

Think Outside the Box:

**Think
Reusable**

Reusable transport packaging saves your company money and resources

What is reusable transport packaging?

Disposable wood pallets and cardboard boxes comprise a significant amount of the waste generated by businesses in Alameda County, and there is limited and expensive landfill space left for garbage.

That's why the **StopWaste Partnership**—which helps local businesses divert waste from local landfills—has partnered with the **Reusable Pallet & Container Coalition (RPCC)** to provide Alameda County businesses the information and resources they need to make the switch to reusable pallets and containers.

The RPCC, headquartered in Washington, D.C., advocates the growth of reusable packaging systems in North America and has been instrumental in assisting businesses to support their bottom line while also protecting our environment.

StopWaste and the RPCC want you to know about the benefits of reusables. The tips, techniques, and tools provided here will help you get started. You will find:

■ A **guide** that outlines the basics of reusable transport packaging: what it is, how it works, and why the switch makes sense.

■ Several in-depth, **real-world examples** of how reusable packaging saves companies money, found in the companion guide, ***Reusables 102: A Cost Comparison Model for Reusable Transport Packaging***.

Benefits of reusable transport packaging:

- Reduced waste management costs
- Lower labor costs
- Better product protection
- Less product damage
- Lower materials costs over time
- Better ergonomics for employees
- Improved worker safety
- Greater landfill availability without increased landfill costs
- Longer useful life of packaging
- Reduced greenhouse gas emissions



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Reusable transport packaging replaces one-time (and limited-use) pallets and boxes with reusable containers (such as totes and bins) along with reusable pallets and pallet /container rental systems (“pooling”).

Reusable transport packaging is used for multiple trips in closed-loop and managed open-loop shipping systems, where the return of empty transport packaging components (“reverse logistics”) can be repeated.

What are the pallets and containers made of?

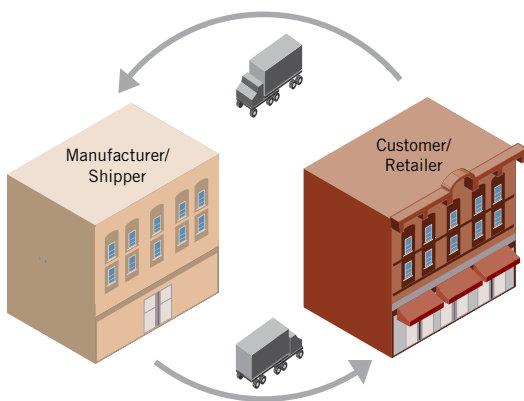
Reusable pallets and containers are designed for many years of use. They are typically made of durable wood, steel, or virgin or recycled-content plastic, which is resistant to chemicals and moisture and has good insulating properties. Sturdy, moisture-proof containers are built to protect products, especially in rough shipping environments.

With pallet and container pooling, companies outsource the logistics of pallet and container management to a third-party pooling management service. The pallets are delivered to the companies; palletized products are shipped through the supply chain; then a pallet rental service picks up the empty pallets and returns them to service centers for inspection and repair. Pooling pallets are typically made of high-quality, durable wood, metal, or plastic.

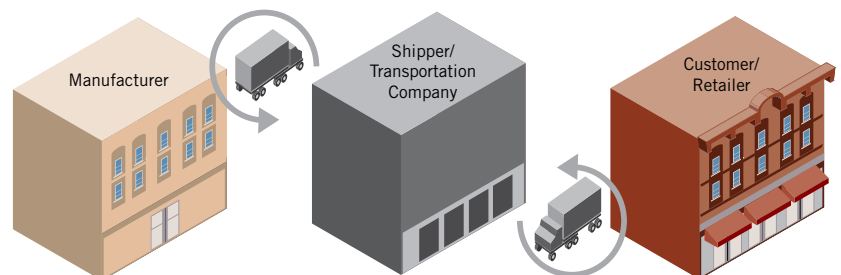
Why are third-party companies necessary?

Closed-loop systems are ideal for reusable transport packaging. Reusable containers and pallets flow through the system and return empty to their original starting point (reverse logistics) to begin the entire process again.

Managed **open-loop shipping systems** require the assistance of a third-party pooling management company to accomplish the more complex return of empty transport packaging. For example, reusable containers may be shipped from one or many locations to various destinations. A pooling management company sets up a pooling network to facilitate the return of empty reusable transport packaging (reverse logistics). The pooling management company may provide various services such as supply, collection, cleaning, and repair of reusable transport packaging.



Managed Open-Loop System



Closed-Loop System

Benefits of reusable transport packaging

Most companies switch to reusable transport packaging because it saves them money. Reusable transport packaging can add profit to a company's bottom line in many ways:

Improved ergonomics and worker safety

- Elimination of box cutting, staples and broken pallets reduces injuries.
- Reusable containers with ergonomically designed handles and access doors improve worker safety.
- Standardized sizes and weights of packaging components reduce back injuries.
- Standardized containers facilitate the use of merchandising racks, storage racks, flow racks and lift/tilt equipment.
- Removal of in-plant debris, such as stray packaging materials, reduces slip and fall injuries.



Improved
worker safety

Reduced inventory and just-in-time delivery

- Standardized transport packaging components and ordering quantities improve ordering capabilities and inventory tracking, while reducing errors.
- More frequent shipments of smaller quantities delivered close to the time of usage reduce the number of days that inventory and dollars are idle and nonproductive.



- Combining supplier pick-ups or customer deliveries in "milk run" fashion (small, daily truck routes) saves money.



Quality improvements

- Less product damage occurs due to transport packaging failure.
- More efficient trucking and loading dock operations reduce costs.
- Ventilated containers reduce cooling time for perishables, increasing freshness and shelf-life.

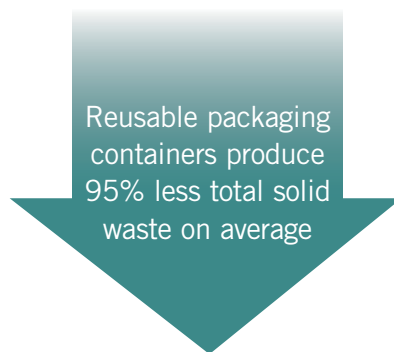


Packaging material cost reductions

- Longer useful life of reusable transport packaging results in packaging material costs of pennies per trip.
- Cost of reusable transport packaging can be spread over many years.

Reduced waste management costs

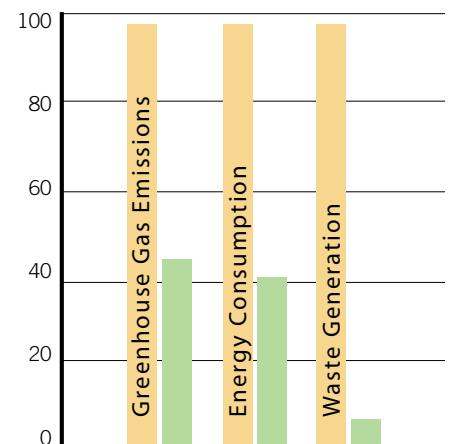
- Less waste to manage for recycling or disposal.
- Less labor required preparing waste for recycling or disposal.
- Reduced recycling or disposal costs.



Environmental impacts

- Reduced need to build expensive disposal facilities or more landfills.
- Helps meet state and county waste diversion goals.
- Supports the local community.
- At the end of its useful life, most reusable transport packaging can be managed by recycling plastic and metal while grinding the wood for landscape mulch or livestock bedding.
- Reduced greenhouse gas emissions and overall energy consumption.

Environmental Benefits of Reusables



Reusable packaging containers generate 29% less total greenhouse gas emissions and require 39% less total energy

Who uses reusable transport packaging?

A wide variety of businesses and industries in manufacturing, materials handling, and storage and distribution have discovered the advantages of reusable transport packaging, including many in Alameda County. Here are some examples:

Manufacturing

- Electronics and computer manufacturers and assemblers
- Automotive parts manufacturers
- Automotive assembly plants
- Pharmaceutical manufacturers
- Many other types of manufacturers

Food and beverage

- Food and beverage manufacturers and distributors
- Meat and poultry producers, processors and distributors
- Produce growers, field processing and distribution
- Grocery store suppliers of bakery, dairy, meat and produce
- Bakery and dairy deliveries
- Candy and chocolate manufacturers

Retail and consumer product distribution

- Department store chains
- Superstores and club stores
- Retail pharmacies
- Magazine and book distributors
- Fast-food retailers
- Restaurant chains and suppliers
- Food service companies
- Airline caterers
- Auto parts retailers

Real-world success stories

ANG Newspapers: Efficiencies from plastic pallets

ANG Newspapers worked with the StopWaste Partnership to identify how they might further improve their environmental performance. StopWaste assessed the situation and determined that ANG had the ideal distribution system for reusable plastic pallets.

ANG applied for and received a \$75,000 StopWaste Business Waste Prevention Fund Award to purchase 1,700 reusable plastic pallets. Each year, the project cuts labor costs by \$46,000 and prevents 37 tons of wood waste.

To improve efficiency, ANG color codes its plastic pallets, which helps drivers know instantly which loads they are to pick up. Plus, the standardized shape makes handling and storage easier than with a fleet of mismatched wooden pallets. And finally, because workers are freed up from repairing wooden pallets, they can now focus on activities that add to customer value.

StopWaste also helped set up a recycling system that captures over 13,000 pounds of plastic film a year. ANG's ability to implement such projects combined with StopWaste's resources made for a rewarding partnership.

Solutions

- Research and cost-benefit analysis
- \$75,000 Business Waste Prevention Fund Award
- New equipment purchases with award funds
- Hot-stamped pallets to make tracking easier
- Improved signage to increase recycling



The bottom line

- Annual labor costs reduced by \$46,000
- Prevention of 37 tons of wood waste a year
- Less space needed to store pallets
- Improved operations and worker safety
- 125% return on investment (ROI)



Toyota: Toward zero waste

Toyota Logistics Services (TLS), a North American Division of Toyota Motors, has six Vehicle Delivery Centers in the United States. The center in Fremont is responsible for customizing and upgrading Toyota cars and trucks straight from the factory floor. They process 400,000 vehicles a year.

TLS Fremont approached the StopWaste Partnership for help in reaching zero waste. One of many solutions was to employ collapsible and stackable reusable plastic containers for shipping carpet, a typical upgrade item for automobiles. This switch prevents 3,000 tons of combined wood and cardboard waste and saves a total of \$3.5 million for the six facilities every year.

TLS Fremont has also arranged to have multiple truck running boards shipped together in the same container, saving money and resources.

Solutions

- Supply chain management analysis
- Waste prevention recommendations
- Assistance to improve recycling
- \$5,000 mini-grant

Ghirardelli Chocolate Company: Reusable totes

Ghirardelli Chocolate Company's San Leandro facility produces premium chocolate products.

The company wanted to eliminate the waste, product breakage, and high costs that resulted from transporting its premium chocolate squares within the plant (and to packagers) in cardboard boxes, which would get soiled and eventually thrown away—at an annual cost of \$2,700 for disposal.

Enter the StopWaste Partnership, which assessed Ghirardelli's operation and identified reusable totes as one potential solution. The reusable tote solution allows Ghirardelli to realize \$1.95 million in net savings over the five-year life of the project through packaging reduction, and prevent 350 tons of soiled cardboard a year.

In addition, workers are now less likely to develop repetitive stress injuries from opening and taping cardboard boxes.

Solutions

- Recognize the potential for reusable totes
- Cost-benefit analysis
- \$75,000 Business Waste Prevention Fund Award
- Purchase reusable totes with award funds

The bottom line

- Combined annual savings of \$3.5 million for the TLS facilities
- 75% reduction of waste
- Over 120 tons of resources diverted from the landfill each year



The bottom line

- Provides \$1.95 million net savings over life of project
- Prevents 350 tons of soiled cardboard waste a year
- Decreases repetitive stress injuries



Where in the supply chain is reusable transport packaging used?

There are several areas along the supply chain that may hold advantages for the use of reusable transport packaging.

Inbound freight

Raw materials or subcomponents shipped to a processing or assembly plant, such as shock absorbers shipped to an automotive assembly plant, or flour, spices, or other ingredients shipped to a large-scale bakery.



In-plant or interplant work in process

Goods moved between assembly or processing areas within an individual plant or shipped between plants within the same company.



Finished goods

Shipment of finished goods to users either directly or through distribution networks.

Service parts

“After market” or repair parts sent to service centers, dealers or distribution centers from manufacturing plants.



Is reusable transport packaging right for your company?

Several factors determine whether it would be beneficial to change all or some of a company's one-time or limited-use transport packaging to a reusable transport packaging system.

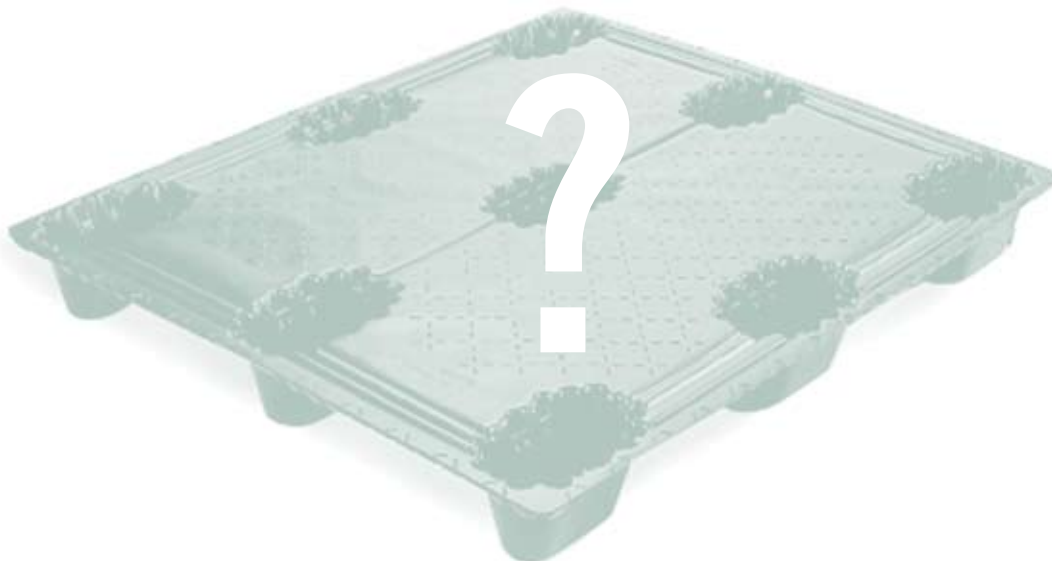
Once reusable transport packaging is shipped to its final destination and contents are removed, the empty transport packaging components are collected, staged, and returned without a great deal of time and cost. Reverse logistics—or the return trip for empty packaging components—must be repeated in a **closed- or managed open-loop shipping system**.

A reusable transport packaging system is easier to justify, maintain, and run if there is a **flow of consistent products in large volumes**. If few products are shipped, the possible cost savings of reusable transport packaging may be offset by the time and expense of tracking empty packaging components and reverse logistics. Significant fluctuations in shipping frequency or types of products shipped may make it difficult to accurately plan for the correct number, size, and type of transport packaging components.

Large or bulky products or those easily damaged are good candidates for reusable transport packaging. Larger products require bigger, more expensive one-time or limited-use containers, so the potential for long-term cost savings by switching to reusable transport packaging is great.

Suppliers or customers grouped near one another are likely candidates for reusable transport packaging cost savings. The potential to set up “milk runs” (small, daily truck routes) and consolidation centers (loading docks used to sort, clean, and stage reusable transport packaging components) creates significant cost-saving opportunities.

Inbound freight can be picked up and consolidated for delivery on a more frequent just-in-time basis. Outbound freight—the empty transport packaging components—can be sent back through this same logistical system.



Steps to get started

Generally, a company should consider switching to reusable transport packaging when it would be less expensive than one-time or limited-use transport packaging. The following six steps help you determine if reusable transport packaging can add profit to your bottom line.

1. Identify potential products

Develop a list of products frequently shipped in large volume and/or that are consistent in type, size, shape and weight.

2. Estimate one-time and limited-use packaging costs

Estimate current costs of using one-time and limited-use pallets and boxes. Include costs to purchase, store, handle and dispose of the packaging and added costs of any ergonomic and worker safety limitations.

3. Develop a geographical report

Develop a geographical report by identifying shipping and delivery points. Evaluate the use of daily and weekly “milk runs” and consolidation centers (loading docks used to sort, clean and stage reusable packaging components). Also consider the supply chain; it may be possible to facilitate a move to reusables with suppliers.

4. Review reusable transport packaging options and costs

Review the various types of reusable transport packaging systems available and the costs to move them through the supply chain. Investigate the cost and life span (number of reuse cycles) of reusable transport packaging components.

5. Estimate the cost of reverse logistics

Based on the shipping and delivery points identified in the geographical report developed in Step 3, estimate the cost of reverse logistics in a closed-loop or managed open-loop shipping system.

If a company chooses not to dedicate its own resources to managing reverse logistics, it can obtain the assistance of a third-party pooling management company to handle all or part of the reverse logistics process.

6. Develop a preliminary cost comparison

Based on the information gathered in the previous steps, develop a preliminary cost comparison between one-time or limited-use and reusable transport packaging. This includes comparing the current costs of one-time or limited-use packaging in Step 2 to the sum of the following:

- The cost for the amount and type of reusable transport packaging researched in Step 4
- The estimated cost of reverse logistics from Step 5



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Reusables Basics	Cost Comparison	Case Studies	Events & Workshops
<p>Reusable transport packaging offers environmental advantages while it adds to your bottom line. Click here to find out how reusable transport packaging can benefit your company.</p> 	<p>Hundreds of companies have already benefited from reusable transport packaging. These companies found that switching to reusables brought increased product protection, improved worker safety and efficiency throughout the distribution network. Do the numbers and see if it makes sense for your company.</p> 	<p>A viable alternative to one-time or limited use shipping containers, sturdy, long-lasting reusable transport packaging can save your company money, while reducing greenhouse gas emissions, decreasing waste and saving energy. Read what other companies say.</p> 	<p>Reusables 101 Workshop Summer 2007 Oakland, California Learn more</p> <p>Are Reusables Right For You? Fall 2007 Fremont, California Learn more</p> <p>Reusables: Beyond the Basics Winter 2008 Pleasanton, California Learn more</p>

Use Reusables is supported by the StopWaste Partnership and the Reusable Pallet & Container Coalition (RPPCC).

STOP WASTE PARTNERSHIP **REUSABLE PALLET & CONTAINER COALITION**



For additional assistance

If your preliminary cost comparison indicates that a reusable transport packaging system will save money, you may want to seek assistance to design and implement a reusable transport packaging system for your business.

Visit www.UseReusables.com for help identifying manufacturers, logistics providers, and other experts. They can help with a detailed evaluation and cost analysis of changing from one-time and limited-use pallets and boxes to reusable transport packaging.

If you want to do more research on reusables, see publications such as:

Inbound Logistics Magazine
www.inboundlogistics.com

Material Handling Management Magazine
www.mhmonline.com

For local assistance or questions about making your business more sustainable, contact the StopWaste Partnership at 1-877-STOPWASTE (786-7927), or send an email to Reusables@StopWaste.Org. Visit us at www.StopWastePartnership.Org for services we can offer your company.

Reusables 101 is brought to you by:

StopWaste Partnership

In 1990, Alameda County voters overwhelmingly approved Measure D, with the ambitious goal of reducing waste by 75 percent by 2010. Measure D required that StopWaste.Org dedicate a significant amount of its revenue stream to recycling and reduction initiatives that help divert waste from landfills.

The StopWaste Partnership has helped hundreds of local businesses save money and local resources through innovative programs, ultimately diverting waste from our local landfills. It makes good business sense as well as being good for our local communities.



RPCC

The Reusable Pallet & Container Coalition (RPCC) is a non-profit trade association representing manufacturers, poolers, distributors, retailers, educators, and others involved in the reusable transport packaging industry. The Coalition promotes the use or integration of reusable pallets and containers in North American transport packaging systems because of the economic, environmental, and safety benefits created by re-use. It advocates the growth of reusables, regardless of material, as a way to reduce energy, solid waste, and greenhouse gas emissions and to improve the system-wide productivity of industries employing reusable products and services.



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This document provided by the StopWaste Partnership and the Reusable Pallet & Container Coalition (RPCC). The StopWaste Partnership would also like to recognize and thank the Solid Waste Management Coordinating Board of Anoka County, Minn., who provided the original copy and concepts upon which we based this brochure. Images provided by IFCO SYSTEMS and ORBIS Corporation.