

Costs and Approaches for Municipal Solid Waste Recycling Programs

Informational Gathering

David Allaway

David Allaway has worked at the intersection of waste, materials, and environment for almost thirty-five years. He is currently a senior policy analyst at the Oregon Department of Environmental Quality (DEQ), where his work is divided between policy development and impact assessment. David served as an invited science advisor to the Wal-Mart Packaging Sustainable Value Network and the New York Times bestseller *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*. He is the recipient of awards from the U.S. EPA and American Center for Life Cycle Assessment. Most recently, David co-chaired Oregon's Recycling Steering Committee and played a key role in the development, passage and early implementation of Oregon's Recycling Modernization Act (2021). David has a B.A. (physics, with honors) from Carleton College.

Morton Barlaz

Dr. Morton A. Barlaz is Distinguished University Professor Emeritus in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University. He received a B.S. in Chemical Engineering from the University of Michigan and an M.S. and Ph.D. in Civil and Environmental Engineering from the University of Wisconsin in 1988. He has been involved in research on various aspects of solid waste since 1983 including biological refuse decomposition, methane production, the fate of hazardous wastes in landfills, policies for the long-term management of landfills, PFAS release from solid waste and factors contributing to heat generation and accumulation in landfills. He is also recognized for his research on the use of life-cycle analysis to evaluate emissions associated with alternate solid waste management strategies.

Susan Fife-Ferris

Susan Fife-Ferris is Director of Solid Waste Planning and Program Management for Seattle Public Utilities, where she provides leadership and directs all aspects of Seattle's solid waste planning, policy, and program development and delivery. Susan has 30+ years' experience in all aspects of the solid waste industry, with a focus on strategic and long-range planning, policy development, and program design. She oversees Seattle's efforts to move upstream, increase waste prevention efforts, increase reuse opportunities across the city, pass producer responsibility legislation at the state level, and support the movement towards a more circular economy. Susan currently serves on the U.S. Plastics Pact Board of Directors, and previously served on their Advisory Council. Prior to her current position, Susan oversaw all aspects of environmental programs and communications for the City of Bellevue's Utilities Department, served as a consultant to governmental entities throughout the western U.S., and practiced law in both California and Washington. Susan received her bachelor's degree in Applied Mathematics from the University of California, Berkeley, and a law degree from the University of Southern California.

Anne Germain

Anne Germain is the Chief Operating Officer and Senior Vice President of Technical and Regulatory Affairs for the National Waste & Recycling Association. She has worked in the field of resource conservation and materials management for more than 30 years and has been with NWRA since 2013. Anne's current work focuses on supporting members by developing and implementing strategies that address common issues facing the industry.

Prior to joining NWRA, Anne worked with the Delaware Solid Waste Authority (DSWA) for 19 years, where she served as chief engineer. The experience with DSWA provided Anne with a unique skill set in implementing integrated waste management solutions for the public sector.

In addition, Anne is a past president of the Solid Waste Association of North America and serves on the executive committee for ABET. She is an active national speaker and published author on waste and recycling issues. She is a Board Certified Environmental Engineer with a Master in Civil Engineering from the University of Delaware and a Bachelor of Science in Civil Engineering from Virginia Tech.

Chaz Miller

Chaz Miller worked at the US EPA as part of its original resource recovery and source separation program, the Glass Packaging Institute and the National Waste and Recycling Association. He is a member of the Board of the Northeast Recycling Council. He has spoken at recycling and waste conferences throughout North America and in Japan and China. He has testified about recycling at numerous Congressional, state legislative and local government hearings.

Happily “semi-retired”, he writes The Circular File, a blog for Waste360, prepares a monthly analysis of recycling markets as chair of NERC’s Recycling Markets Committee, and continues to speak at conferences. Chaz chaired Montgomery County, MD’s, Aiming for Zero Waste Task Force.

Scott Mouw; The Recycling Partnership

Scott is Senior Advisor for Strategy and Research for The Recycling Partnership, where he helps achieve the organization’s mission to grow a resilient residential recycling system in the U.S. Scott has been a lead researcher and author of the Partnership’s major reports, including the 2020 State of Curbside Recycling, 2022 Paying It Forward, and 2024 State of Residential Recycling. Scott supports a range of initiatives across the Partnership, including its policy work, EPR implementation, recycling data analysis, material coalitions, and recycling system optimization.

Prior to joining The Partnership, Scott directed North Carolina’s highly regarded state recycling program after starting his career as a local solid waste director. He has participated in a wide range of regional and national initiatives throughout his career to advance recycling. Scott and his family call Raleigh, NC home.

Erin Murphy; Ocean Conservancy & University of Toronto

Erin Murphy is a marine conservation ecologist conducting policy-driven research to improve the social and ecological health of coastal communities. She is currently working as a post-doctoral researcher with Ocean Conservancy and University of Toronto where she studies the ecological consequences of plastic pollution and the benefits of marine debris removal. Additionally, she is serving as the co-chair of an NCEAS working group to evaluate the social costs of plastic pollution in aquatic ecosystems. She completed her Ph.D. in Biology at Arizona State University in the Biology and Society Program, advised by Dr. Leah Gerber and Dr. Beth Polidoro, where her dissertation focused on social, ecological, and economic dimensions of plastic pollution and plastic pollution interventions.

Michael Timpane

Mr. Timpane has over forty (40)-years in direct field operations with various roles with the largest publicly traded recycling firms in the U.S. In his current engagement at RRS, Mr. Timpane focuses upon the technical execution of successful and sustainable recycling platforms in the major processing channels (MRFs, C&D processing facilities, composting, electronic waste, and mixed waste processing). Expertise includes pricing, landfill diversion, acquisitions and

mergers, and organizational management. In particular, his practice is primarily concerned with the economic feasibility of recovery technologies, material streams, paper/metal/plastic recovery, total recycling and diversion systems, LCA and total cost accounting, and process improvement. Additionally, Mr. Timpane regularly reports on commodity behavior for a variety of clients. Finally, Mr. Timpane is also a founding and active member of both the NWRA Recycling Committee and the ISRI MRF Committee.

During his career, Mr. Timpane has directly managed over one hundred (100) MRFs, e-waste, C&D, and compost operations. In addition, he has visited over 350 material recovery facilities, compost sites, MWPFs, and other recovery operations in N. America, Europe, & Australia.

- Prior to RRS, Mr. Timpane worked with WM for thirteen (13)-years. Responsibilities included the Recycling executive team, public recycling procurements nationwide, pricing approach and execution for profitable recycling, development of single stream MRFs, GM for WM's e-Cycling (electronic waste) business for three (3)- years, C&D processing, landfill diversion, MWPF strategy, and transfer station mining. Mr. Timpane also was a member of the WM Recycling and Technology Committees and worked closely with the company Organic Growth team on diversion projects and performance.
- Prior to WM, Mr. Timpane worked for BFI (now Republic) for ten (10)-years. His roles included Recycling Western Regional Manager, Corporate MRF Operations Manager, and, for the last five years, Area Vice President- Recycling, Processing & Diversion in the Southeast. In his last role, Mr. Timpane was responsible for 16 MRFs, 5 CD facilities, 3 compost sites, and >20 transfer stations with close to 1,000 employees, staff, and managers.
- Prior to BFI, Mr. Timpane worked for Reynolds Aluminum Recycling Company (RARCO) for fifteen (15)-years as Area Business Manager operating in Virginia, West Virginia and Tennessee. Reynolds Aluminum and RARCO were pioneers in consumer package recycling and aluminum reclamation and reuse. Mr. Timpane operated over 100 mobile and stationary recycling centers, 17 reverse vending machines, shredding and densifying plants, furnaces and scrap centers. He also had a concurrent assignment as a Member of the Virginia Legislative Subcommittee on Alternatives for Reducing Waste Volumes which wrote and passed over twenty recycling laws.

Susan Thorneloe

Senior Research Environmental Engineer

Susan Thorneloe serves as a national and international senior scientist in developing and conducting research activities and program relevant to EPA's mission, and in providing technical advice on a range of subjects, including but not limited to landfill gas emissions, sustainable and resilient materials management, control technology evaluation, and fate and transport of constituents in the environment. Susan's work includes dissemination and interpretation of research results and the development of decision support tools that provide expert advice to decision-makers and regulated industries as they develop and evaluate competing environmental policy options for future both national and international policy utilizing EPA's science advancements through the research of Susan Thorneloe.

Susan has a B.S. in chemical engineering from North Carolina State University and a Master's in Environmental Management from Duke University. Susan is responsible for publication of over 80 EPA reports and 75 journal publications. Susan's international expert stature is recognized through her membership on the International Waste Working Group and other professional organizations that help EPA access science advancements and expertise that help result in more efficient and effective environmental management. In 2020, Susan was selected as one of the MSW Management Legacy Award winners which recognizes 30 waste professionals who have made significant contributions to the U.S. industry. In 2017, Susan was nominated and elected by peers to serve on the science advisory board in of the International Waste Working Group (IWWG). Susan was also the sole author of the section on Solid Waste Management of the 9th edition of Perry's Chemical Engineers' Handbook (2019). This section provided a review of the processes,

technologies, and regulations associated with US solid waste management including disaster waste and debris, coal ash, municipal, commercial, agriculture, radioactive, industrial waste, and hazardous waste management. And as of 3/28/2024, Susan's manuscript – Quantifying Methane Emissions from US Landfills – was published in Science with co-authors from Carbon Mapper, NASA, and EPA.

Lynn Zender

Dr. Lynn Zender directs Zender Environmental Health, an Alaska non-profit that provides waste- and water-related assistance and training for over 100 Alaska Indigenous communities annually and administers the Backhaul Alaska and Rural Alaska Environmental Job Training (RACEJT). Programs. With repeated visits to over 65 rural communities, Dr. Zender is proud to have long-established relationships throughout the state, to have helped facilitate multiple changes in how rural Indigenous communities are served, and to receive numerous service recognition awards. Her Engineering doctoral work identified differences in the institutional, jurisdictional, sociocultural circumstances and approaches of Indigenous waste management, leading her to direct the first baseline study of rural Alaska waste conditions and related health risks. Seeing the gaps, she and Deputy Director Simone Seballo developed the first rural-relevant assistance materials and raised waste awareness statewide and nationally, with one outcome being home burn barrel use plummeting from 65% of communities in six years. She helped to develop Backhaul Alaska and founded RACEJT using a cultural values-based approach for workforce development that achieves unparalleled 90% retention and employment rates. She co-authored the Arctic Council's study on waste management in small and remote communities and teaches waste at Arctic U in Greenland. Her current efforts focus on reducing contaminant exposures for Indigenous communities and waste health equity. Dr. Zender is a Co-Coordinator for National Tribal Toxics Council, member of the Solid Waste Association of North America Diversity Equity and Inclusion Committee and USEPA National Environmental Justice Advisory Group.