooms. Eliminate large desk side waste receptacles. Replace with zero-waste desk side system. Provide each office with desk-side recycling and composting containers with a side car or mini-trash bin.
* Establish aesthetically pleasing, easy to identify, central zero waste stations throughout campus and available to a minimum of 10 people per department space, in all public areas. Each station should have paper and GMP recycling bins, a small waste receptacle and compost(ables).
* Ensure waste diversion opportunities in all campus areas including mail rooms, copy rooms, break rooms and department kitchens.
* Ensure each housing resident in the residence halls and family housing have in room / unit recycling and compost(ables) collection containers and access to recycling and composting at all central waste stations located on-site.
* Eliminate desk-side collection of waste, recycling and compost(ables); establish individual responsibility to re-locate office materials to central zero waste stations for all campus units.
* Reduce size of all campus waste receptacles; favor zero-waste principles over waste generation.
* Institutionalize zero waste services with all campus catered events, any campus events with food and all athletic events. Ensure these services are included as part of event as opposed to an extra non-essential service offered externally.
* Favor practices that eliminate waste production. Create incentives and default to utilizing durables for all campus catered and food related activities where possible.
* Ensure that all inputs to the waste system meet EPP standards. Require all campus food service inputs to be compostable or recyclable compatible with materials processing.
* Require all compostable inputs to be approved by the Campus Zero Waste Program to ensure compatibility with materials processing systems.
* Require all campus meetings, conferences, events, whether catered or not, to be sustainable events including incorporating zero waste practices and collection, minimization of print materials distribution, ensure all print materials follow University recycled paper policy for type of paper utilized and to default to all double-sided copies, among other sustainability principles.
* Establish procedures and collection opportunities in housing areas and on campus for proper disposal and collection of special wastes for students.
* Issue all new students and employees with reusable tools-refillable water bottles, refillable beverage cups, reusable shopping bags, etc.
* Ensure campus construction projects and campus facilities follow these principles.
* Continue to follow University policies related to EPP, materials management, zero waste and sustainability.
1. **Communication, education, and promotion**

Communication, education, promotion, daily operating instructions and campus expectations are cornerstones of a successful zero waste program. This is especially true for building occupants, i.e. those who are in the building as employees (faculty, staff, student workers, etc.) and whose workday revolves around the physical infrastructure and activities in the building.

These building occupants should be well-educated regarding zero waste procedures, facilities operations and practices. This includes orientation programs for new employees, campus contractors and students.

Effective communication should include:

* Information on campus materials management and zero waste practices to be included in all campus orientation programs for new employees, students and contractors.
* Maintenance of complete and accurate email lists of all building occupants and building managers.
* Designating departmental contacts to serve on a campus list where the materials management and Zero Waste Program can communicate and educate on proper procedures and updates.
* Use of communicative media and staff meetings to convey important zero waste procedures, instructions, and resources to building occupants.
* Encouragement of feedback from building occupants regarding zero waste questions, needs, opportunities, ideas, and suggestions.
* Implementation of a regular campus wide education / promotion / outreach effort on materials management and zero waste including: competitions, webpage, Facebook page, Twitter, Earth Day/America Recycles Day events, reuse workshops, etc.

Similarly, building staff should be alert to the needs of those building users who are not occupants – the students, faculty, professionals, and visitors who may attend or teach classes in or daily visit the building. These people may experience problems related to signage, receptacle placement, material preparation and sorting, etc. – or they may just express an interest in learning more about the University’s zero waste efforts. When problems, needs, or opportunities are identified along these lines, feedback should be sought and conveyed to the appropriate personnel.

Building staff are encouraged to assist in ensuring a successful and effective Zero Waste Program by:

* Assessing the zero-waste infrastructure and procedures as they relate to building visitors and users.
* Assisting visitors and users, as needed, to help them engage in zero waste behaviors.
* Providing feedback on zero waste efforts and infrastructure to building staff, managers, and the Campus Zero Waste Program.
* Instruct and educate occupants about self-servicing of desk-side units to centralized recycling and waste receptacles.
* Provide building users with contacts and procedures for recycling/composting items which are not routinely collected in centralized receptacles (e.g. corrugated cardboard, toner and printer cartridges, Styrofoam cups, non-food and non-beverage metals and plastics, e-media, etc.).
* Provide building users with information on proper handling of confidential materials.
* Provide building users with procedures for recycling items with special disposal requirements (e.g. batteries, fluorescent lights, etc.).
* Educate building occupants about voluntary composting opportunities and encourage participation in the same.
1. **Student collection, material-diversion roundups**

It is important to consider the materials flow in student housing areas as part of campus materials management and zero waste practices. With students occupying campus living facilities and significantly impacting the University waste stream, this policy also applies to all University owned living facilities.

Additionally, with a diverse campus population that includes students without personal transportation and international students who might be unfamiliar with local resources, part of a zero waste campus includes providing opportunities for all students to divert personal items such as electronics (i.e. computers, printers, scanners, televisions, etc.), cell phones, textiles, household goods, appliances (e.g. microwaves, in-room refrigerators, fans), furniture and other items that students bring to campus-owned facilities that often get abandoned and fed into the University waste stream.

As University students live in the nearby and local community, the University has an impact beyond the campus area and thus the University has an opportunity for community-campus partnership to provide for students to divert reusable items at the end of the year in lieu of negatively impacting the local neighborhoods with waste from end of the year moveouts.

The University will provide the following collection opportunities for on-campus and University-owned off-campus housing areas:

* Quarterly reusable collections of electronics, clothing, appliances and any other reusable items. Utilize extensive communication efforts to ensure these are widely publicized and students come to expect quarterly opportunities to divert those products from the landfill.
* End of year moveout effort to capture as much material as possible and ensure that electronics, durables, appliances and clothing are diverted from landfill.
* Issue all new student living facilities with individual room recycling collection bins. Minimize size of waste containers.
* Establish central zero-waste stations to include opportunities for recycling of paper, cardboard, glass/metal/plastic and compostable items.
* Provide each resident with information in new student orientation regarding zero waste system and information on how to properly dispose of all materials generated in student living facilities (as mentioned above).
* Provide information about move-in and move-out procedures to include proper recycling. composting and durables handing.
* Establish reusable collections for two weeks at the end of the academic year in all campus-owned living areas. Encourage student yard sales and maximize donation opportunities for durables and textiles.
* At the end of Spring Term, provide each living unit with color coded bags for reusables and recyclables collection that can be easily brought to zero waste station and reusable collection locations.
* Provide regular round-up events for electronics and household hazardous waste at all campus owned living facilities.
1. **Purchasing**

Environmentally Preferable Purchasing (EPP) is the first step towards approaching a state of zero waste through a materials management approach with reduction / elimination of many products that would otherwise be destined for the landfill. The University of Illinois endorses the following EPP principles:

* Maximize purchasing of Environmentally Preferable Purchasing (EPP) products and services, favoring durability and refurbished products in place of disposables, and products that are refurbished and/or made from recycled materials.
* Integrate sustainability requirements into campus contracts and competitive bidding for materials and services, allowing for suppliers to meet requirements such as:
	+ Contracts that favor products, services and packaging that generate zero waste,are durable, built for reuse and repair, are recyclable or compostable at end of life through the vendor, and minimize waste production in product use (e.g. ensure all campus copiers can print double-sided, utilize 100% post-consumer paper, company would take all toner bottles/laser printers generated from the use of the machine—for certified recycling and end of life product would be returned to company for certified recycling of item).
	+ Purchase items in bulk quantities which will not extend beyond their usefulness, obsolescence or technological lifespan (e.g. purchasing enough supplies for current use instead of purchasing a 2-year supply of cartridges for a printer which will be replaced within that time period).
	+ Any by-products (including packaging, supplies used in product/service, end use of item) would be required to be able to be diverted from the waste stream; favour manufacturers that have take-back programs for materials generated in recurring use products (i.e. copy and laser toner cartridges) and for end use of item.
	+ For items that utilize supplies (i.e. copy machines), ensure supplies are environmentally preferable products (EPP) and that equipment can utilize these products (i.e. 100% post-consumer copy paper).
	+ Require certification on all take-back programs as to material make-up (of items/equipment/supplies) and after-life diversion methods.
	+ Require a minimum level of post-consumer recycled material content in all items purchased, including copier paper, furniture, industrial equipment, office supplies and other items, giving preference to items that contain maximum recycled content that does not compromise product integrity.
	+ Ensure that products and services are energy efficient, have low VOC content and are non-toxic.
	+ Preference would be given to items and services available locally and then regionally, as much as possible.
* Utilize University purchasing power to target environmentally preferable products (EPP) and services for volume-discounted pricing to create cost-competitiveness with conventional products and services.
* This includes weighing the longevity, reparability, waste impact of each item and service before awarding contracts.
* For products and services without available environmentally preferable alternatives, the University will work with its existing and potential suppliers to leverage the University’s purchasing power and market presence to request and develop sustainable choices.
* In the case of usable products for which there is no additional campus use, and/or a supplier does not provide a take-back program, the University will use other disposal methods, such as donation, existing campus-designated programs, or State surplus, in lieu of landfilling or incineration.
* Use of vending contracts to charge for waste generated and energy consumed due to contract (i.e. campus vending contract to pay for bottle / can waste generated from vending machine). Include energy costs of product or services while passing direct cost to vendor for utilizing plug-in equipment such as beverage vending machines.
* The University will create accessible information, EPP tracking for all campus purchases, training that supports this policy, and procedures for EPP to be utilized for the campus community and a focus group of all personnel whose jobs include purchasing.
1. **Facilities and Services**

As college campuses provide trade maintenance, upkeep and service to campus grounds and facilities (including academic, residential and athletic), the University of Illinois will employ zero waste strategies in carrying out these vital campus duties:

* Building cleaning and maintenance will be conducted in accordance with environmentally sustainable practices. These practices include:
	+ Reducing the use of chemicals used in cleaning and maintenance/service to the extent practicable.
	+ Using environmentally preferable “green” cleaning and other building maintenance / service chemicals (such as adhesives, finishes, paint, etc.).
	+ Eliminating desk-side collection of waste and recycling by custodial or Zero Waste Program staff in favor of self-servicing by occupants of these containers / materials to centralized collection locations.
* Ensure replacement items and construction equipment minimize energy production such as: using energy saving light bulbs in all campus exit lights, overhead lights and office lights with options for responsible recovery (such as re-lamping programs and compact fluorescent (CFL) light-bulb recycling); utilize energy saving equipment such as any power tools, floor waxer, etc.
* Storing overstock usable materials and chemicals for future use and / or disposing of these in a safe manner through recycling or hazardous materials handling.
1. **Facility alterations and new constructions**

Examples include, but are not limited to, building components and structures (e.g. wall studs, insulation, doors, windows); panels; attached finishing (e.g. drywall, trim, ceiling panels); carpet and other flooring material; mechanical, electrical, and plumbing equipment; furniture; file cabinets; adhesives and sealants; and paints and coatings.

For all campus re-model and new construction projects, the University is required to evaluate items for reuse and donation opportunities prior to disposal, reducing the amount of materials discarded into the waste stream and maximizing reuse and resource conservation efforts as follows:

* Working with contractors, the University project managers will work with projects to identify, inventory and store (preferably in the existing building), extra materials that can be utilized for repair and/or future replacement of existing building components, fixtures, equipment, etc.
* Contractors hired to perform work at the building will be required to recycle and / or donate or store for reuse: building components and structures (wall studs, insulation, doors, windows); panels; attached finishing (drywall, trim, ceiling panels); carpet and other flooring material; mechanical, electrical, and plumbing materials; furniture; file cabinets; adhesives and sealants; and paints and coatings.
* All campus construction projects will make provisions for construction waste management by supplying centralized recycling containers for sorting on the construction site or specifying material recovery of all waste generated during demolition and construction including the requirement for reporting waste diversion efforts, tonnages and how the materials were diverted (i.e. all wood scraps went to XXX local wood product processor).
* All project on-site administrative locations will be provided with a full in-office zero waste collection system to be serviced by campus Zero Waste Program staff.
* The building management team will work with the campus Operations capital construction team to establish building construction guidelines for tenant improvements that mandate construction waste management. All projects will include the documentation and tracking of building and tenant construction recycling to identify areas for increased recycling.
* Ensure all new construction and re-modeling includes plans for centralized zero waste stations (to include paper, glass / metal / plastic, composting and landfill) either prefabricated equipment or built-ins, and signage as per the campus Zero Waste Program specifications.
* Consider incorporating a central departmental / building reusable office supply location to exchange supplies and reduce departmental costs.
* Ensure that all new office, classroom and meeting spaces have an integrated waste management collection system such as a small desk-side bin that is suited to collecting paper, glass, metal, plastic and possibly composting with a small mini-bin for garbage.
* Ensure all replacement and new drinking fountains would contain a bottle refill option.
* Favor building projects that remodel over new construction to reduce costs, save energy and preserve valuable resources.
* In upgrading equipment and furnishings (i.e. carpeting, bedding, gym lockers, curtains), recycle, donate, reuse, store for reuse as the preferred option.
1. **Source reduction**

Reduction in consumption—and thus, reduction in waste—is the first step towards achieving a state of zero waste. Materials which are not purchased, acquired, consumed, or otherwise brought into the waste stream do not become a part of that stream. The University of Illinois prioritizes the following waste / consumption reduction approaches:

* Engage in Environmentally Preferable Purchasing (EPP) strategies (see above).
* Utilize electronic and other paperless forms of communication, information dissemination, and documentation to the greatest extent possible including transitioning toward use of electronic media for all University business (e.g. web-based catalogs, phone books, campus maps, planning documents and annual reports).
* Reduce printing and / or print materials in the most environmentally responsible format (e.g. all printer and copier settings default to two-sided copying and printing, employing draft paper copies-reuse of non-needed one-sided already printed paper-for non-official business, use of soy-based inks, etc.)
* Purchase chlorine-free paper made with non-virgin, 100% post-consumer content.
* Purchase other items and equipment that contain a minimum of 50% post-consumer content as is possible.
* Install hand dryers in place of paper towel dispensers in campus restrooms; default to establishing composting of paper towels if hand dryers are not installed.
* Require all faculty, staff, students or employees leaving their offices for any length of time or facilitating the last class or meeting of the day, to ensure waste is removed from the room and energy conservation is in place, by turning off lights and other unneeded electronic equipment.
* Install refill spouts on all new and needing to be replaced drinking fountains.
* Eliminate all food service-related Styrofoam products.
* Compost all campus yard debris, utilize finished product as campus soil amendment, which supports an integrated pest management system to decrease pesticide use and negates necessity to purchase an outside product.
* Reduce use and purchasing of plastics to the greatest extent possible.
* Ensure all food ware and other single-use inputs are compostable and compatible with University’s compost processing mechanism.
* Institute reusable options for to-go containers in all campus food service and housing locations.
* Provide all new University employees and students with reusable accoutrements such as reusable / refillable water bottles and beverage mugs; explain the environmental benefits; and establish incentives to encourage the use of reusables in place of disposables.
* Require all campus catered and other events to be zero-waste events, from inputs to outputs, and are handled as such. Any event utilizing campus catering will automatically include zero waste services, provided by campus catering as a routine part of each campus catered event. Other non-catered, waived campus events are required to include adding a zero-waste service to the event as part of the waiver.
* All campus events not catered by University catering / food services, are required to follow this policy and principles including reducing material production and consumption through source reduction practices mentioned in this policy.
* Outside food vendors are required to be alerted to this policy and to adhere to this policy in any dealings with University related events.
* Ensure all campus food service areas including campus catering and athletic events are zero waste events favoring inputs that can be reduced (such as bulk over individually packaged condiments) and outputs that are recoverable in a zero-waste system providing through campus catering and other outside caterers as well as conference, event coordination, etc.
* Educate new University employees and students about the University’s materials management and zero waste practices. Include this information with all new employee and student orientation events.
1. **Reuse and Repair**

Extending the life or usefulness of supplies, furnishings, equipment, and other goods via reuse is preferable to recycling or disposing of those items and materials. The University of Illinois encourages the following reuse approaches:

* Purchase durable, repairable, and / or reusable goods in place of disposable goods, when possible.
* Establish incentives and pricing structures for utilizing durables with all campus catered and waived events that include food.
* Ensure that unneeded but reusable supplies, equipment, electronics, and furniture are made available to other University units, local non-profits and / or State agencies through established means and programs.
* Provide reuse / exchange opportunities within University departments and for campus-wide distribution such as reusable office supply exchanges, surplus furniture, electronics and other reuse programs for use by campus community.
* Provide intra-campus communication opportunities for departments to post items for campus purchase prior to placing in any campus re-use exchange including surplus property.
* Encourage establishment of centralized department and/or building reuse exchange areas for reusable office supplies and furniture.
* Fully utilize items of their useful life before purchasing replacements, encourage repair of usable equipment. Establish an inventory and storage location for extra materials generated from campus re-models and new construction to be available for building repairs.
1. **Durable Goods / Electronics**

Examples include, but are not limited to, office equipment (e.g. computers, monitors, copiers, printers, scanners, flat screen monitors), appliances (e.g. refrigerators, dishwashers, and water coolers), external power adapters, and televisions, phones, and other audio-visual equipment:

* Require building occupants to recycle electronics including office equipment and appliances via established procedures through University property management.
* The building management team will provide building occupants with centralized durables collection containers in building storage rooms to manage building durable goods and electronics for reuse and / or recycling. If unavailable, identify alternate space.
* Communicate to all building occupants on University property management handling rules including location of on-line forms and campus contacts.
* Communicate dates, times and special collection opportunities to the occupants to maximize the success of the program.
1. **References**

About the Environmentally Preferable Purchasing Program, <https://www.epa.gov/greenerproducts/about-environmentally-preferable-purchasing-program>

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<http://cleanair-coolplanet.org/campus-carbon-calculator/>

College and University Recycle Coalition (CURC) toolkits and guides, <http://www.curc3r.org/resources/resources-2>

College and University Recycle Coalition (CURC) toolkits and guides, <http://www.curc3r.org/resources/resources-2>

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Evergreen State University’s draft Zero Waste Plan, <http://www.evergreen.edu/sustainability/zerowaste.htm>

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<http://www.iau-hesd.net/>

Penn State’s REDI index (response diversion index), <https://redi.opp.psu.edu/>

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Recycling and Beyond: A College Campus Primer. By Christine von Kolnitz, Medical University of South Carolina and Karyn Kaplan, University of Oregon. <http://zerowaste.uoregon.edu/Book/index.htm>

University Alliance for Sustainability,
<https://www.fu-berlin.de/en/sites/uas/about-us/partners/index.html>

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