

Specific Net Zero Products, SHC 3.63.4

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Purpose/Utility of Research

The four case studies under the SHC Net Zero task all aim to provide broadly applicable tools and will disseminate lessons learned and best practices of Net Zero waste approaches.

- Net Zero waste, as defined by the Army, means reducing, reusing, and recovering waste streams and converting them to resource values with zero solid waste sent to landfill.

More specifically, the research topics these Net Zero waste projects focus on are:

- **Integrated management strategies** for the diversion of organic materials from landfills into valued uses.
- **Co-digestion** of wasted food in wastewater treatment facilities.
- On-site **food waste management devices**.
- **Waste sorting technologies** in Materials Recovery Facilities (MRFs) to enhance segregation of waste streams into valued feedstocks.



Highlights

- The projects catalyze public-private partnerships that embrace co-ownership and joint development to apply integrated solutions for sustainable outcomes.
- The food waste study, using Columbia, SC as a case study, will provide the city and region a report detailing current state of organic materials in the region and rank a set of diversion options.
- The study of co-digestion feasibility in Fort Huachuca, AZ, will provide Army installations and communities a report evaluating the benefits and limitations of anaerobically digesting wasted food in wastewater treatment facilities.
- The research at Fort Jackson, SC will produce a report evaluating the benefits and limitations of on-site food waste management technologies being used in Army installations, along with a broadly applicable strategies for regions and communities to use to better manage organic waste.
- A guidance document will be produced for communities and military installations on how to conduct a practical and integrated waste diversion plan. It will include case studies and lessons learned- from Ft. Huachuca, Ft, Jackson, Columbia, etc.
- The collaboration with Idaho National Lab will produce a report evaluating innovative technologies that cost-effectively sort and recover waste materials at scale in MRFs.

Application & Translation

- The projects provide tools and strategies for communities and military installations seeking options to manage their waste in a more efficient and integrated way.
- The work will apply EPA science and tools to provide the scientific community real-world evaluations of innovative technologies and strategies that help communities move toward Net Zero waste.

Intended End users

- The intended end users of the SHC Net Zero work are military installations and non-military communities seeking to achieve Net Zero waste.
- The work is a result of partnerships between EPA, the military, and non-military communities; each group was included in the development of the research to insure mutual project benefits.

Lessons Learned

- This ongoing research is moving the science forward by demonstrating and evaluating innovative and integrated technologies and approaches in military installations and communities.
- If successful, these technologies can be transferred to other communities.



EPA Net Zero researchers (Jay Bassett, Kate Helmick, Alex Lan, and Michael Nye) tour Idaho National Lab's waste sorting facilities.