



CHANGE THE PALLET™ PRESENTS:

SUSTAINABLE CORRUGATED PALLET

Reducing Emissions, Saving Money, and Furthering
The Obama Administration's Sustainability Goals

MAY 2016

PALLETS 101



Pallet: A flat transport structure that supports goods in a stable fashion while being lifted by a forklift or pallet jack, and during transportation. Pallets form the backbone of global product transportation. **Wood pallets currently hold 93-95% U.S. market share.**

Wood Pallets

- Est. 2 billion wood pallets in circulation in U.S.
- Est. 450 million new wood pallets enter U.S. market each year
- Avg. wood pallet weighs 50 lbs (v. 10-lb corrugated pallets)
- **Cause a significant number of employee injuries each year**

U.S. Market

- Est. 10 billion pallet shipments in U.S. each year
- Utilizing ~400 million trucks
- Avg. truck trip of 500 miles = 200 billion annual truck miles
- **Most major buying entities have pallet shipping regulations**

Note: Each wood pallet requires at least two additional truck movements: one to point of use and a second from end destination. Citations for all statistics presented herein available upon request.



ADVANCING USG SUSTAINABILITY GOALS & REQUIREMENTS

Executive Order 13693 & Federal Regulations

1. Reduce Federal Motor Vehicle Fleet Emissions by 4% by 2017, 15% by 2021 & 30% by 2025
2. Reduce “greenhouse gas emissions across Federal operations and the Federal supply chain”
3. Purchase and provide preference to USDA “BioPreferred and biobased designated products”
4. Divert “at least 50 percent of non-hazardous waste” from landfills

Corresponding Corrugated Pallet Value Add:

- 1.a Reduce emissions by saving weight (each pallet is about 80% lighter than a wood pallet) and optimizing truck bed space
- 2.a Directing suppliers to ship on corrugated pallets cuts their footprints, helping meet Scope 3 emission reductions goals
- 3.a Only pallet of any material to have received a USDA Certified Biobased distinction
- 4.a Corrugated pallets are 100% recyclable, while many wood pallets end up in landfill



REPLACING WOOD WITH CORRUGATED PALLETS

GLOBAL PRECEDENT & SCALE

In 2012, IKEA® directed more than 1,000 global suppliers — spanning 51 countries — to begin shipping to IKEA stores and distribution centers on corrugated pallets:

- Annual savings of more than \$200 million (on shipping costs **alone**)
- 15% increase in truck efficiency (i.e., fewer trucks to ship same amount of product)
- 75,000 fewer metric tons of CO₂e **per year**

Note: 20 years prior to IKEA's decision, General Motors mandated that inbound supplier shipments be on corrugated pallets. That program remained in place for 16 years, during which time dozens of GM plants became "landfill free." GM has not commented publicly on its decision to discontinue the policy, but announced a partnership with leading pooled wood pallet company, CHEP, around the same time as the program's termination.

NOTABLE IKEA® QUOTES



“More freight comes to us packed on a truck than before – 45 wood pallets versus 66 cardboard pallets... this gained efficiency...has contributed to the increased store profitability...”

“[Lighter pallets] has not only opened up job opportunity for a more diverse and gender balance workforce, but helped to significantly reduce back injuries in our store.”

“[Our co-workers said] ‘Tell them that we would never go back to wooden pallets and we are proud of working at IKEA because of this change’.”

Note: IKEA’s Portland store manager, Ms. Alessandra Zini, testified before the Oregon House Economic and Transportation Committee in Feb. 2016. Quotes are from her testimony, which is available upon request.



NATIONAL OPPORTUNITY


Environmental

- 75 million fewer metric tons CO₂e / year
- 60 million fewer U.S. truck shipments / year
- Assuming 5.8 miles / gallon & 500-mile avg. trip = 5.17 billion fewer gallons of diesel consumed / year

Financial

- \$200 billion in annual (U.S.) shipping savings
- Does not include additional financial savings categories
- Systemic leakage largely falls onto taxpayers

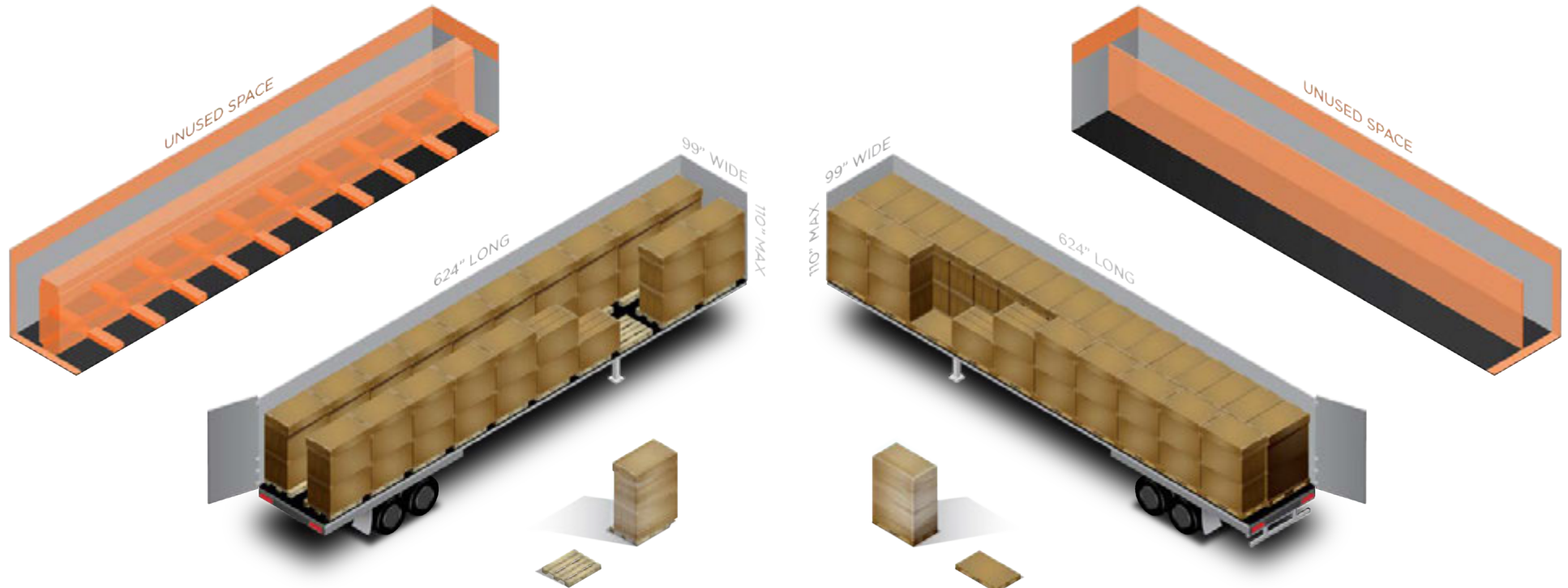
Note: IKEA® ships and receives 10 million pallets / year, which equals 0.1% of annual U.S. pallet shipments. To attain the national environmental and financial opportunities, we multiplied IKEA's reported savings (see p.5 herein) times 1,000. The objective is to provide an order of magnitude view of the total possible fewer emissions via a national shift to corrugated pallets, and the financial impact of shipping 80% less pallet weight and 15% fewer trucks.



ADVANCING EXECUTIVE ORDER 13693

TAKING TRUCKS OFF THE ROAD™

MAXIMIZING TRUCK BED VOLUME



Current Trailer Load Configuration

- All wood pallets 48"x40"
- Space of 19" between rows
- **Max load: 140 boxes**

Corrugated Pallet Custom Load Configuration

- Custom corrugated pallet 61"x 36"
- Space of 2" between rows
- **Max load: 189 boxes**



INCREASING PRODUCT-PER-TRUCK BY UP TO

THIRTY-FIVE PERCENT (35%)



ADDITIONAL ADVANTAGES

Attained with Corrugated Pallets

Transportation Costs Reduced

- Fewer trucks to transport same amount of product
- Fewer man hours
- No pallet repair or disposal costs

Increased Agency Efficiency

- Operations simplification
- Streamlined pallet management
- Personnel safety

Environmental

- Reduced carbon emissions
- Less landfill
- 100% recyclable post-use

Other Efficiencies & Savings

- Pallet disposal simplification
- Reduced space for pallet storage
- Reduced product damage

MAXIMIZING TRAILER BED IN PRACTICE (I)



Pallet-01 is 36x36"



Pallet-02 is 61x36"



Note: Unlike most wood pallet loads, many types of corrugated pallets can be double-stacked in the trailer.

MAXIMIZING TRAILER BED IN PRACTICE (II)



Made to spec 32x32"



Utilizes entirety of truck bed floor area





USG PURCHASING POWER: TRIGGERING NATIONAL INNOVATION

Much like IKEA® (and GM before it) drove sustainable shipping practices for its 1,000+ suppliers, so too can the USG put to work its \$450 billion in annual goods and services procured by mandating that supplier shipments to Federal Agencies be on corrugated pallets

- Most major buying entities (e.g. retailers, grocers, etc.) have shipping regulations with respect to pallets
- To our knowledge, the USG (via the Federal Acquisition Requirements), **does not** specify the type of pallet sent to an agency or other USG buyer

Note: The exceptions are Defense Logistics Agency and the Armed Services, which require suppliers to ship on wood pallets. The governing regulations are: MIL-STD-147 and ANSI-MH1-2005.



SUPPLIERS WILL ACCEDE TO USG SPECIFICATIONS

In November, 2015, a senior Lockheed Martin executive confirmed in an email that her company would comply if directed to ship on corrugated pallets:

“Adam- thank you for the note and your update on working within the DoD. At this time, I do not think there is a need to meet as our supply chain people have the information and **have said they look for their contract specs to dictate packaging options.** Perhaps your efforts will help change that.”



ACHIEVABLE NEXT STEPS

1. Work with leading suppliers (e.g., Office Depot or Dell) to test full truckload shipments from the suppliers to USG agencies and facilities.
2. Test the “bid spec directive” model via one agency or one agency facility. For example, NASA’s Ames Research Center is a national facility leader in sustainability. A test requiring that all shipments to facilities be on corrugated pallets will provide significant data across suppliers.
3. Work with agencies and procurement officers (e.g., the Chief Acquisition Officers Council) to stock corrugated pallets at agencies for use in intra-agency truck shipments. For example, from a DLA distribution facility to a domestic Army base.

Note: These options assume dual-objectives of data collection and triggering market-wide dialogue and testing.



KEY STAKEHOLDERS

Pro

- Packaging, corrugated & paper companies
- Workers, unions & worker safety advocates
- State and municipal governments
- End-recipients of wood pallets: universities & colleges, federal, state & municipal agencies, public schools

Likely Neutral or Con

- Wood pallet companies (e.g., CHEP)
- National Wood Pallet & Container Association
- Lumber companies & related associations
- Retailers, grocers & related associations

Note: There are several U.S. providers of corrugated pallets, which can be produced at most any corrugated manufacturing facility. There are several hundred such facilities in the U.S. Availability and competition are not impediments.



ADAM PENER

CHANGE THE PALLET

ADAM@CHANGETHEPALLET.ORG

720-202-2206

WWW.CHANGETHEPALLET.ORG

DESIGNED BY

ARMS & ANCHORS