Zero Waste Plan

2025

CSUN. | SUSTAINABILITY

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Glossary of Terms

- AM – Asset Management, responsible for the tracking, inventory, storage and disposal of equipment, materials and property.
- ASSR – Associated Students Sustainability and Recycling, responsible for the collection and processing of certain recyclable materials on campus
- CalRecycle – The California Department of Resources and Recycling
- CRV – California Refund Value, which allows consumers or other entities to redeem eligible recyclable containers to receive a five or ten cent rebate, depending on the container's size.
- CSU – The California State University System
- CSUN – California State University, Northridge
- Disposal Rate – The amount of material being sent to landfills or incinerators, measured in pounds per person per day.
- Diversion Rate – The percentage of waste material by weight that is not sent to a landfill or incinerator but rather donated, recycled, composted or otherwise diverted.
- EH&S – Environmental Health and Safety
- FRN – The Food Recovery Network, a student organization responsible for the collection and donation of edible food that would otherwise be disposed of
- Inerts – Materials that are not chemically or biologically active, and will not decompose, such as sand or gravel. These materials are typically quite heavy, and are easily diverted from landfills.
- PPM – Physical Plant Management, responsible for electrical, mechanical, plumbing, grounds and custodial services, among others.
- Reprographics – The University's internal copy and printing service provider
- ROC – Recycling Operations Center, housed in the Sustainability Center and operated by ASSR
- TUC – The University Corporation, responsible for most of the dining and food service facilities on campus
- UBC – Used Bottles and Cans, which have a California Refund Value
- USU – The University Student Union, which provides resources and involvement opportunities for students
- Zero Waste – The practice of reducing the amount of materials sent to landfills, incinerators or the environment by 95%.

Introduction

Environmental Impact

California State University, Northridge recognizes the significant detrimental impact that waste materials have on natural environments, communities, human health and wildlife. Even as plastic pollution chokes our rivers and oceans, people consume more single-use products than ever before. Only an estimated 9% of all plastic products are recycled (Geyer, Jambeck, & Law, 2017), and up to 12 million metric tons of plastic end up in the world's oceans every year (Jambeck, et al., 2015). Researchers estimate that by 2050, 99% of all seabird species will have ingested plastic, with 95% of the individuals in these species having ingested plastic by the same year (Wilcox, Van Sebille, & Hardesty, 2015). Additionally, the energy use and resource extraction necessary to manufacture trillions of disposable products each year represents immense upstream environmental impacts. One million single-use bottles are purchased every minute worldwide, and plastic manufacturing consumes 4% of global oil production (Hopewell, Dvorak, & Kosior, 2009).

CSUN acknowledges that responsible waste management means not only utilizing proper disposal methods, but also reducing overall waste outputs. With these facts in mind, CSUN has adopted a Zero Waste Plan with the intent to significantly curtail waste generation on campus, increase the percentage of material going to recycling and composting facilities, and educate campus users on their role in Zero Waste practices.

State, Local and System Goals and Mandates

In 2014, The California State University Sustainability Policy established the following goals regarding waste for all CSU campuses.

1. Reduce solid waste disposal rate by 50% of 2006 levels by 2016
2. Reduce solid waste disposal rate by 80% of 2006 levels by 2020
3. Move to Zero Waste

The State of California has established a goal that 75% of materials generated will be source reduced, recycled, or composted by the year 2020. The following laws have gone into effect to support this goal.

1. Assembly Bill 341 (Chapter 476, Statutes of 2011) requires generators of four cubic yards or more of solid waste per week to arrange for recycling services.
2. Assembly Bill 1826 (Chapter 727, Statutes of 2014) requires generators to recycle their compostable materials with a phase-in schedule depending on the amount of compostable materials or solid waste they generate per week. CSUN produces more than the first compliance tier (8 cubic yards of compostable materials per week), and was required to compost those materials as of April 1, 2016.
3. Assembly Bill 2812 (Chapter 530, Statutes of 2016), requires each state agency to provide adequate receptacles, signage, education, and staffing, and arrange for recycling services consistent with existing recycling requirements for each office building of the state agency or large state facility. The bill requires, at least once per year, each covered state agency and large state facility to review the adequacy and condition of receptacles for recyclable material and of associated signage, education, and staffing. Additionally, the bill requires each state agency to include in its existing annual report to CalRecycle a summary of the state agency's compliance with the act.

What is Zero Waste?

The Zero Waste International Alliance defines Zero Waste as "a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use. Zero Waste means designing and

managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them." This Zero Waste plan seeks to eliminate 95% of all of CSUN's waste outputs to landfills or waste-to-energy facilities.

Zero Waste Plan Goals and Metrics

Using 2006 as the baseline year, reduce the solid waste disposal rate by 80% by 2020

- This benchmark, established by the CSU Sustainability Policy, focuses on reducing overall materials sent to the landfill on a pounds per capita basis. CSUN's disposal rate is calculated annually based on information submitted in an annual Waste Management Report to the State Agency Reporting Center. Two disposal rates are calculated each year, one based on pounds per employee per day, and another based on pounds per student per day.

Achieve Zero Waste by 2025

- CSUN's Zero Waste goal focuses on the source reduction of landfill-bound materials, as well as the diversion of compostable, recyclable or reusable material. Progress towards this goal will be tracked based on data from a variety of sources. The campus waste hauler, Asset Management, TUC, The Institute for Sustainability, Food Recovery Network and ASSR all regularly report data on the weights of materials they collect and divert. This data is publicly available at http://csun.wastetracking.com/, and will be used to measure CSUN's progress towards its waste goals.

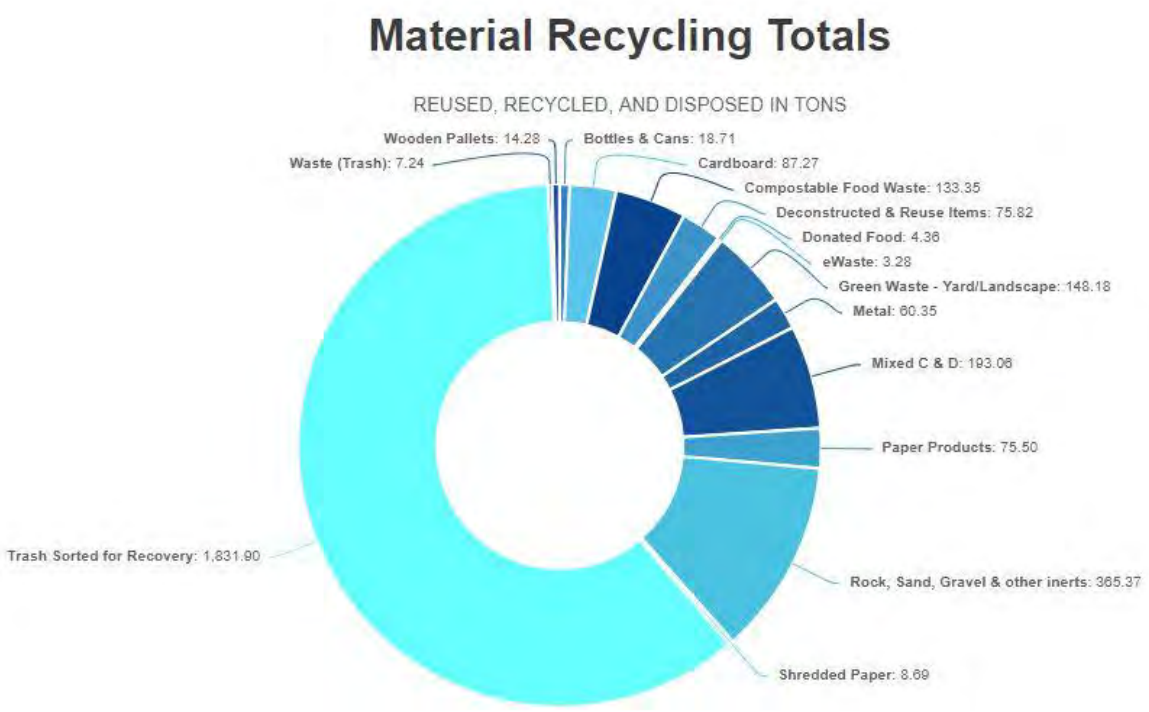
CSUN's Diversion Rates

Material generation

In 2015, CSUN began a new contract with Athens Services as its waste hauler. This has not only generated much more data with a greater degree of accuracy than was previously available, but has also enabled the campus to achieve much higher diversion rates. Material collected from campus trash bins is processed by Athens to recover and recycle items that are beyond CSUN's ability to divert, such as plastic bags and non-CRV plastics, as well as conventional recyclables that were disposed of improperly. Athens does not remove or recover compostable material from this stream.

Presently, CSUN has a non-inert diversion rate of 51.59%, and an overall diversion rate of 56.07%. From 2006 to 2016, the campus reduced its disposal rate for employees by 36.8%, equivalent to 0.92 pounds per person per day, and its disposal rate for students by 56.25%, or 0.18 pounds per person per day. In doing so, CSUN exceeded the CSU system-wide goal to reduce student disposal rates by 50% by 2016, but fell short of the identical goal for employee disposal rate reduction. Of the material currently being sent to the landfill, 46.08% comes from the main campus. Another 29.87% originates from student housing, with the last 24.05% coming from TUC/USU operations.

As of December 2017, all of CSUN's landscaping waste is now composted on site, whereas it was previously taken to a green waste facility. Over 50,000 pounds of pre-consumer food waste are composted each year at the Sustainable Garden Education Center, and over 130 tons of post-consumer food waste from CSUN's main residential dining facility, Geronimo's, are composted off-site each year.



CSUN's waste stream in calendar year 2017

Available data

Waste Characterizations

CSUN works with its waste hauler to perform two Waste Characterization studies annually for each entity on campus. Random samples of waste from TUC and USU, Housing, and the Main Campus are separated into recoverable fibers, containers, scrap metal, e-waste and plastic films, as well as non-recoverable organics/food waste, textiles, and general residue/composites. The goal of the waste characterization is to understand the different components that can be recycled within the CSUN waste stream as well as identify items which should be avoided within our operations. The results of these continuous studies provide insight on how these items might be avoided and landfill diversion increased.

Associated Students staff and students in the Sustainability 310: Best Practices in Sustainability course have also conducted at least one waste audit per year for the last four years. These audits provide data on specific buildings, and give students the chance to learn about the campus waste stream first-hand.

Weights

Another benefit of the partnership with Athens Services is their ability to provide timely, consistent and accurate data on all of the waste they handle. The waste hauler is required to weigh and report data on each 3, 4 and 6-yard dumpster as they pick them up, made possible by scales onboard each truck. The hauler also reports all material weights that are brought off campus in larger 30 and 40-yard containers. This material includes construction and demolition waste, metal, trash, and inert materials.

The Associated Students Sustainability and Recycling team also reports weights of the material they process. This data is provided by the various vendors that handle the materials they recycle.

The Institute for Sustainability reports data from their organics composting program, which handles a majority of the pre-consumer food waste on campus.

Organization and Planning Boundaries

Campus boundaries

This plan focuses on the CSUN campus boundaries, which include the main campus, the University Student Union, Associated Students, The University Corporation and Student Housing.

Campus Partners, Existing Programs and Infrastructure

The CSUN Campus has several auxiliaries within the campus boundary that operate independently and in conjunction with the University. These auxiliaries include The Associated Students, Student Housing and Conference Services, The University Corporation and The University Student Union. While each of these auxiliaries have certain materials that are specific to their waste stream, there are many materials and programs that are common between the campus and the auxiliaries. Below is a list of common materials found throughout the campus, its various auxiliaries and their associated programs.

Campus-Wide Waste Streams

- Plastic packaging (recyclable and trash)
- Single-use food and beverage containers (recyclable, compostable and trash)
- Mixed paper
- Cardboard
- Electronics
- Batteries
- Toner cartridges
- Paper towels
- Furniture
- Classroom and office materials (markers, pens, binders etc.)

Student Housing

- Clothes, appliances, furniture, school supplies (mostly upon move-out)
- Cosmetics and toiletries

The University Corporation

- Restaurant waste – food handling gloves, hairnets, foil, plastic wrap and trash bags
- Grease & Cooking oil
- Pre-consumer & post-consumer food waste
- Coffee grounds
- Food packaging from convenience stores – wrappers, chip bags, etc.
- Bulk delivery packaging (plastic wrap, cardboard)

Associated Students

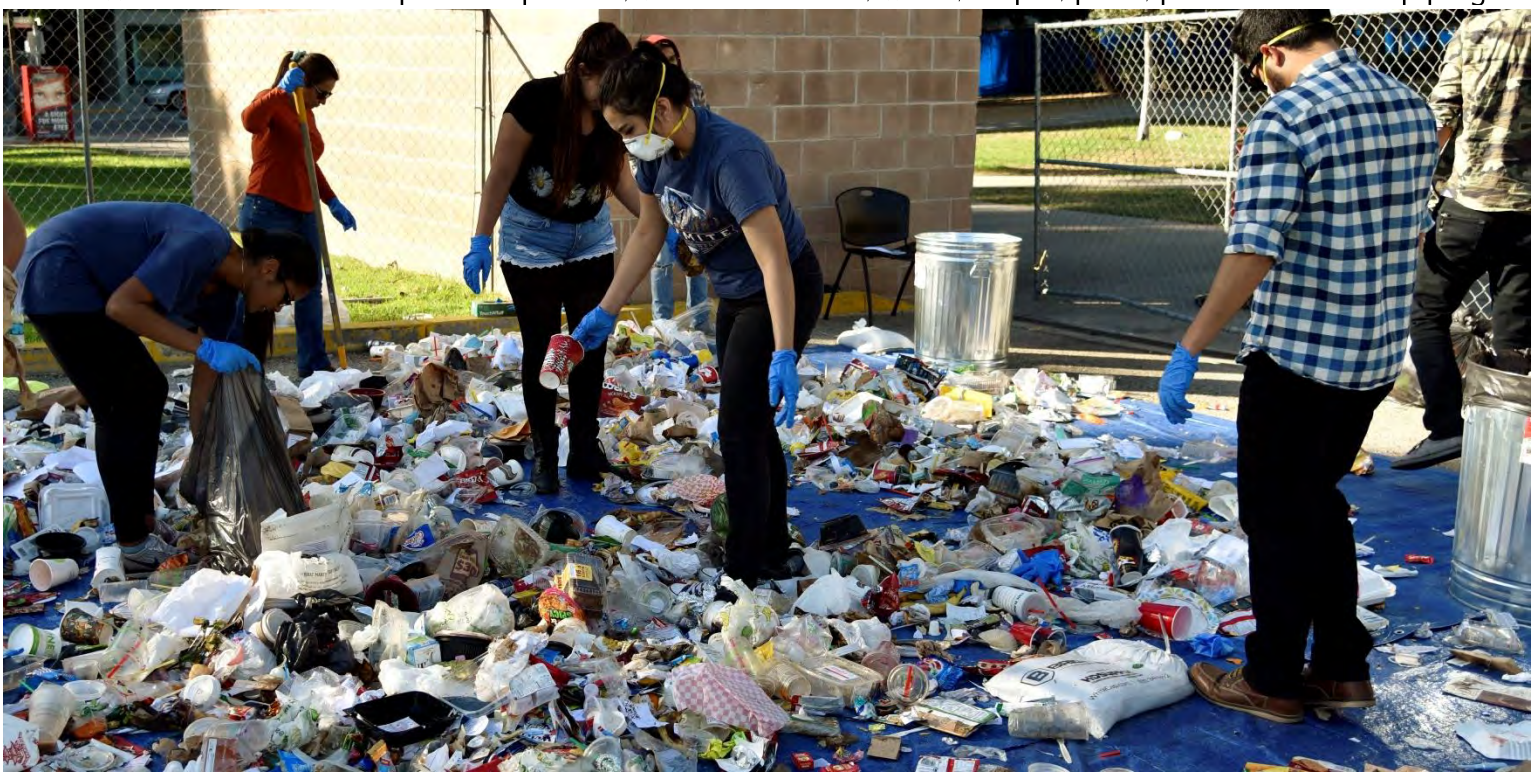
- Contaminants pulled from recycling stream (trash and organics)

University Student Union

- Food service waste – hairnets, gloves, foil
- Pre-consumer food waste
- Post-consumer food waste

Campus Operations (PPM)

- Bulk delivery waste – Pallets, plastic wrap, cardboard
- Green waste (compostable)
- Waste from trade shops – Scrap metal, vehicle batteries, wood, carpet, paint, plastic and metal piping



Material Specific Programs

Below is a brief description of existing programs for specific materials and waste streams as well as how the material is handled:

Landfill/Trash

Landfill bins can be found throughout the campus exterior, and are also abundant inside all buildings. Interior receptacles are emptied daily by custodial staff, and their contents placed in 3, 4 or 6-yard dumpsters. Exterior receptacles are collected by the Grounds Department and brought centrally to the PPM Corporation Yard and deposited into a 40-yard roll-off. These containers are picked up by Athens Services 2-3 times per week, and taken to their Materials Recovery Facility. Once there, Athens sorts through all the material, removing about 30% of the stream in the form of mixed recyclables. These are sorted into the proper recycling stream, and the remaining material is sent to the landfill.

Infrastructure

- Interior trash bins
- Exterior trash bins
- Black bin liners
- Exterior 6-yard dumpsters
- 40-yard bin for landfill

Bottles and Cans

Program

Collection bins for bottles and cans are distributed across the campus grounds, as well as in some buildings. Outdoor bins are emptied by AS student employees and the contents are taken to the Recycling Operations Center (ROC) located within the Sustainability Center. Indoor bins are emptied by custodial staff, and the contents are placed in the appropriate dumpsters near that building. From there, AS student workers take the bottles and cans to the ROC. Once at the ROC, the containers are emptied and their contents are sorted by material type. These materials are then collected by and sold to Valley Recycling.

Infrastructure

- Standard interior bins, 25 and 51-gallons
- Standard exterior bins
- Green bin liners
- Carts for material collections
- 3-yard exterior dumpsters
- Recycling Operations Center (ROC)
- Material baler

Cardboard

Program

In office spaces, cardboard is left near landfill, UBC or paper collection bins or outside of office doors to be picked up. AS collects bulk loads of cardboard (at least five boxes) from office spaces when requested, otherwise cardboard is collected by custodial staff and taken to a bulk container outside of the building. If the building does not have a bulk cardboard container, cardboard is put in the landfill stream and must be sorted out by Athens. AS picks up cardboard from bulk containers outside buildings on a daily basis. In heavy traffic retail locations, such as the Sierra Center and bookstore complex, cardboard is collected by AS twice per day. AS takes cardboard to the ROC, where it is baled daily. When enough bales have been formed, they are collected by and sold to Valley Recycling.

Infrastructure

- Exterior 3-yard bins
- Carts for material collections
- ROC
- Material baler

Paper

Program

Faculty and staff have desk-side receptacles for paper, which they are responsible for emptying in the bulk container located within their office. This bulk container is then picked up by custodial staff and taken to a three-yard bin outside the building. Once twelve of the twenty-eight 3-yard bins are full, AS requests a pickup from Golden State Fibers, who collect the paper for recycling. PPM also offers a secure document shredding service to the campus. Departments collect sensitive documents in 11-gallon secure consoles or 65-gallon containers. When these are full, departments submit an online request to have Postal Services empty or swap out these containers. The material is transported in a secure van to the shredding facility in PPM, where it is securely stored until it can be shredded. Once shredded it is stored in locked 3-yard bins until seven of these bins are full, at which point they are picked up by Athens Services. Athens transports the material to a recycling facility where the material is sold. CSUN receives 50% of the profits from the sale of this material.

Infrastructure

- Desk-side bins
- Central office bins
- Standard interior bins
- Exterior dumpsters
- Blue bin liners
- Document transport van
- 11-gallon secure consoles
- 65-gallon secure collection cart
- Commercial document shredder
- Paper bin tipper

Pallets

Program

AS Recycling collects pallets from the Matador Bookstore, Physical Plant Management, and other sites on an on-call basis. Campus users can call (818)-677-4262 to schedule a pallet pickup. Pallets are stored in a yard near PPM. Once AS has accumulated 150 pallets, they are sold to and collected by San Fernando Pallets.

Infrastructure

- Recycling Operations Center

Toner

Program

Students can place their laser toner cartridges in their original box, envelope or bag, and seal it to prevent leaking. They can then drop it off at the Associated Students recycling office. Faculty and staff should seal their toner cartridge in its original box, or in an envelope or bag. They can then print a provided shipping label from the AS website, tape it to the sealed toner box, envelope or bag, and place it in the mailbox to be sent to AS. AS palletize toner cartridges with other non-state electronics they receive. Once three pallets worth of material have accumulated, they are sold to and collected by California Recycles.

Toner cartridges from the large multi-function printers associated with cost-per-copy services are returned to Reprographics via campus mail. They are then either shipped back to the original vendor using pre-paid shipping labels, or are collected by the vendor directly for recycling.

Infrastructure

- Campus shipping labels for used cartridges
- Shipping packaging

Organics

Green waste

Green waste is primarily composed of landscape trimmings (leaves, branches, grass) and is collected throughout campus by the Grounds Department. Green waste is taken to a site located adjacent to the Sustainable Food Garden to be composted. Larger items are shredded so that they will break down more easily.

Infrastructure

- String trimmers, leaf blowers, hedge trimmers, chain saws, and other powered or manual landscaping tools
- Tractor
- Chipper
- Mowers
- Fenced-in compost yard

Food Waste

All of the CSUN Dining facilities on campus divert their pre-consumer food waste to the Institute for Sustainability's Compost Site, located near the Sustainable Food Garden. Geronimo's dining facility is currently the only facility that collects all pre- and post-consumer food waste. It is placed in a 30-yard bin, which is picked up by Athens Services and taken to their composting facility. A majority of the post-consumer food waste on campus is not being collected for composting due to a lack of bins and dumpsters for compostable material, limited knowledge of composting by campus users, and staff limitations. In Freudian Sip locations, leftover food that has not been served is collected by the Food Recovery Network and donated to local charitable organizations. As the Food Recovery Network grows, they will expand their collections to include more campus dining facilities.

Infrastructure

- Bins for pre-consumer food collection and coffee grounds
- Bins for food recovery efforts

Cooking Oil

Cooking oil is collected from campus dining facilities in designated containers, and collected by Biotane Pumping, who then recycles it into alternative fuels - namely biodiesel.

Infrastructure

- Bins for oil collection

Construction and Demolition

Inert materials such as sand, gravel and concrete are collected in a 10-yard bin specifically for inert materials. All other construction and demolition waste, such as drywall, broken furniture or construction scraps are placed in a 40-yard bin, which is collected by Athens to be sorted and sent to the appropriate facilities.

Infrastructure

- 40-yard bin

Scrap Metal

Metals are placed in a 40-yard bin in the PPM Corporation Yard, and collected by Athens Services. The contents of this bin are sold and the University receives a percentage of the metals' value.

Infrastructure

- 40-yard bin

Inerts

Inert materials such as sand and gravel are placed in a 10-yard bin in the PPM Corporation Yard, and emptied by Athens Services once per week. These materials are typically used in landfills as a covering layer, but are considered diverted.

Infrastructure

- 10-yard bin for inerts

University-owned equipment and property

Unwanted property, such as furniture, filing cabinets, computers, appliances etc. are taken to Asset Management and stored. Faculty and staff may retrieve items from Asset Management for use in their workspace. Items that are damaged beyond repair are disassembled. Their constituent parts are recycled as scrap metal or other recyclable material when possible, or disposed of in a landfill.

Usable items that aren't retrieved by the campus community are sent to auction. About 98% of assets auctioned are done so through Public Surplus, an online auction. CSUN receives 90% of each product's selling price. Vehicles, trailers and other large items are auctioned through Ken Porter Auctions, for which CSUN receives of the items' selling price. Ken Porter Auctions is also used for furniture that is in usable condition, but not deemed fit for auction through the labor-intensive Public Surplus Process.

Infrastructure

- Warehouse
- Donation Trailer
- Loading Dock
- Internet Auction Site

E-waste

Faculty and staff can call AS Recycling at 818-677-4262 to schedule a pickup of their personal electronic products. Students can drop off their e-waste at the AS Recycling Office. AS palletizes e-waste for collection by California Recycles.

E-Waste generated by general-fund operations is processed through Asset Management. Materials are collected, asset tags are removed and the equipment is retired as appropriate, then separated into various e-waste categories and stored until picked up by ECS Refining, which is under a system-wide contract.

Infrastructure

- Warehouse
- Loading dock

Universal Waste (EH&S)

Batteries are the main form of universal waste for which the end user is responsible. Most other universal waste, such as fluorescent lamps, are handled by PPM and taken to EH&S. EH&S picks up batteries from departments when requested. Users can also call to schedule a time to drop off their batteries at EH&S. Clean Harbors currently picks up Hazardous and Universal waste from EH&S.

Infrastructure

- Envelopes for batteries
- Specialized containers for fluorescent lamps and other universal waste

Hazardous Waste (EH&S)

Most hazardous waste on campus comes from laboratories. There is a designated person in each department to handle hazardous waste. Whenever a certain amount is accumulated, they are responsible for filling out the required forms and arranging for the material to be transported to EH&S. From there, it is picked up by Clean Harbors for proper treatment and disposal.

Infrastructure

- Hazardous waste storage area
- Hazardous material storage containers

Zero Waste Program Strategies, Policies and Recommended Practices

The State of CSUN's Waste Programs and Policies

While the campus has many existing programs and diversion strategies for a variety of waste streams, there is still much improvement to be made. One of the biggest issues is that overall bin infrastructure is very inconsistent throughout the campus. Most outdoor areas have recycling bins, but most campus buildings only offer receptacles for trash. The Sierra Center is the first building to offer designated bins for post-consumer composting, but the compost stream has continuously exceeded the contamination rate necessary to allow the material to actually be composted. Despite the large amount of compostable material generated on campus, there is not yet an effective program in place to capture and divert it from the landfill. Additionally, a significant portion of the campus waste stream is composed of single use inputs, such as utensils, cups and straws, which have simple reusable alternatives.

In administrative buildings, the high number of desk-side trash bins causes custodial staff to spend a lot of time servicing redundant waste receptacles, and enables wasteful habits among users. Many users are also unaware of all the diversion opportunities available for electronics, cardboard, ink and toner cartridges, batteries, and other unconventional materials which CSUN regularly recycles. The fractured nature of CSUN's multiple waste programs has hindered their expansion due to the multitude of people and organizations involved in their different aspects. Additionally, contractual obligations have prevented the campus from taking certain steps to reduce waste inputs, such as the banning the sale of bottled water on campus. With these and other challenges in mind, a number of waste reduction and diversion strategies have been identified for implementation.

While not every strategy listed below will achieve complete success, each one has the potential to reduce campus waste inputs, increase waste diversion through reuse, donations, recycling and composting, and shift consumer behavior towards a Zero Waste mindset. Together, these strategies represent CSUN's approach to Zero Waste by 2025.

General Strategies

1. Ensure that all waste stations in all campus locations have receptacles for landfill material, compostables and recyclables
    a. A three receptacle system including trash, recyclables and organics will reduce contamination between these waste streams while educating campus users on proper waste disposal practices.
2. Standardize signage across campus, include product transformation awareness in marketing
    a. This will ensure that campus users receive consistent messages regarding what material belongs in each steam, regardless of where they are on campus.
3. Integrate all campus waste and waste reduction operations (AS recycling, purchasing, custodial, shredding, asset management, reuse, Food Recovery Network, etc.) into one webpage entitled "Campus Zero Waste Program".
    a. Creating a central online hub for all of CSUN's waste-related efforts will make the program much more tangible and accessible to the whole campus community. Anyone will be able to learn about any aspect of the program, which will build interest in and involvement with the program.
4. Utilize a Material Recovery Facility through the campus waste hauler that allows for the diversion of scrap metal, wood, non-CRV plastic, glass and metal containers, and other recoverables that cannot be diverted through campus activities.
    a. Campus recycling efforts are only able to capture a small portion of recyclable materials. Sending campus waste to a facility where it can be properly processed to remove additional recyclable material is necessary to achieve the goals mandated by the state, and outlined in this plan.
5. Take advantage of programs to recycle materials that are typically landfilled, such as snack wrappers and toiletries
    a. Many materials used on campus do not have compostable, recyclable or reusable alternatives. While consumer choice can play a part in reducing these waste inputs, creating opportunities to recycle unconventional materials will also have an important impact on waste diversion, and increase awareness of recycling processes for different materials.
6. Strengthen the cardboard recycling program to capture all cardboard from all campus entities
    a. While most of the cardboard used on campus is recycled, much of it still ends up in the landfill stream and has to be pulled out at a materials recovery facility. Establishing and communicating procedures for cardboard handling will increase awareness among building occupants and improve cardboard diversion rates.
7. Develop a guide for all campus meetings, conferences, events, to incorporate Zero Waste practices
    a. Integrating Zero Waste practices into all aspects of CSUN operations will help make it a part of campus culture, and encourage behavior shifts among faculty, staff and students.

8. Expand composting program to include post-consumer waste
    a. This will greatly reduce the amount of material currently being sent to landfills. A large number of food service products (to-go boxes, utensils, straws) are already compostable, but are currently going to a landfill.
9. Create and market a year-round donation and recycling program for shoes and textiles
    a. Shoes and textiles do not represent less than one percent of CSUN's waste stream, but they are materials that can be reused or recycled as opposed to landfilled. Providing opportunities to divert these materials will enable campus users to do so, and eliminate an input to the campus waste stream.
10. Create and deploy a Zero Waste education program targeted towards students, faculty and staff. Include information about waste goals, signage, programs, processes and other pertinent changes that will result from the plan's implementation.
    a. The strategies in this plan will have significant impacts on campus operations, and rely in part on behavioral shifts from campus members in order to be successful. A campus-wide educational campaign will raise awareness of Zero Waste efforts and enable students, faculty and staff to participate fully in the program.

Buildings

All buildings

11. Provide receptacles for organics, recyclables and landfill in all buildings
    a. A successful Zero Waste program will provide users with convenient diversion opportunities for all materials to the extent possible while also achieving custodial efficiency. This ensures users have sufficient opportunities to dispose of their waste properly.
12. Provide paper recycling near printers and in other key locations
    a. Customizing waste receptacles to meet the needs of specific areas will reduce the need for additional bins while maximizing the amount of material diverted.
13. Transition away from standard desk side landfill receptacles and toward centrally located Zero Waste stations for all campus units
    a. Removing personal waste receptacles will cause users to be more aware of the type and volume of waste they produce, leading to greater awareness of personal waste streams. It will also make custodial operations more efficient.

Academic/office buildings (Campus)

14. Remove waste receptacles from classrooms, and provide centrally located Zero Waste stations in hallways and common areas
    a. This will reduce custodial labor while also eliminating stand-alone trash cans as well as reduce the amount of waste bin liners being consumed on a daily basis.
15. Provide self-serviced desk-side bins only for paper recycling, with central bins for comingled recycling, compost and landfill waste
    a. Self-serviced desk-side bins for paper will encourage users to adopt lower-waste habits while at their desk and create more awareness of the labor and infrastructure required to handle single-use items, recyclable or otherwise.

Food service facilities (USU, TUC)

16. Ensure all service ware and other single-use inputs are compostable and compatible with the university's compost processing system
    a. Composting service ware and other single-use inputs will dramatically increase the amount of material CSUN is able to divert from the landfill.
17. Purchase and utilize durable service ware as much as possible in all campus food service and housing locations
    a. This will enable consumers to make choices that reduce their waste, while also demonstrating the campus' commitment to reducing its waste output. Over time, it will also reduce the cost of regularly purchasing disposable to-go items.
18. Discontinue the use of plastic straws, take-out bags and other single-use plastics on campus
    a. Reusable straws, utensils and tote bags are already available to the campus. Eliminating their single-use counterparts will decrease unnecessary waste, raise awareness of wasteful products and encourage the campus community to adopt reusable alternatives.
19. Provide and market greater incentives for reusable flatware, coffee cups and other traditionally disposable items.

    a. This will not only contribute to a culture shift away from wasteful practices, but also make consumers aware of the option to use their own flatware, cups, and other reusables.
20. Create pricing structure that favors use of durables in lieu of disposables, compostables or recyclables
    a. This will raise awareness about the true cost associated with convenient, but wasteful practices such as disposable flatware and coffee cups, and incentivize consumers to bring their own reusable alternatives for these products.

Matador Mercado and Campus Store Complex

21. Stock more goods with recyclable/compostable packaging, replace disposable packaging with recyclable/reusable options where possible
    a. Plastic packaging represents a significant component of the campus' non-divertible waste stream. By converting these inputs to compostable/recyclable alternatives, CSUN will create more opportunities for waste diversion and reduce its outputs to landfills.
22. Eliminate plastic take out bags on campus
    a. Reusable alternatives are readily accessible. Eliminating single-use options will encourage users to bring their own bags, and be less reliant on disposable plastic bags. It will also save TUC money because they will no longer need to purchase bags.
23. Transition products to bulk purchasing wherever possible, provide incentives for reusable container use
    a. Bulk purchases produce much less waste than traditional, individually-wrapped goods. This transition will give consumers more choices regarding their own waste outputs, and raise awareness of zero-waste practices.

Housing

24. Ensure each resident in the residence halls and family housing has equal access to landfill, recycling and composting receptacles, both centrally-located and in-unit
    a. Successful source separation requires that users have equal access to every disposal stream offered on campus. This will both reduce contamination between streams and raise personal accountability.
25. Establish a program in student housing to collect electronics, durables, appliances, clothing and cleaning supplies during move-out.
    a. The move-out process generates massive amounts of products and materials that still have a useful life. Donating electronics, durables, appliances and clothing to local thrift stores will ensure these materials will be diverted from the landfill and used to their fullest extent. Collecting and storing partially used cleaning supplies will reduce landfill inputs and provide supplies for new residents or students in need.
26. Provide bulk cardboard receptacles during move-in, and provide cardboard boxes during move-out
    a. Large amounts of cardboard are used during the move-in and move-out processes. Providing collection bins for this material will allow it to be effectively captured, baled and sold, while also introducing new students to CSUN's Zero Waste practices upon their arrival to housing. Providing students with boxes during move-out will allow these boxes to be re-used and reduce the need for residents to purchase new boxes.
27. Issue all new students living in university facilities individual room recycling collection bins with refillable beverage containers or water bottles and utensils.
    a. This will demonstrate to students that they are expected to participate in CSUN Zero Waste efforts, and offer them an easy way to do so.
28. Include proper recycling, composting and durables handling information in communicated move-in and move-out procedures

a. Awareness of waste streams and handling procedures during move-in and move-out will make it much easier for campus users to properly utilize the provided systems, making for smoother operation.

29. At the end of each term, provide each living unit with color coded bags for reusables and recyclables collection that can be easily brought to Zero Waste stations and reusable collection locations
    a. This will make proper diversion as simple and easy as possible, which will in turn maximize the amount of material recovered and properly diverted.
30. Provide drop-off locations or regular round-up events for electronics and household hazardous waste at all campus owned living facilities
    a. Students represent a significant producer of electronic waste and other hazardous waste, such as batteries or appliances. Providing collection locations for these materials will reduce the amount going to landfills.

Restrooms

31. Install hand dryers in place of paper towel dispensers in campus restrooms, including new construction and renovations, default to establish composting of paper towels if hand dryers cannot be installed
    a. This will save the campus thousands of dollars per year by greatly reducing the need to purchase paper towels and pay a waste hauler to dispose of them. It will also reduce servicing time by custodians, who will no longer need to refill paper towel dispensers or empty bins full of paper towels.

Grounds

Parking lots/structures

32. Provide landfill and recycling bins on all floors.
    a. Trash cans are already provided and serviced on surface lots and all floors of parking structures. Adding recycling bins will allow more recyclable material to be captured and sold by ASSR, increasing diversion rates while reducing waste hauling expenditures.

Campus Core

33. Compost all campus yard debris
    a. Composting yard debris on campus saves money by reducing the amount of waste CSUN pays to dispose of, as well as the associated greenhouse gas emissions from transporting that waste. It will also produce soil which can be used on campus.
34. Establish aesthetically pleasing, easily identifiable, central Zero Waste stations throughout the campus. Each station should have a receptacle for comingled recycling, landfill material and compostables
    a. Providing consistent three-stream diversion opportunities across campus is vital to a successful Zero Waste program. It ensures that users receive consistent messaging regarding their waste and its disposal regardless of where they are, and makes diversion bins easily recognizable.

Athletics Facilities

1. Ensure availability of water refill stations at all athletic and conference events, utilizing compostable cups if necessary
    a. This practice can eliminate the need for bottled water sales at athletic events, which will reduce clean-up costs and waste outputs. While these bottles are recyclable, they are resource-intensive to produce and still represent an unnecessary waste output. Providing water refill stations will encourage attendees to bring their own reusable bottles.
2. Provide triple-stream waste stations with clear signage throughout athletic facilities
    a. It is important that waste diversion opportunities are consistent and familiar across all of the CSUN campus, including athletic facilities. This will help campus users more easily identify the correct bin for their waste, since they are more likely to recognize the stations.

Programs and Processes

All programs and processes

3. Establish clear communication and expectations between facilities, custodial and ASSR staff
    a. As there are many entities on the CSUN campus responsible for waste and material management, it is vital that there is clear communication between the members of these groups. Having clearly defined roles, responsibilities, timelines and communication methods will help ensure the success of the Zero Waste program.
4. Discontinue mass print publications (examples: calendar of events, promotions, etc.), electronic announcements, email, calendars and e-boards should be used instead
    a. This will reduce printing and paper costs, while also eliminating a contributor to the campus waste stream. Sending one flier to a department as a whole, as opposed to sending one to each person in the department, will be similarly effective without creating excess material.

Waste audits

5. Publicize waste audits and data to the campus community
    a. Publicizing waste audits and their results will get more people interested in what the campus waste stream contains, and how they play a role in it. This greater engagement will help reduce contamination and increase diversion rates.
6. Create opportunities for students to interact with waste data in an educational setting
    a. Getting students involved with the Zero Waste program in an academic setting will help them better understand its function and impact. It will also build interest in the program's success, while allowing students to earn course credit while playing an active role in the success of CSUN's Zero Waste program.

New construction

7. Ensure campus construction projects are in compliance with zero-waste principles
    a. Construction and demolition are massive sources of waste. Making an effort to store or reuse leftover materials, recycle scrap material and reduce source inputs will greatly reduce the campus' waste stream.
8. Include waste diversion mandates in construction contracts
    a. Contractually binding contractors that operate on the CSUN campus will make it possible to hold them to certain standards regarding how much waste they produce, and how it is disposed of. It will also help push the industry as a whole in a more waste-minded direction, making it easier for contractors to adhere to waste goals as the practice becomes standardized.

Remodels

9. Establish an inventory and storage location for attic stock from campus remodels and new construction to be available for building repairs
    a. This will keep extra material from being thrown away or recycled, and save the campus money on future repairs and remodels because some materials will already be stocked.
10. Include Zero Waste principles in campus remodel projects
    a. Construction and remodel projects are massive sources of waste. Making an effort to store or reuse leftover materials, recycle scrap material and reduce source inputs will greatly reduce the campus' waste stream.

Demolition/deconstruction

11. Utilize deconstruction services wherever possible to salvage materials from buildings slated for demolition
    a. Deconstruction processes will recover a large amount of reusable material from a building before it is demolished. This would have a huge impact on the amount of waste that comes from the building when it is demolished, and give CSUN a large amount of material to utilize in other buildings.

Purchasing

12. Avoid over-ordering of goods which may become obsolete before they can be used
    a. This will save the campus money while simultaneously reducing unnecessary stockpiles of certain goods, which may expire. Thus, overall waste will be reduced as well.
13. Discourage the purchase of disposable plates, cups and utensils using p-cards or through Staples
    a. Purchase of single-use food ware by the campus is counterproductive and contrary to the campus' goal of Zero Waste by 2025. Disallowing the practice will send a strong message in favor of reusable plates, cups, bowls, and silverware. It will also save the campus money on purchasing and waste hauling costs.
14. Encourage the use of surplus property before ordering new items
    a. Surplus property has a large amount of furniture, filing cabinets and other materials that are still in serviceable condition. Greater utilization of this service by the campus will save money on the purchase of new items, and reduce greenhouse gas emissions associated with transporting these items to public auction and delivering new items to campus.
15. Track all campus purchases for alignment with the Environmentally Preferred Purchasing Policy
    a. Tracking purchases will help reveal what items represent larger inputs into the campus waste stream, and allow lower-waste alternatives to be identified and substituted.
16. Create and hold trainings to support the EPPP
    a. Continuously publicizing the EPPP will lead to greater awareness of the policy from campus members in charge of purchasing decisions. This will increase the number of purchases in which environmental impact, including waste inputs, is consciously considered.
17. Create focus group of personnel whose jobs include purchasing to discuss challenges, opportunities, trends, etc. pertaining to waste
    a. Using the data from tracking purchases and the expertise of those in charge of purchasing, the campus can identify trends, challenges, and opportunities to continuously reduce waste inputs from purchases.

Custodial/maintenance operations

18. Conduct building cleaning and maintenance in accordance with the campus green cleaning program. Utilize practices to reduce waste and product consumption from cleaning of buildings.
    a. Cleaning processes occur in every building on campus on a daily basis. Minimizing waste from these processes through selective product purchasing and efficient use of supplies will reduce campus waste outputs and have a positive upstream impact on the manufacturing of cleaning supplies.

Contracts

19. Establish contracts with vendors for "take-back" of products, components and packaging materials
    a. Communicating with vendors to implement reusable packaging would greatly reduce the amount of cardboard, plastic wrap and other materials disposed of on the CSUN campus.
20. Discontinue the sale of disposable water bottles from vending machines on campus
    a. This would incentivize campus users to bring their own reusable water bottle to campus, and utilize the water refill stations located in most buildings.
21. Replace plastic bottles from vending machines with aluminum containers
    a. Because aluminum is infinitely recyclable, and plastics can only be recycled into lower-quality plastics, switching out aluminum for plastic will have a positive upstream impact by reducing the number of plastic bottles manufactured and increasing the recycling of aluminum.

Unconventional materials

22. Ensure industrial recycling of all industrial waste produced on campus such as: wood, vehicle batteries, scrap metal, wire, concrete, tires and any other items that have a potential local market
    a. Many of these products can be sold or recycled, which is much more cost-effective than paying to have them sent to a landfill while also reducing campus waste outputs.
23. Store overstock usable materials and chemicals for future use and/or dispose of them in a safe manner through recycling or hazardous materials handling
    a. Proper storage and inventory management of these items will allow them to be more easily used, as opposed to needing to be disposed of.
24. Educate and train building occupants to responsibly dispose of or recycle electronics, including office equipment and appliances, via established procedures or through Asset Management. Communicate dates, times and special collection opportunities to building occupants to maximize the success of the program
    a. Despite the electronics recycling services offered by ASSR, many electronics on campus are still disposed of in the landfill. Mandating the recycling of these items will reduce waste hauling costs and increase the campus diversion rate. Additionally, making people aware of diversion opportunities for unconventional materials greatly increases the likelihood that they will be recycled, thus increasing the campus diversion rate.

Matador exchange

25. Expand marketing of the Matador Exchange
    a. The Matador Exchange is an exclusive online service that allows campus members to buy and sell goods that they no longer want. Introducing more people to this program can greatly increase the number of products and goods being reused or resold, as opposed to being thrown away on campus.

Re-use room

26. Provide building occupants with re-use containers in building storage rooms to manage durable goods
    a. Office supplies, dishes, appliances and other items that are still in serviceable condition but no longer wanted can be easily diverted from the waste stream by providing a space where they can be reclaimed by other building occupants.

Education

27. 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
    a. Education is an absolutely critical part of the Zero Waste program. Successful education efforts will lead to a campus population that is well informed on proper waste disposal practices, as well as what materials go in which bins. This will greatly reduce contamination and maximize recyclables recovered for resale.
28. Teach offices about electronics recycling and how to use it, since they are the largest source of e-waste
    a. Some amount of e-waste is disposed of in CSUN's landfill stream, largely because office occupants are not aware of how to have it properly recycled. Making more people aware of this program offered by ASSR will reduce landfill inputs and increase the amount of material recycled by CSUN.

29. Communicate with all building occupants on university property and Asset Management handling rules including location of online forms and campus contacts
    a. Helping building occupants properly utilize asset management can reduce the amount of material AM has to send to public auction, as well as reduce campus purchases. It will also help ensure the proper disposal of unconventional items.
30. Provide each resident with information in new student orientation regarding Zero Waste systems and information on how to properly dispose of all materials generated in student living facilities
    a. Education is key to achieving Zero Waste. It is imperative that campus users, especially residents, have a good understanding of how the Zero Waste program functions, and how they play a role in its success.
31. Create student Zero Waste ambassadors – Trash Talkers
    a. Stationing student volunteers at campus bins to assist with sorting will greatly reduce contamination. Giving a student voice to the Zero Waste initiative will also provide an avenue for direct student outreach, and students can give the program managers valuable insight into student attitudes and behaviors surrounding the Zero Waste initiative.

Reusables

32. Provide opportunities for employees and students to receive reusable items such as water bottles, beverage mugs, utensils, bags, etc. Explain the environmental benefits and create incentives to encourage the use of reusable products.
    a. While phasing out single-use inputs, it is important that campus users feel as though they have a viable alternative, and that they are not being forced to comply with a program they feel goes against their interests (convenience, money). Providing opportunities for them to receive free reusable items will help smooth the transition to Zero Waste, and increase the number of people who use reusable items on campus.

Events and Services

All Events

33. Transition all campus, athletic and other events to Zero Waste events, from inputs to outputs, and to be handled as such. Clearly communicate these goals to attendees, caterers and vendors
    a. Events represent large sources of waste, producing food and food service waste, paper, bottled water and other materials. Integrating Zero Waste practices into all campus events will greatly

reduce their waste outputs and provide high-visibility messaging for the campus Zero Waste program.

34. Require outside vendors to comply with the university's policies regarding food waste, bags and other Zero Waste practices
    a. Campus Zero Waste practices can be undermined be vendors who pass out plastic straws and cutlery, single-use water bottles, non-compostable food service items and other materials not designed for the campus' Zero Waste system. Ensuring vendors understand and comply with these practices will help the program run smoothly, while keeping the materials and messaging being distributed to the campus community consistent.
35. Create formal zero-waste procedure for events
    a. Standardizing an official procedure, including personnel and infrastructure, for events will ensure that the implementation of the Zero Waste program is not a detriment to the smooth functioning of any events. It will help ensure effective communication, delegate responsibility and authority, and streamline the process as a whole.

Catering

36. Ensure all food ware and other single use inputs are compostable and compatible with the university's compost processing mechanism
    a. Composting food ware and other single-use inputs will dramatically increase the amount of material CSUN is able to divert from the landfill.
37. Avoid individually-packaged food items in favor of buffet-style service. Utilize bulk options instead of single-serving packages of items such as chips, cookies and condiments
    a. Serving meals buffet-style will reduce the prep time required to assemble individual meals, as well as all the associated packaging. It will also allow diners to select only the items they want to eat, so that excess food is left on the buffet table where it can potentially be stored and saved for later.

Water

38. Install refill spouts on all drinking fountains
    a. A large portion of the campus population already brings their own reusable water bottle to campus. Giving these users sufficient opportunities to refill their bottles will ensure that they continue to use them, and make it easier for additional campus users to bring their own bottles as well. This will greatly reduce the waste caused by single-use plastic bottles on campus.
39. For all campus events, offer free urns of drinking water for all participants
    a. This practice can eliminate the need for bottled water sales at events, which will reduce clean-up costs and waste outputs. While these bottles are recyclable, they are resource-intensive to produce and still represent an unnecessary output. Providing water refill stations will encourage attendees to bring their own bottles.

Printing

40. Ensure all printers default to double-sided printing
    a. Many printers on campus do not default to double-sided printing, placing the responsibility on the user to consciously select this option. Defaulting to double-sided printing can reduce the paper consumption of these printers by half.
41. Implement managed print services
    a. This will greatly decrease paper usage across campus, saving money on toner, paper, and paper recycling.

42. Implement digital signature platform
    a. A digital signature platform will lead to a significant reduction in paper usage, due to the number of forms requiring multiple signatures that are repeatedly printed and signed on a daily basis. This will save money on ink, toner and paper hauling.

Asset management

43. Streamline organization and accessibility of surplus property
    a. In addition to education people about how to use asset management, their inventory must be easily searchable for people to successfully find available items. Streamlining its organization and improving accessibility will lead to greater utilization of Asset Management by the campus community. This will reduce purchases of new items and prevent items from having to be transported to auction.
44. Insert a reminder into the purchasing process to utilize Asset Management
    a. Despite training and marketing efforts, many people may not consult Asset Management before making new purchases. Integrating an automatic reminder into the purchasing process will increase the number of people consulting Asset Management, ultimately decreasing purchases of new goods by the campus. This will save costs and eliminate the waste associated with packaging and shipping these purchases.

Waste Data

45. Make more data publicly available, and advertise its accessibility
    a. As people explore CSUN's waste data, the campus will become more informed on the campus' waste stream, common contaminants, and what materials comprise CSUN's waste. This will enable campus users to make more informed decisions when attempting to reduce their own waste output.

Policies

46. Disposal hierarchy: reduce, reuse, sell, donate, recycle, landfill
    a. Formalizing this hierarchy and making the campus population aware of it will help shift the campus mindset more towards Zero Waste, and help create a culture of sustainability. It also illustrates the fact that recycle is only the second-worse option, helping steer people more towards reusable products.
47. Zero Waste purchasing policy
    a. Much like the environmentally preferred purchasing policy, a Zero Waste purchasing policy would identify products with low inputs to the campus waste stream, and serve as a guide for purchasing decisions. Eventually, low and zero-waste alternatives for common products can be automatically substituted in, so that campus purchases generate less waste over time.

Recommended Practices

48. Reduce paper fliers by providing a full-size printout that people can photograph
    a. Paper fliers are useful for providing information, but they often end up as litter, or in the best case, are recycled. Providing a single large version of the flier for people to photograph with their phones will reduce a campus waste input, while also decreasing paper and printer usage.
49. Ensure the presence of a drying rack and towel for reusable cutlery and dishes in department kitchens equipped with sinks
    a. A drying rack will allow for greater use of reusable food-ware by office occupants, reducing the amount of paper plates, cups, bowls and plastic utensils used in office kitchens.

Implementation Timeline and Diversion Rate Projections

Implementation Approach

The strategies described in this plan outline clear steps on CSUN's path to achieving Zero Waste. While it is likely that not every strategy can be implemented 100% effectively, each one will have an impact by reducing waste inputs, increasing waste diversion through reuse, donation, recycling and composting, and guiding consumers in adopting zero-waste habits. This multi-faceted approach will target every aspect of the campus' waste systems to educate campus users, increase diversion rates, reduce landfill bound materials and ultimately achieve Zero Waste by 2025.

Plan implementation will be overseen by the presidentially appointed Zero Waste Committee. This committee will have representatives from each University Division at the Associate Vice President and Dean levels. A committee driven by high-level leadership is more likely to achieve awareness and adoption of the Zero Waste Plan throughout all Divisions and areas at the University. This committee will utilize the existing Waste & Materials Management Working Group, consisting of representatives from each entity discussed within the Plan, to assist with the plan implementation. These groups will meet on a monthly basis to discuss and actualize the strategies contained within the plan. Committee members will identify the most pertinent strategies for their division or program area and work with the committee to implement these strategies. While many measures center on physical infrastructure improvements, user education and behavior change are implicit in every strategy, and should be pursued in conjunction with each project. This holistic approach will push the campus culture to evolve alongside its infrastructure, promoting a greater awareness of habits and practices that produce, divert and reduce waste. Progress and impact of these strategies will be tracked by analyzing landfill, compost and recycling data provided by the campus waste hauler, Institute for Sustainability, Associated Students Sustainability and Recycling and other campus entities. Committee Members will also share feedback from their program areas, as well as their own observations of how different strategies have impacted operations and behavior. The Working Group will release a progress report on an annual basis, detailing the accomplishments and shortfalls of the year's Zero Waste efforts, and outlining priorities for the coming year.

A variety of funding avenues will be pursued to support Zero Waste initiatives. In addition to internal budgetary funding, grants and sponsorship opportunities will be sought to enable the implementation of infrastructure-focused strategies such as bin deployment and signage expansions. Material rebate funds received from the campus' waste hauler will be used to support the Zero Waste initiative.

Timeline, Costs and Savings

Plan implementation has been broken into three phases, with each one taking place over the next two, five and eight years. Strategies are identified as belonging to one of these three phases based on their ease of completion, number of parties involved, funding requirements and availability, and infrastructure needs. Phase three strategies will still see progress during the first years of implementation, but they are not expected to be fully complete within the first two or even five years. Listed below are all identified Zero Waste strategies with their associated phase and estimated costs and savings. Costs and savings were calculated based on a variety of data regarding campus facilities, expenditures, existing and required infrastructure, waste streams, personnel, costs of services and other factors. Due to data limitations and uncertainties such as consumer behavior, space availability and the value of different products, costs and savings could not be calculated for every item. In select cases, figures were approximated based on the costs and savings associated with comparable programs or activities that had previously been completed.

#	Strategy	Phase	Estimated Initial Cost	Estimated Annual Savings/Revenue	Ongoing Costs
	General Strategies				
1	Ensure that all waste stations in all campus locations have receptacles for landfill material, compostables and recyclables	2	$1,998,200	$ -	$ -
2	Standardize signage across all of campus, include product transformation awareness in marketing	1	$5,070	$ -	$507
3	Integrate all campus waste and waste reduction operations (AS recycling, purchasing, custodial, shredding, asset management, reuse, food recovery network, etc.) into one webpage entitled "Campus Zero Waste Program".	1	$ -	$ -	$ -
4	Utilize a Material Recovery Facility through the campus waste hauler that allows for the diversion of scrap metal, wood, non-CRV plastic, glass and metal containers, and other recoverables that cannot be diverted through campus activities.	1	$ -	$ -	$ -
5	Take advantage of programs to recycle materials that are typically landfilled, such as snack wrappers and toiletries	2	$ -	$ -	$4,500
6	Strengthen the cardboard recycling program to capture all cardboard from all campus entities	1	$ -	$ -	$ -
7	Create a guide for all campus meetings, conferences and events, whether catered or not, to incorporate zero waste practices	1	$ -	$ -	$ -
8	Expand composting program to include post-consumer waste	2	$38,508	$ -	$ -
9	Create and market a year-round donation/recycling program for textiles and shoes	2	$ -	$ -	$ -
10	Create and deploy a Zero Waste education program targeted towards students, faculty and staff. Include information about waste goals, signage, programs, processes and other pertinent changes that will result from the plan's implementation	1	*$5,000*	$ -	*$5,000*
	Building Strategies				
	All buildings				
11	Provide receptacles for organics, recyclables and landfill in all buildings	1	$147,600	$ -	$ -
12	Provide paper recycling near printers and in other key locations	1	$74,000	$ -	$ -

13	Transition away from standard desk side landfill receptacles and toward centrally located Zero Waste stations for all campus units	1	$ -	$149,987	$ -
	Academic/office buildings				
14	Remove waste receptacles from classrooms, and provide centrally located Zero Waste stations in hallways and common areas	2	$ -	$25,870	$ -
15	Provide self-serviced desk side bins only for paper recycling, with central bins for comingled recycling, compost and landfill waste	1	$ -	$ -	$ -
	Food service facilities				
16	Ensure all service ware and other single-use inputs are compostable and compatible with the university's compost processing system	2	$ -	$ -	$ -
17	Purchase and utilize durable service ware as much as possible in all campus food service and housing locations	2	$18,600	$12,000	$1,780
18	Discontinue the use of plastic straws, take-out bags and other single-use plastics on campus	1	$ -	$ -	$ -
19	Provide greater incentives for reusable flatware, coffee cups, etc.	1	$ -	$1,467	$6,522
20	Create pricing structure that favors use of durables in lieu of disposables, compostables or recyclables	2	$ -	$142,922	$ -
	Mercado/bookstore				
21	Stock more goods with recyclable/compostable packaging, replace disposable packaging with recyclable/reusable options where possible	3	$ -	$ -	$ -
22	Eliminate plastic take out bags on campus	1	$ -	$ -	$ -
23	Transition products to bulk purchasing wherever possible, provide incentives for reusable container use	3	$18,600	$ -	$ -
	Housing				
24	Ensure each housing resident in student housing has equal access to landfill, recycling and composting receptacles, both centrally-located and in-unit	2	$102,600	$ -	$ -
25	Establish a program in student housing to collect electronics, durables, appliances, clothing and cleaning supplies during move-out	1	*$5,000*	$ -	*$1,000*
26	Provide bulk cardboard receptacles at student housing during move-in	1	$8,000	$ -	$ -

27	Issue all new students living in university facilities refillable beverage containers or water bottles and utensils	2	$21,112	$ -	$ -
28	Include proper recycling, composting and durables handling information in communicated move-in and move-out procedures	1	$ -	$ -	$ -
29	At the end of each term, provide each living unit with color coded bags for reusables and recyclables collection that can be easily brought to zero waste stations and reusable collection locations	1	$300	$ -	$ -
30	Provide drop-off locations or regular round-up events for electronics and household hazardous waste at all campus owned living facilities	2	$ -	$ -	$ -
	Restrooms				
31	Install hand dryers in place of paper towel dispensers in campus restrooms, including new construction and renovations, default to establish composting of paper towels if hand dryers are not installed	3	$1,120,000	$100,000	$ -
	Grounds Strategies				
	Parking lots/structures				
32	Provide landfill and recycling bins on all floors and lots	1	$14,700	$ -	$ -
	Campus Core				
33	Compost all campus yard debris	1	$ -	$15,327	$ -
34	Establish aesthetically pleasing, easily identifiable, central zero waste stations throughout campus. Each station should have a container for comingled recycling, landfill material and compostables	1	$1,549,300	$ -	$ -
	Athletic Facilities				
35	Ensure availability of water refill stations at all athletic and conference events, utilizing compostable cups if necessary	2	$20,000	$ -	$ -
36	Provide triple-stream waste stations throughout outdoor athletic facilities with clear signage	2	$110,000	$ -	$ -
	Programs & Process Strategies				
	All Programs & Processes				
37	Establish clear communication and expectations between facilities, custodial and ASSR staff	1	$ -	$ -	$ -

38	Discontinue mass publications (examples: calendar of events, promotions, etc.) in favor or electronic communications via email or digital signage	2	$ -	*$30,000*	$ -
	Waste audits				
39	Publicize waste audits and data to campus community	1	*$1,000*	$ -	$ -
40	Create opportunities for students to interact with waste data in an educational setting	1	$ -	$ -	$ -
	New Construction				
41	Ensure campus construction projects are in compliance with zero-waste principles	3	$ -	$ -	$ -
42	Include waste diversion mandates in construction contracts	3	$ -	$ -	$ -
	Remodels				
43	Establish an inventory and storage location for attic stock from campus remodels and new construction to be available for building repairs	3	$ -	$ -	$ -
44	Include zero waste principles in campus remodel projects	3	$ -	$ -	$ -
	Demolition/deconstruction				
45	Utilize deconstruction services wherever possible to salvage materials from buildings slated for demolition	3	$ -	$ -	$ -
	Purchasing				
46	Avoid over-ordering of goods which may become obsolete before they can be used	1	$ -	$ -	$ -
47	Discourage the purchase of disposable plates, cups and utensils using p-cards or through Staples	2	$ -	$2,733	$ -
48	Encourage the use of surplus property before ordering new items	1	$ -	$ -	$ -
49	Track all campus purchases for alignment with the EPPP	1	$ -	$ -	$ -
50	Create and hold trainings to support the EPPP	1	$ -	$ -	$ -

51	Create focus group of personnel whose jobs include purchasing to discuss challenges, opportunities, trends, etc. pertaining to waste	1	$ -	$ -	$ -
	Custodial/maintenance ops				
52	Conduct building cleaning and maintenance in accordance with the campus green cleaning program. Utilize practices to reduce waste and product consumption from cleaning of buildings.	1	$ -	$ -	$ -
	Contracts				
53	Establish contracts with vendors for "take-back" of products, components and packaging materials	2	$ -	$ -	$ -
54	Discontinue the sale of disposable water bottles from vending machines on campus	3	$ -	$ -	$ -
55	Replace plastic bottles from vending machines with aluminum containers	3	$ -	$ -	$ -
	Unconventional materials				
56	Ensure industrial recycling of all industrial waste produced on campus such as: wood, vehicle batteries, scrap metal, wire, concrete, tires and any other items that have a potential local market	2	$ -	$ -	$ -
57	Store overstock usable materials and chemicals for future use and/or dispose of them in a safe manner through recycling or hazardous materials handling	2	$ -	$ -	$ -
58	Educate and Train building occupants to responsibly dispose of or recycle electronics, including office equipment and appliances, via established procedures or through Asset Management. Communicate special collection opportunities to maximize the success of the program	1	$ -	$ -	$ -
59	Expand Marketing of Matador Exchange	1	$ -	$ -	$ -
	Re-use Room				
60	Provide building occupants with centralized durables collection containers in building storage rooms to manage durable goods	1	*$10,000*	*$1,000*	*$2,000*
	Education				
61	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	$ -	$ -	$ -

62	Teach offices about electronics recycling and how to use it, since they are the largest source of e-waste	1	$ -	$ -	$ -
63	Communicate university property and Asset Management handling rules, including location of online forms and campus contacts, to all building occupants.	1	$ -	$ -	$ -
64	Provide each resident with information in new student orientation regarding zero waste systems and information on how to properly dispose of all materials generated in student living facilities	1	$ -	$ -	$ -
65	Create student zero waste ambassadors – Trash Talkers	2	*$1,500*	$ -	*$2,000*
	Reusables				
66	Provide opportunities for employees and students to receive reusable accoutrements such as water bottles, beverage mugs, utensils, bags, etc. Explain the associated benefits and create incentives to encourage the use of reusable products.	2	$83,200	$ -	$83,200
	Events and Services Strategies				
	Events and Services				
67	Transition all campus, athletic and other events to zero waste events, from inputs to outputs, and to be handled as such. Clearly communicate these goals to attendees, caterers and vendors	2	$ -	$ -	$ -
68	Require outside vendors to comply with the university's policies regarding food packaging, bags and other zero waste practices	3	$ -	$ -	$ -
69	Create formal zero-waste procedure for events	1	$ -	$ -	$ -
	Catering				
70	Ensure all single use inputs are recyclable or compatible with the university's compost processing mechanism	1	$ -	$ -	$ -
71	Avoid individually-packaged food items in favor of buffet-style service. Utilize bulk options instead of single-serving packages of items such as chips, cookies and condiments	2	$ -	$ -	$ -
	Water				
72	Install refill spouts on all drinking fountains	3	$39,560	$ -	$ -
73	For all campus events, offer free urns of drinking water for all participants while eliminating bottled water wherever possible	2	$7,200	$ -	$ -
	Printing				

74	Ensure all printers default to double-sided printing	2	$ -	$ -	$ -
75	Implement managed print services	2	$ -	$ -	$ -
76	Implement digital signature platform	1	$ -	$ -	$ -
	Asset Management				
77	Streamline organization and accessibility of surplus property	1	$ -	$ -	$ -
78	Insert a reminder into the purchasing process to utilize Asset Management	1	$ -	$ -	$ -
	Waste Data				
79	Make more data publicly available, and advertise its accessibility	1	$ -	$ -	$ -
	Policy Strategies				
80	Disposal hierarchy: reduce, reuse, sell, donate, recycle, landfill	1	$ -	$ -	$ -
81	Zero waste purchasing policy	1	$ -	$ -	$ -
	Total Cost and Savings		$3,395,850	$481,307	$101,509

*Numbers in italics have been approximated based on the costs and savings associated with comparable programs or activities

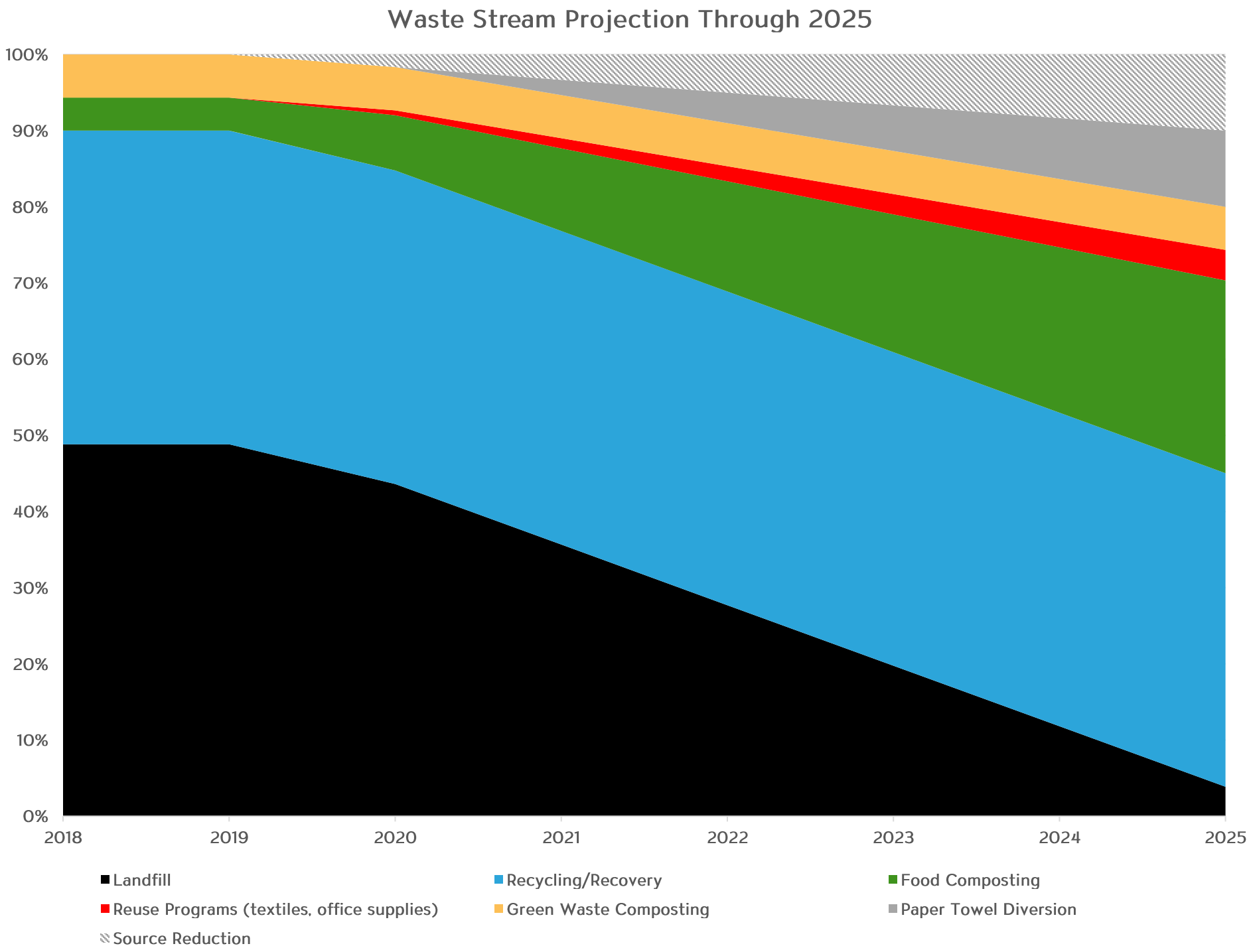
Tracking Progress towards Zero Waste

Progress towards this goal will tracked using data from a variety of sources. The campus waste hauler, Asset Management, TUC, The Institute for Sustainability, Food Recovery Network and ASSR all regularly report the weights of materials they collect and divert. This data is publicly available and will be reviewed on a regular basis to assess CSUN's progress towards its waste goals. Additionally, CSUN generates an annual waste management report through the State Agency Reporting Center, which is used to calculate the university's disposal rates for employees and students. Lastly, the campus will conduct waste audits on an annual basis so as to continuously have specific characterizations of CSUN's waste stream. These strategies will produce a wide variety of continuously updated data to accurately track progress and inform planning decisions.

Diversion Projections

The strategies outlined in this plan are considered industry best practices and steps that must be taken to move towards the goal of Zero Waste. Because many of these strategies revolve around human behavior, it is difficult to gauge their overall impact on the campus' waste systems. That being said, waste audits conducted by campus entities and the campus waste hauler have produced data which can be used to forecast the results of certain waste reduction and diversion activities. Because precise weights for each material type from every campus entity were not readily available, some waste stream components were extrapolated from visual inspections of waste outputs in conjunction with available data in order to generate a complete characterization. The following projections endeavor to quantify the outcomes of this plan based upon these characterizations of CSUN's waste stream.

Year	New Diversion	Total diversion	Landfill Tonnage	Newly Diverted Tonnage
2018	0%	51%	1,117	0
2019	0%	51%	1,117	0
2020	5%	56%	997	119
2021	13%	64%	815	301
2022	21%	72%	634	483
2023	29%	80%	452	665
2024	37%	88%	270	846
2025	45%	96%	88	1,028


Waste Stream Projection Through 2025
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2018
2019
2020
2021
2022
2023
2024
2025
Landfill
Recycling/Recovery
Food Composting
Reuse Programs (textiles, office supplies)
Green Waste Composting
Paper Towel Diversion
Source Reduction


KING SIZE
XC008-003
Mint Drums
KEEP FROZEN