

THE CHARGING STATION

THE OFFICIAL NEWSLETTER OF A²ZERO AND
THE ANN ARBOR OFFICE OF SUSTAINABILITY AND INNOVATIONS



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ABOUT THE EDITOR



Will Garcia (he/him), Sustainability Coordinator – Circular Economy, works in programs and initiatives that reduce waste and improve the life cycle of materials. To learn more about the work mentioned in this issue or his other circular economy work, he can be reached at wgarcia@a2gov.org.



Seven-foot-tall sunflowers growing in the Bryant neighborhood.

WELCOME

Welcome from the City of Ann Arbor’s Office of Sustainability and Innovations (OSI). In this issue of the Charging Station, OSI is delighted to share details about what Ann Arbor is doing to transform the lifecycle of our electronics. If you are interested in learning more about any of the organizations featured in this issue and how you can get involved, more detail can be found on our website: www.a2gov.org/circulareconomy. As always, thank you for your interest in sustainability activities in Ann Arbor!

LAND ACKNOWLEDGEMENT

Equity and justice are at the center of A²ZERO and staff in OSI are continuing to ground our work in these critical principles. In that light, we’d like to take a moment to honor the geographic and historic space we share. We acknowledge that the land the City of Ann Arbor occupies is the ancestral, traditional, and contemporary lands of the Anishinaabe and Wyandot peoples. We further acknowledge that our city stands, like almost all property in the United States, on lands obtained, generally in unconscionable ways, from indigenous peoples. The taking of this land was formalized by the Treaty of Detroit in 1807. Knowing where we live, work, study, and recreate does not change the past, but a thorough understanding of the ongoing consequences of this past can empower us in our work to create a future that supports human flourishing and justice for all individuals.

GLOBAL AND LOCAL ELECTRONIC WASTE

UPCOMING ELECTRONIC TAKEBACK EVENT OCTOBER 19

Electronic waste is [the fastest-growing waste stream on the planet](#). The 62 million tons of electronic waste that were generated globally in 2022 marked an [82% increase from 2010](#). These numbers reflect an increasingly digital society: one in which increased distribution of devices like computers, tablets, and phones has increased access to information around the world.

Unfortunately, these alarming figures also reflect shorter product lifecycles, limits in repair options, and under-equipped infrastructure to sustainably reuse and recycle the vast amount of electronics being manufactured, purchased, used, and disposed of locally and around the world. Today, [fewer than 1 in 4 electronic devices get recycled worldwide](#). The United States falls below global averages, with Americans recycling [fewer than 1 in 6 electronic devices](#).

Electronics contain toxic metals such as cadmium, mercury, lithium, and lead, making it urgent for these items to be managed and processed in ways that are sustainable for environmental and human health. According to an investigation by the Basel Action Network and Massachusetts Institute of Technology, 1 in 3 American electronic waste items set for recycling are [exported](#) internationally, often to nations in the global south, making sustainable end-of-life management of electronic wastes a global public health issue. Electronics recycling workers in low-and middle-income countries often have few environmental and human health protections as they perform the incredibly important task of managing

the world's electronic waste, with common practices including [open burning of electronics](#), [the use of acid baths for material recovery](#), and a [lack of personal protective equipment](#). Exposure to toxic metals from such practices creates [a wide variety of negative health outcomes](#) for these workers, with children and pregnant women who work in these environments being particularly vulnerable.

In addition to pollution, human health, and environmental justice concerns, electronics are also a substantial and growing source of carbon emissions. Between 2014 and 2020, the carbon emissions associated with electronic waste [increased by 53%](#), with approximately 850 million metric tons of CO2 projected to be emitted each year from electronic waste by 2030. Notably, [approximately two-thirds of emissions](#) associated with electronic devices are embodied carbon – deriving from the mining, manufacturing, and transportation of these products. A laptop, desktop computer, or display (TV or monitor) is estimated to be responsible for [more than a quarter ton of carbon emissions](#) before it even gets turned on for the first time.

Given these considerations, creating opportunities for technology devices in our community to be reused, refurbished, and recycled fits squarely within Strategy 5, "Change the Way we Use, Reuse, and Dispose of Materials" of [the A²ZERO plan](#). As OSI Senior Analyst Sean Reynolds wrote in our [August 2023 issue](#), Ann Arbor's vision in transitioning to a circular economy is to reduce emissions,

minimize waste, prevent pollution, and address systemic inequities by reusing, re-purposing, and – when necessary – recycling our materials, items, and resources. To create a more circular approach for managing our community's electronic waste, we are excited to announce that OSI will be hosting our first Electronics Takeback on Saturday, October 19th from 10am-1pm. While the event has sold out, those interested in making sure their items are reused or recycled can check out [Washtenaw County's Trash to Treasure Guide](#), or reach out to Will Garcia with any questions at wgarcia@a2gov.org.

At the upcoming Electronics Takeback, residents can bring desktop computers, laptops, networking equipment, tablets, phones, and cords/wires to be sustainably reused and recycled for free. Residents can additionally bring one printer and one monitor or television weighing up to 60 lb at no charge; which includes most flat TVs 50" and under and most tube TVs 24" and under. Additional TVs and printers will cost \$10, payable by cash or credit/debit card. Notably, Comprenew, the nonprofit electronics recycler that the Office of Sustainability and Innovations is excited to be working with for this event, will be refurbishing and reusing devices in good condition – after wiping every device to federal standards to ensure that all data is removed.

To learn more about this upcoming event and others like it, visit osi.a2gov.org/events.

COLLABORATOR SPOTLIGHT: COMPRENEW

TURNING END-OF-LIFE INTO A NEW LIFE

If there is one thing that Comprenew's Vice President of Operations Alex Karatkiewicz made clear during our interview with him, it's that "recycling doesn't mean 'end-of-life'."

"End-of-life management", a common term in the materials management industry, generally refers to managing products that have reached the end of their usable lifespan and are set to be discarded.

As a highly-certified nonprofit recycler that has spent 38 years giving new life to electronics, it's easy to see why "end-of-life" isn't in Comprenew's vocabulary.

Based in Grand Rapids, Michigan, Comprenew has processed 68 million pounds of electronic waste since its founding in 1986. As Karatkiewicz says, "These electronic devices have been produced for decades now, and it only increases year by year. It all has to go somewhere."

He continues, "If it lights up, plugs in, or takes a battery, we'll take it from you and make sure that it goes to the right place."

Comprenew's philosophy is that finding this "right place" for items includes reusing technology devices whenever possible. To achieve this, Comprenew operates three stores that sell refurbished electronics at a discounted rate, a repair shop in west Michigan, [an online webstore for reused tech](#), and social impact programs that provide computers to people who need them. Through their Connect All Michigan Program (CAMP), the organization has provided over 560 computers to low-income families, working with area school districts, social service agencies, and refugee resettlement organizations to distribute the devices and provide training when needed.

As Karatkiewicz notes, "The world is moving more and more digital every day. With job interviews, working from home, and accessing community resources now being online, you almost have to be part of the digital climate. Having programs that provide those resources and literacy go a long way to make this space equitable."

For items that cannot be reused, Comprenew thoroughly evaluates their downstream recyclers who serve as processors for individual components of devices, like batteries or circuit boards. Unlike some other recyclers, who frequently ship items internationally for processing, Karatkiewicz claims that many of Comprenew's downstream processors are in the Midwest.



COMPREENEW®



Comprenew staff working to recycle donated materials.

COLLABORATOR SPOTLIGHT: COMPRENEW

TURNING END-OF-LIFE INTO A NEW LIFE

In addition to due diligence of downstream recyclers, Comprenew's approach to responsible recycling also includes finding recycling opportunities for all of the components and materials in the devices they collect, not just the valuable precious metals. Of particular note is plastics, with Karatkiewicz mentioning that while the fire-resistant chemicals inside of electronics plastics can make them difficult to recycle, the organization approaches this by finding ways to recycle whole devices.

In addition to protecting our environment, responsible recycling also has to protect our data. With studies showing that the production of a newer solid state storage drive generates approximately 320 kg (approximately 700 lb) of carbon dioxide equivalent emissions, finding safe ways to wipe and reuse our storage drives is as crucial as ever to protecting our information and our planet. Karatkiewicz notes that Comprenew's certifications, including i-Sigma's NAID AAA data protection certification, requires them to adhere to stringent standards in wiping data, saying "We have military grade standards for the way we handle data. And we sometimes have opportunities to reuse those drives. People will always say 'Do I need to wipe it before I give it to you?' and I say 'Sure, but we do it better!'"

The City of Ann Arbor's Office of Sustainability and Innovations will be working with Comprenew on a series of electronics takeback events throughout the year. The first of these events will be on Saturday, October 19th, from 10am-1pm at Pioneer High School ([register here](#)). The partnership will additionally create programs to get the devices in good condition that are collected at these events recirculated back into the Ann Arbor community, promoting digital equity by getting technology into the hands of people in our community who need it.

Throughout this partnership, OSI and Comprenew will reduce carbon emissions and promote equity in the Ann Arbor community through the reuse, repair, refurbishment, recycling, and redistribution of electronics

Just don't call it "end-of-life management."

CONNECT WITH A²ZERO

[INSTAGRAM](#) | [FACEBOOK](#) | sustainability@a2gov.org
a2zero.org | [JOIN OUR MAILING LIST](#) | [YOUTUBE](#)

Ann Arbor Proposal A: Creation of a Sustainable Energy Utility (SEU) will be on the November 5 ballot. If authorized, the SEU...

Will:

- **Improve resilience** by investing in onsite renewable energy and energy storage
- **Improve reliability** by generating energy locally
- Generate **clean, 100% renewable** energy only
- **Be flexible** – users can sign up for whatever SEU services are right for them

Will not:

- **Raise taxes** – only those who choose SEU services will pay for SEU services
- **Require DTE's existing infrastructure** (e.g., poles, wires, trucks)
- **Be mandatory** – only those who sign up will receive SEU services
- **Be exclusionary** – SEU customers can remain DTE customers

Learn more at a2gov.org/a2seu.

A2R3: PATH TO CITYWIDE RETURNABLES

PROJECT UPDATE AND POTENTIAL GRANT FUNDING

PROJECT UPDATE

The A2R3 project seeks to create a universal, municipal-scale system for returnable food and beverage containers to replace single-use packaging in Ann Arbor's institutions, venues, and restaurants. This project envisions the physical and social infrastructure necessary for this system to become the primary form of materials management for food and beverage, addressing localized plastic pollution at the source by preventing the generation of plastics. This project plans to maximize benefits for our community by pioneering a universally accessible and equitable return incentive system, providing assistance for costs associated with moving from single-use to returnable containers for businesses and institutions, and building the system's washing and transportation facilities to create green jobs.

This system envisions the physical and social infrastructure needed to allow anyone who orders food or drinks that would historically be provided in a single use container to receive a returnable container instead. This reduces localized plastic pollution in the Huron River, and by extension, the Great Lakes. Further, the project will create employment opportunities by creating a centralized container washing facility and requiring transportation of the containers to and from participating establishments.

TO FUND THIS WORK, OSI IS PURSUING A GRANT

The Environmental and Climate Justice Community Change Grant program (Community Change Grants) offers an unprecedented opportunity to transform communities across the United States into healthy, climate resilient, and thriving communities for their current and future residents. The Community Change Grants will fund community-driven projects that address climate challenges and reduce pollution while strengthening communities through thoughtful implementation. Track I applications – Community-Driven Investments for Change focuses on multi-faceted applications with Climate Action and Pollution Reduction Strategies to meaningfully improve the environmental, climate, and resilience conditions affecting historically underinvested-in communities. Awards under Track I are expected to be \$10-20 million each and cannot exceed \$20 million. EPA expects to award approximately \$1.96 billion for approximately 150 Track I awards. The historic levels of support provided by these grants will enable communities and their partners to overcome longstanding environmental challenges and implement meaningful solutions to meet community needs now and for generations to come.

If you are interested in supporting this work, a letter of support would be greatly appreciated. These letters of support can be emailed to sustainability@a2gov.org.

UPCOMING EVENTS

ELECTRONICS TAKEBACK | Oct. 19, 10AM – 1PM | *Registration required*

Residents can bring desktop computers, laptops, small printers, networking equipment, tablets, phones, and cords/wires to be sustainably reused and recycled for free. The event has sold out, but those interested in making sure their items are reused or recycled can check out [Washtenaw County's Trash to Treasure Guide](#), or reach out to Will Garcia with any questions at wgarcia@a2gov.org.

SUSTAINABLE LAWN CARE LEARNING SESSION | Oct. 21, 4 – 6PM | *Cobblestone Farm*

Are you a homeowner, lawn care service provider, or property manager interested in learning more about electric lawn care, or sustainable lawn care in general? Join us to see electric lawn care equipment in action and get your questions answered! [Those interested can RSVP here](#). Reach out to Carissa Ebling at cebbling@a2gov.org with any questions.

For more information on our upcoming events, please visit www.a2gov.org/sustainability/events.

HIGHLIGHTS FROM TÜBINGEN VISIT

ANN ARBOR'S SISTER CITY CAME TO VISIT, SEPT 16 - 20

The Office of Sustainability and Innovations had the distinct pleasure of hosting, along with the rest of the City of Ann Arbor, the delegation of City Officials and Residents from Ann Arbor's Sister City Tübingen, Germany. The focus of this week of collaboration was on the climate action of both cities. Tübingen, like Ann Arbor, has a 2030 carbon neutrality goal, is a university city, and is roughly similar in population and size. This time together provided an opportunity from residents and city staff alike from both cities to learn from the other, exchange ideas, and further strengthen the bond that connects these Sister Cities.

The Sister City Program began in 1965 when Tübingen was invited to be Ann Arbor's first Sister City. Learn more about the history of this program and Tübingen's recent visit at aadl.org/sister_cities.



Touring the Veridian at County Farms neighborhood and homes and learning about residential decarbonization.



Lord Mayor Boris Palmer of Tübingen and Mayor Christopher Taylor of Ann Arbor at the park bench dedicated to the Sister City partnership, in Tübingen Park.



The Tübingen delegation, Tübingen residents, hosts, and City officials enjoying dinner together at Matthaei Botanical Gardens Campus Farm.



Touring MCity and learning about transportation research and innovation in Ann Arbor.



The Tübingen delegation posing with the staff of the City of Ann Arbor Office of Sustainability and Innovations.

GREEN FAIR & THE LOCAL FOOD FESTIVAL

HIGHLIGHTS FROM TWO OF THE BIGGEST EVENTS OF THE YEAR



Green Fair: Mayor Christopher Taylor, Johnathan Gomer, and members of the Tübingen delegation.



Local Food Fest: Residents peruse the available cookbooks at the cookbook swap.



A special thank you to all of our Collaborators, partners, vendors, and supporters who made both Green Fair and the third annual Local Food Festival so successful! Like all of our work, we couldn't have done it without the support of the community. Thank you!

Green Fair: Members of the Tübingen delegation participating in the bike parade.



Local Food Fest: Chef Allison Anastasio conducts a live cooking demonstration.



Green Fair: A busy Main Street at the height of the evening.



Local Food Fest: At the end of the night, visitors gathered around for the prize drawing.

ANNOUNCEMENTS

10,000 Trees Achieved! With the 10,000th tree going out into our community this September, the A²ZERO goal of 10,000 trees planted on private property by 2030 has been achieved – six years early! But don't worry, this doesn't mean we're slowing down on anything tree-related – we're going to continue the FreeTree Giveaway program, and begin a survival study on all the trees we've already given out. Thank you Tree Town for taking these trees and giving them a good home, we couldn't have done it without you!

City's Winning National Charging Grant! We are delighted to share that the City has won a national Charging and Fueling Infrastructure grant worth \$2.79 million to help expand EV charging access throughout the community. More details about this program are coming soon. For now, congratulations to Simi Barr for his hard work and visionary leadership to expand EV charger access in the community.

A²ZERO Rebates Still Available: In total, OSI anticipates distributing \$1.9 million in rebates, providing an estimated 1,300 sustainability-related rebates to residents across the city. At least 50% of the rebates will be for income qualified households. More details, including our new dashboard, are available at osi.a2gov.org/rebates.

\$3.1 MILLION Michigan Public Services Commission Grant Awarded to Ann Arbor! This funding will support our equitable decarbonization work in the Bryant neighborhood! It will finance deep energy efficiency improvements, electric panel upgrades, beneficial electrification improvements such as the replacement of fossil gas water heaters, dryers, and stoves with all electric, high efficiency appliances, and the installation of solar and energy storage systems for 50 low-income households.

Check out Green Light. A new series from CTN and OSI that digs into sustainability in Ann Arbor with the residents who are envisioning, creating, and establishing a sustainable and equitable future for our community. [Check out our newest episode on the Sustainable Energy Utility.](#)

\$1 Million Grant From the U.S. Department of Agriculture Forest Service. City Council voted 10-0 Aug. 19 to accept and appropriate the federal funds for several projects aimed at understanding, enhancing and expanding Ann Arbor's tree canopy. [Read more about the grant and what this work could look like here.](#)

Commercial EV Charger Program. Applications for the City of Ann Arbor's Commercial EV Charger Program are still open. With the goal of increasing the availability of publicly accessible EV chargers, the Commercial EV Charger Program provides an opportunity for commercial and multifamily property owners in Ann Arbor to receive up to four FREE level 2 EV chargers. To learn more about the program and view our application, visit osi.a2gov.org/evchargerprogram.

The Home Energy Advisor is no longer on a waitlist! The waitlist has been exhausted and the portal is now open to sign up to receive your free, custom home decarbonization plan. Learn more and sign up at a2zerohea.org.

Ann Arbor Climate Corps is bringing sustainability to your door! In early October, Ann Arbor Climate Corps began a neighborhood outreach campaign, delivering information about A²ZERO programming and helping residents identify which programs best match their interest and needs. Be on the lookout for the Ann Arbor Climate Corps in your neighborhood! Ann Arbor Climate Corps is the City of Ann Arbor's AmeriCorps program. Members serve with the Office of Sustainability and Innovations, building capacity, conducting outreach, and completing service projects that support the City and its residents in achieving a just transition to community-wide carbon neutrality by 2030.

Positions opening soon with the Ann Arbor Climate Corps The Office of Sustainability and Innovations is accepting applications for the Ann Arbor Climate Corps AmeriCorps Program. About to begin its second year, the Ann Arbor Climate Corps is an AmeriCorps program focused on environmental education and stewardship. Learn more at AmeriCorps.gov or email Maggie Halpern (mhalpern@a2gov.org) for more information.