

The background image shows a white semi-truck driving on a two-lane road towards the viewer. The sun is setting behind the truck, creating a strong lens flare and illuminating the sky with orange and yellow clouds. The road is flanked by green grass and trees. In the upper right corner, there is a grid of teal dots of varying sizes, some of which are larger and more prominent than others.

# The Critical Role of Logistics in Sustainable Waste Management





## Global waste generation is expected to grow by 70% by the year 2050<sup>1</sup>.

Apart from the enormous environmental implications this projection has, it raises a number of alarms from an economic standpoint, too. For industrial generators especially, waste and its management are deeply intertwined with finances, affecting everything from compliance costs to new revenue.

In today's ultra-competitive business climate, that leaves no room for inefficiencies or slip-ups. Combine that reality with the market's ever-escalating concern for (and prioritization of) the environment, and you're left with the fact that transparent, sustainable logistics are essential—not only to the success of waste management programs, but to the success of business itself.





## Challenges

Managing diverse industrial waste streams is complicated because materials can be hazardous or non-hazardous and come in many forms. Because a single waste stream has a variety of touchpoints during its lifecycle—including creation, capture, storage, removal, transport and recycling/disposal—it's ever-present and top-of-mind.

Waste becomes more labor-intensive as it reaches the later touchpoints in its lifecycle. After waste is generated, the process of handling, moving and disposing of it is considered the transportation and logistics end of the equation. The transportation and logistics of waste removal are generally the biggest and most challenging pieces of any company's waste management puzzle, especially for companies pursuing aggressive sustainability goals. Generators looking to efficiently manage and streamline the transport and logistics phase of their waste stream face several key hurdles:



**Cost**



**Expertise**



**Organization**







### **Cost**

The cost to set up an internal logistics operation that effectively meets a business's unique needs is often significant.

The operation should include equipment for packaging and containing, on-site storage capacity (and related permitting), and vehicles for hauling and treatment or disposal. It's important to have enough capacity without too much excess, and a contingency plan for emergencies. This just-right/just-in-time balance can be tricky to achieve and requires forethought and extensive planning.



### **Expertise**

Understanding and complying with a multitude of regulations from local, state and federal agencies, including the necessary permits, licenses, certifications and reports, is a complex and time-consuming challenge that many businesses struggle with.

The flurry of recent energy and environmental policy changes—like IFDA and the fuel tax—shows no signs of abating, so generators can expect that each subsequent year will add layers of new regulation. Additionally, the rules for hazardous waste are far more complex than non-hazardous waste, so if a generator creates hazardous materials, their expertise needs, like the stakes, are exponentially higher.



### **Organization**

The heavy administrative burden of staying on top of and efficiently managing permitting and scheduling (of materials and drivers), interpreting and applying all agency guidelines and regulations, reporting, equipment maintenance and overall program management is daunting for most organizations.

# The Importance of a Waste Management Logistics Strategy

Because waste logistics are so complicated, mapping out a strategy with clear, measurable goals well enough in advance is paramount. A formal strategy will include detailed costs for budgeting purposes and quarterly and annual benchmarks that need to be met. A full logistics strategy is multi-layered and involves far more than just approximating simple disposal costs. Typically, the industrial location that generates the waste must account for and bear the cost of this full program.

A comprehensive solid waste management logistics strategy will have three elements. Looking to efficiently manage and streamline the transport and logistics phase of their waste stream face several key hurdles:



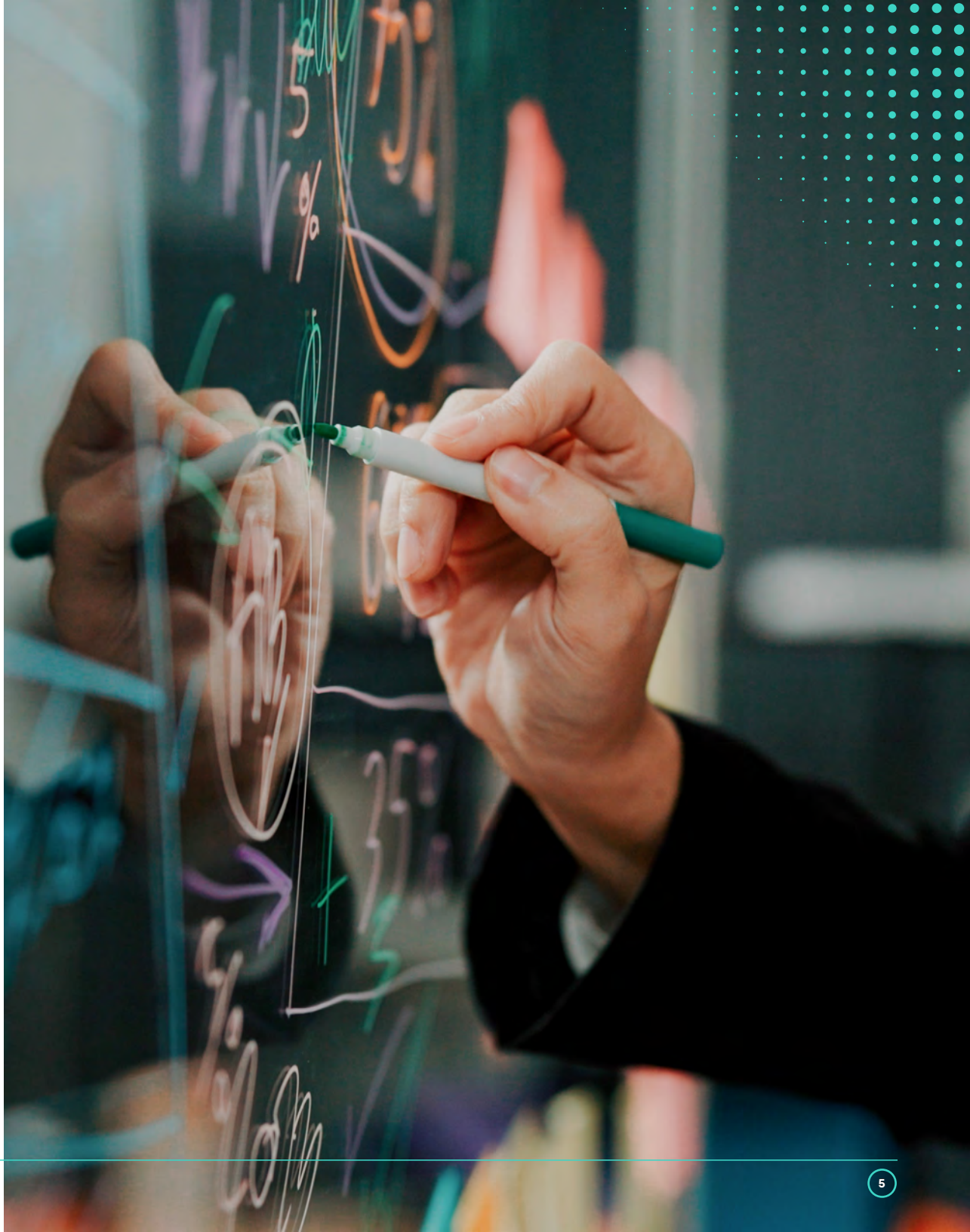
**Auditing and Assessing the Scope**



**Managing and Moving the Materials**



**Treating and Disposing of the Waste**







### **Auditing and Assessing the Scope**

This planning stage lays out precisely what a generator needs to do. It includes considering the types of materials generated, the frequency at which they'll need to be removed, the necessary equipment, if the equipment is already in-house or would be considered a new capital expense, the waste destination, if drivers or third-party vendors are needed, approvals and contingencies.

Completing this administrative step is the most burdensome of the three program steps. Creating the mapping process of what waste a generator creates and where it needs to go is crucial in getting things rolling. That big-picture understanding informs the remaining steps in the process.



### **Managing and Moving the Materials**

This manual stage involves handling the materials, which requires understanding timeframes, the cost of the movement, what type of equipment is needed to move the materials, where it will go and what (vehicles) and who (drivers) will get it there.

Contingency planning is important here—does additional equipment need to be available on standby in case volumes are higher than expected? Or a piece in the transport cog falls apart? Even something as simple as an unexpected truck breakdown or drivers calling out sick can be disruptive and needs preparation.



### **Treating and Disposing of the Waste**

This end stage requires processing the materials. If a larger generator has multiple types of waste, what disposal facilities can take which type of product? What volumes are involved? Do new contracts need to be negotiated with third-party vendor disposal facilities? Are those contracts delivering favorable costs and the necessary frequency so that waste products move fluidly and don't create back-ups in the producing facility?



## When to Consult a Partner

Generators who feel overwhelmed by getting the planning right will benefit from consulting with a waste management expert—and the earlier in the strategy planning process, the better. A waste management expert will explain upfront the details of what it takes to create and manage a successful logistics program. This gives the generator the knowledge and confidence to decide if they have all the elements in place to execute and whether they should take this responsibility in-house or choose to tap third-party expertise.

Many companies that handle transportation and logistics in-house can find costs quickly skyrocketing. They may need unexpected additional personnel to manage their own internal program. Because of the complexity of managing various waste streams, many generators run the risk of waste overload—undue waste that they cannot move—stemming from issues such as missed equipment maintenance, vehicle breakdowns, the wrong equipment for the job at hand, driver callouts, or other circumstances they don't envision in their initial plan. Serious instances of waste overload can shut down a plant or entire facility and are devastatingly disruptive to business operations.

**An experienced waste management partner will help a generator devise a successful waste logistics program by tailoring it to the generator's unique needs and goals. Still, the most effective strategies share some common elements. In such programs:**



Personnel needs are fully understood and met so staff isn't overwhelmed.



Management plans can seamlessly support various waste streams.



Generators properly pace scheduling of waste removal to avoid plant shutdowns and waste backups.



Generating facilities have defined maintenance schedules for equipment to prevent crippling downtime.



Teams develop thorough and accurate contingency plans.



Businesses control costs and realize all potential savings through fuel and route efficiencies and by taking advantage of all tax considerations.



### **What to Look for in a Potential Partner**

Once a generator determines they aren't comfortable or don't have the capacity in-house to successfully execute their waste management logistics program, they can start the search for the right partner. Several must-have qualifications are:

- Long-standing experience and expertise to balance time-tested strategies with trailblazing innovation
- A sophisticated, in-house vehicle fleet to handle a variety of needs, at scale and in time
- A vast network of facilities and partnerships to deliver diverse, streamlined solutions
- An excellent reputation of environmental stewardship and responsibility to ensure reliable service that also prioritizes people and planet





## Why Reworld™?

Reworld™ offers four key attributes that make them the right match for many generators: experience, a national footprint, emergency capabilities and contingency expertise, and a company-wide commitment to a sustainable future.



### Expertise

Reworld™ has been providing the essential service of sustainable waste management for over four decades. We oversee and manage the full process, including permitting and regulatory compliance, can handle materials of every makeup and magnitude, ensure low liability risk through proper insurance coverage, and offer centralized communication and sophisticated reporting, including analysis and transparency. We are known for stellar account management and excellent customer service.



### Scalability

Reworld™ serves any size customer, from single container customers to customers that require more than ten truckloads a day. We offer a wide selection of vehicles, containers and equipment to handle solid, liquid, hazardous and non-hazardous materials as well as bulk and containerized waste. We have more than 90 facilities in North America, and several hundred strategic partnerships with legislators, regulators, and industry service providers to ensure customers can get the sustainability support they need regardless of what, where or when. We create tailored solutions that optimize operations for every customer, from an existing disposal customer who wants to consider adding transportation, to a new customer who wants a sophisticated solution built and managed from the ground up.



### Emergency Solutions

In the waste business, it's important to expect the unexpected. In the case of a time-sensitive emergency, generators need capable, speedy remediation. The industrial services group at Reworld™ has the personnel and equipment for site clean-ups if there's a spill, a cracked tank that needs repair, or a myriad of other scenarios. In addition to handling the materials quickly and safely, we process all paperwork and complete the transport.

## Food Service Contamination/ Emergency Remediation



- **The situation:**  
Food service company has 750 truckloads of food items in their warehouse that contain salmonella poisoning
- **Reworld™ solution:**  
Mobilize internal and third-party assets to remove product as quickly as possible, to reclaim needed warehouse space and prevent further contamination of other warehouse items

## Industrial Manufacturing Emergency Remediation



- **The situation:**  
Industrial manufacturer discovers single mistaken ingredient added to liquid product
- **Reworld™ solution:**  
Bring in frac tanks to pump 1.2 million gallons of product into bulk tankers, then transport to processing facility for publicly owned treatment works (POTW)





### Sustainability Focus

Reworld™ is a leader in sustainable waste solutions in North America, trusted by communities and businesses of every size to transform their most complex waste challenges into positive environmental and economic impacts. We help customers access greener options for waste processing and reduce their carbon footprint through route and fuel optimization.

When you partner with Reworld™ you benefit from a threefold focus on safety, compliance and sustainability.

## By the Numbers: Reworld™ Helps Reimagine What Waste Can Do

**21M+**

**tons of waste managed sustainably**

(equal to the weight of 114,000 blue whales)

**500,000+**

**tons of metal recovered**

(enough to build 5 Golden Gate Bridges)

**280M+**

**gallons of wastewater recycled or reused**

(equal to 570 olympic-sized swimming pools)

**10M+**

**megawatt equivalents of energy generated**

(enough to power 1 million homes)



### CASE STUDY

## Sustainable Transformation of Paper Byproducts with Reworld™

- Greenpac is a state-of-the-art paper mill specializing in lightweight linerboard made from 100% recycled fiber.
- The mill's paper tailings (discarded trimmings) are turned into animal bedding for local farms at our Niagara material processing facility (MPF).
- The mill's waste and our Niagara MPF facility waste are turned into steam at our Niagara thermomechanical treatment facility (TTF).
- The Niagara MPF facility also uses the mill's waste materials to manufacture alternative fuel for cement and lime kilns.





## Work Smarter with Reworld™

Ensure your waste is prudently managed and meticulously documented. Know that you're doing your part to safeguard your company from liability and boost your environmentally friendly and sustainable practices. Offload to us so you can focus on building and running your business.





[Connect with us](#) to learn more about our logistics solution  
and how we can help drive your sustainability goals.