Zero Waste Groundwork Guide

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Starting the Zero Waste Journey

Whether or not zero waste is the ultimate goal, waste is a sign of inefficiency and there can be significant financial and environmental benefits when efforts are taken to reduce it. There are three core activities that any business or institution should take to identify opportunities and lay groundwork for future waste reduction efforts:

1. Conducting a gap analysis of the facilities waste management processes and contracts.
2. Implementing a comprehensive tracking and reporting of all disposal quantities.
3. Conducting regular audits of the waste stream's quality to ensure material is properly sorted.

The gap analysis broadly reviews 5 key areas of operational waste management:

- Priority Selection and Goal Setting
- Planning and Training
- Vendor Selection and Contracting
- Tracking and Auditing Process
- Purchasing Management

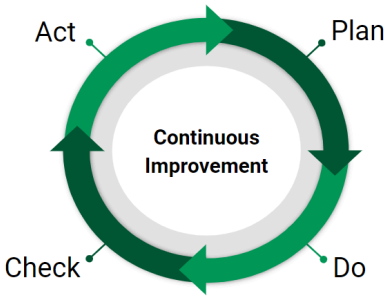
The waste stream tracking and reporting analysis:

- Confirms that all waste streams are identified and quantities are tracked.
- Confirms the level of rigor and detail in data collection.
- Confirms the QA/QC process for data collection and reporting.

The waste and recycling characterization and operations audit:

- Determines the quantity of recyclables in the waste stream, the quantity of waste in the recycling streams, and the materials in both that might have better processing outlets.
- Determines opportunities for improvement of the internal waste collection and movement systems inside the building, including infrastructure, signage, and education systems.

Together the three activities allow management to identify top areas for improvement with the biggest economic and environmental benefits, and provide them with the information needed to calculate return on investment.



The intention of these activities is to lay the groundwork for a successful waste reduction and diversion component of the facilities sustainability and ESG plans, minimizing distractions and building a continuous improvement process.

These activities could be performed in any order, though they would be most efficient in the order presented here.

Action 1 - Gap Analysis

Conduct a broad review of each facility or department's waste reduction and management efforts, with the goal of producing a comprehensive gap analysis between current practices and best practices.

Review Process

Consolidate information & documents to review together. Missing information should be flagged for correction, there should not be an effort to create new documentation or take new actions at this time. The review process should cover:

- The strategic, long term and short term goals regarding waste, energy, water, and health, as they pertain to the organization, the organization's supply chain and clients.
- The reporting requirements for external or internal waste certification or statements such as: Green Masters, Green Tier, ESG, Corporate Sustainability Reports, Waste Wise, LEED, etc.
- Waste Management Plan(s) for the facility or department
- Employee Training Material for waste & materials management
- Facility information
    - Floor plans for each building (architectural or life safety).
    - Full time equivalent (FTEs) and business function for each department.
- Collection service schedule for all waste & managed materials
    - Category / Material type
    - Typical container size for the aggregated material and its location on site
    - Frequency of service
- Current waste & material disposal/hauling contracts
- Status of waste & material management disposal / diversion
    - Category / Material type
    - Service provider (hauler, etc.)
    - Generation point (building or department)
    - Quantity (volume and/or weight) and cost structure
    - End destination of the material after it leaves the facility
- History of efforts behind the current disposal methods for each material
    - Changes in the composition of the material or the types of materials handled.
    - Issues relating to finding a higher/best-use for each material stream.
- The purchasing process and purchasing reports by material (category/type)
- A staff interview to identify known recycling and waste issues and opportunities.

Results

The review should provide suggestions for improvements in the current operations, including:

- A site walk with staff, inspecting and discussing each waste stream, its management and issues.
- A printed gap analysis identifying the importance of each activity, the current operational state, and the potential improvements possible in 5 categories:
    - Priority Selection and Goal Setting
    - Planning and Training
    - Vendor Selection and Contracting
    - Tracking and Auditing Process
    - Purchasing Management

Action 2 - Tracking and Reporting Baseline

Establish a centralized tracking process for all waste streams. The intent is to identify a baseline waste generation quantity, diversion rate, and performance indicators, and build the operating framework for continuous improvement.

Actions

If critical information is missing, identify the actions needed to establish accurate and regular tracking protocols and follow up until 3 months of solid data has been collected for the following:

- Hauling schedule, container size, and costs for each discard stream.
    - Example streams: trash, commingled recycling, lamps/ballasts, e-waste, batteries, oils, hazmat, regulated, glass, construction and demo, sharps, pallets, shredding, etc.
- Monthly material quantity and removal costs for each standard discard stream.
- Annual summaries of quantities and costs for event-driven or periodic collection and donation.
- KPI data related to discard generation. Typically this is full time equivalency (FTE) for office or educational areas, units shipped or produced for warehousing or manufacturers.

Results

The report should identify the facility's definition for waste diversion. A tally of all waste streams across a minimum of 3 months will be sufficient in most cases to determine the waste diversion rate for the facility and link waste production rates to the facilities key performance indicators. Be aware of seasonal variations that could influence the review, a longer time frame may be needed.

Action 3 - Waste and Recycling Characterization and Operational Audit

Audit each waste stream's content and the process by which they arrive at the aggregated collection point (usually a dumpster or compactor). The intent is to identify the quality of each discard stream, and the infrastructure and education in place that affect that quality.

Actions

- Collect and store all material leaving the facility for the duration identified (usually between 3 days and 1 week). This material must remain separated and labeled by department and waste stream type.
- Designate a processing area of sufficient size, with protection from the elements (a roof, at a minimum), and provide processing tables and containers to hold processed material.
- Oversee, direct and assist staff from a diversity of backgrounds within the organization, from janitorial staff, to employees, to management.
- Walk the facility to review signage, access, and equipment used to move waste materials.

Results

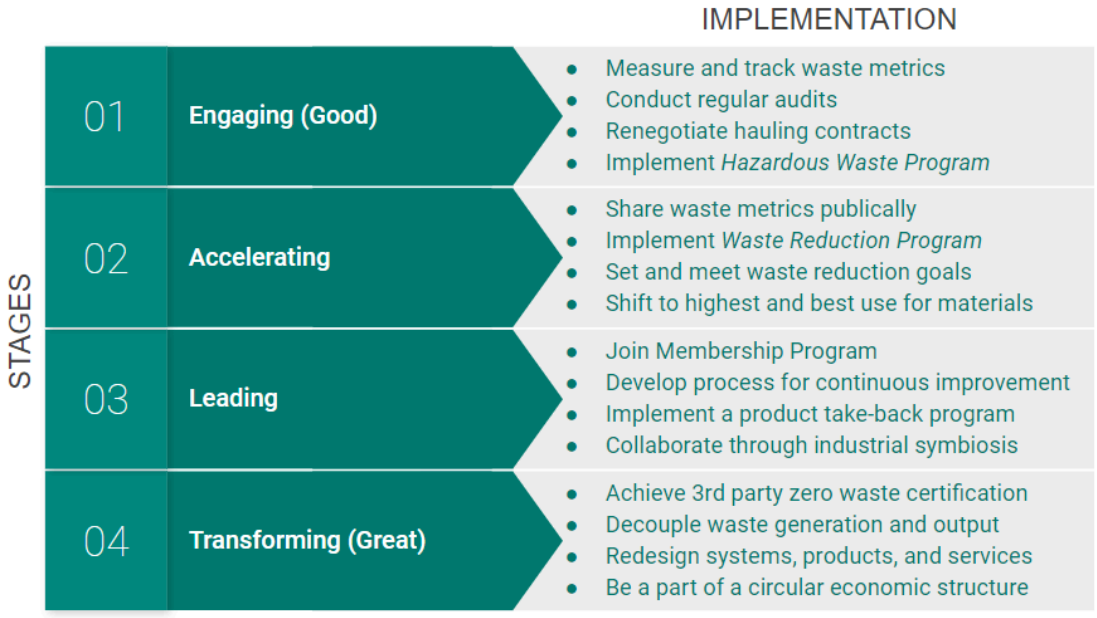
The report should identify types of materials in each waste stream and the quantities of mis-sorted materials. When combined with quantity and cost information from the other actions, a picture can be formed of the most impactful opportunities available to reduce waste.

Methodology

WasteCap follows a continuous improvement process (plan, do, check, act) for waste reduction and material management efforts at operational facilities.

These three activities start a waste management process at the "plan" stage. The facility can use the analysis to implement measurable improvements, check the data from those efforts, act on the effectiveness of their improvements, and repeat the process to plan a new round of improvement measures.

The table below identifies the typical stages and activities a business implements to sustainably manage its materials during a zero-waste transformation.



This guide scratches the surface of what is a very complex effort for many businesses. Each material has different solutions based largely on what is available within the regional economy, and each business or institution has different cultural hurdles to overcome.

WasteCap is a 501(c)(3) nonprofit that has been helping businesses turn their waste into resources for 25 years. Whether you are just starting the process or pursuing a third party certification for your efforts, WasteCap can guide, instruct and support you.

We know the right questions to ask and can help you achieve your goals. Connect with us at wastecap.org, calling 414.961.1100, or emailing us at projects@wastecap.org.