Boosting Freight Sustainability at Lower Costs
Today’s Speakers

Lecedra Welch
Program Manager of Environmental Sustainability - AIAG

Al Hildreth
Global Energy Manager - GM

David Hoover
Director of Outbound Logistics - Meijer

Steve Sorenson
Domestic Transportation Manager - Nordstrom
Lecedra Welch, Program Manager, Environmental Sustainability

Lecedra Welch, Program Manager of Environmental Sustainability, joined AIAG in March 2014. She is responsible for managing collaborative volunteer projects addressing critical issues throughout the automotive supply chain and creating an environment where stakeholders can work together to develop recommendations, guidelines and best practices for the good of the industry.

Prior to joining AIAG, Ms. Welch worked as for Veolia Environmental Services, as Waste Manager for two Ford manufacturing facilities. Her responsibilities included project and program management and waste minimization. She has over 13 years of experience in Environmental Management. She has received a Bachelor’s of Science degree from Michigan State University in Chemical Engineering.
- Globally recognized trade association

- Unique forum to collaborate on industry issues
  - Mitigate Risk
  - Manage Uncertainty
  - Drive pervasive access and utilization of the solutions developed by the industry, for the industry

- Deliverables include: Publication, training or an event
Environmental Survey

**Purpose:**
- AIAG conducted a survey specifically on environmental sustainability to learn what trends and challenges we could help our AIAG members address.

**Topics of interest:**
- GHG / Air Emissions
- Energy Use & Renewable
- Water Management
- Waste Management
- Resource Management
Environmental Survey con’t

- **Statistics:**
  - Over 3K people clicked on the survey link
  - Received 478 responses
  - 242 completed the survey
  - 51% response rate

- **Respondents:**
  - Volunteers in 2 of our areas of AIAG: CR and Supply Chain
Some of the trends that we noticed when results were calculated, were:

- 46% of organizations responding were interested in benchmarking GHG/Air emissions.
- 44% of responding organizations would benefit from direct assistance with measuring/analyzing or reporting environmental metrics.
- 73.1% of companies have a general sustainability strategy.
- 54.7% have a defined sustainability strategy with specific metrics and targets.

We learned that even though the organization’s interest in environmental sustainability is high (54.3%) and the leadership considers it important to incorporate environmental sustainability in their corporate strategy (48.5%)...only 32.5% of the organization’s workforce considers environmental sustainability to be important.
Al Hildreth is global energy manager for General Motors, and manages the teams responsible for energy use at all of GM’s facilities around the world. Under his leadership, GM has participated in the EPA SmartWay and Energy Star programs and have received recognition five years in a row.

Al co-chairs the Automotive Industry Action Group’s Greenhouse Gas and Water Work Groups, and leads GM’s work to share best practices with suppliers through the Suppliers Partnership for the Environment and CDP. He has worked for GM for over 35 years in positions of increasing responsibility and holds a patent for an energy forecasting model, has authored a college textbook offering tools for energy management for businesses and recently became a technical fellow.

He’s earned a Bachelor of Science in engineering from Oakland University and a Master of Science in engineering from Rensselaer Polytechnic University. He is a registered Professional Engineer and Certified Energy Manager.
BOOSTING FREIGHT SUSTAINABILITY AT LOWER COSTS

Al Hildreth
Global Energy Manager
General Motors
Chevrolet Bolt EV gets an EPA-estimated 238 miles per charge

Supply Chain
- 21,000 businesses
- 200,000 items
- $90B spend (2/3 cost)
- 170 manufacturing locations
- 30 countries
SUPPLY CHAIN SUSTAINABILITY MANAGEMENT AT GM

- Guiding principles enhance sustainability performance
- Localization manages
  - Risk
  - Cost
  - Carbon emissions
- Measure (SmartWay® / CDP)
- Actions – cost and carbon

“Build where we sell, buy where we build.”
1. SmartWay® Carrier truck information US and Canada
   a. CO2 distance intensity, g/mile or g/ton-mile
   b. CO2 mass emissions, tons
2. (1) Ocean carrier detailed GHG tons by route
3. GM Logistics information by mode
   a. Spend by Carrier, USD
4. GHG Calculation
   a. SmartWay® Truck US & Canada, tons
   b. (1) Ocean Carrier direct report, tons
   c. Revenue intensities calculated by mode (tons/USD)
   d. (SmartWay®, (1) Ocean carrier, CDP)
   e. Tons = Revenue (USD) X revenue intensity
WHERE’S THE CARBON IN THE AUTO LIFE CYCLE?

Upstream & Downstream Logistics Carbon (GHG)

- 4th largest GHG emission
- 5.6 million metric tons
- Equivalent to 1.2M vehicles driven for a year
In 2015 GM initiated 841 initiatives for cost savings and carbon reduction

- 81,216 tons reduced
- 1.5% GHG reduction
- 181.8 million USD saved
- Top five saved 80% GHG
- $2,200/ton logistics savings vs. $188/ton for plant energy efficiency

### Initiative Type

1. FOB Change
2. Frequency Change
3. Route Redesign
4. Rack Return Ratio
5. Truck to Rail
6. Regional Optimization
7. Container Modification/Change
8. Intermodal to Rail
9. Mode Optimization
10. Container Standard Pack Change
11. Equipment Change
12. Scheduling Optimization
13. Container Type Change
14. Truck to Intermodal
15. Miscellaneous
16. Shuttle Redesign
17. Rate Change
18. Schedule Pack
19. Truck to ODC
Questions?

alfred.j.hildreth@gm.com
Dave Hoover--Meijer Outbound Logistics Director

- 30 Years – Logistics, Distribution, and Retail Supply Chain Management
- Accountable for Meijer Fleet and Dedicated Fleet Operations
  - Meijer has one of the most fuel efficient fleets in the industry
- EPA / SmartWay Excellence Award winner
- Heavy Duty Trucking Innovator Award winner
Transportation Sustainability

- Meijer operates 231 stores and employs nearly 68,000 team members.
- Meijer stores are located in six states: Michigan, Ohio, Indiana, Illinois, Kentucky, and Wisconsin.
- The stores average 210,000 sq. feet with an average of 280 team members staffing each location.
Transportation Sustainability

“I want to leave the world in a little better shape than when I entered it.”

Environmental Commitment

- Environmental Compliance
- Local and sustainable products
- Carbon footprint intensity reduction
- Waste reduction
- Responsible growth
Transportation Sustainability

- Freight capacity matching

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Transportation Sustainability

- Vendor pick up locations
Transportation Sustainability

- Reduction empty miles

<table>
<thead>
<tr>
<th>Fiscal Period</th>
<th>Broker</th>
<th>Ship Day of Week</th>
<th>36.32% Growth</th>
<th>$427,205 YTD Revenue</th>
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<td>All</td>
<td>All</td>
<td></td>
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<td>$313,383 YTD LY Revenue</td>
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Period 4
- 436 Load Counts
- $147,555 Revenue
- $71,806 LY Revenue

Shipper Locations Drilling Down to Destinations as of Period 2

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Transportation Sustainability

- Backhaul – Collaboration
  - This reduces both the empty return trip from Granite City to Chicago and Chicago to Lansing reducing 480 empty miles in two different supply chains for each load.
  - Over $500 savings per load
The Meijer Private Fleet was recognized by Heavy Duty Trucking Magazine as one of the “Top 50 Green Fleets” in the country for 2016 in their November edition.
Transportation Sustainability

- Equipment and Maintenance
  - Mechanic training / Automotive Service Excellence (ASE) certification
Transportation Sustainability

- All DOT CSA scores well within acceptable thresholds – best of class
  - Best US DOT crash score in our history
Transportation Sustainability

Technology - Equipment

- 5% More Fuel Efficient than last year's model
- Programmed Engine ECM for Short Idle, Speed, and Fuel Economy
- Roll Stability Control Collision Mitigation
- Use of Advanced Aerodynamics to achieve best in class fuel economy
- Use of Single Wide Tire Technology with Low Rolling Resistance and Aluminum Truck Rims
- 100% Of our fleet is Now 2014/2017 EPA Emission.
- Virtual Technician Fault Codes are Sent in Real Time to our maintenance department
- Advanced Detroit Diesel 12.9 Liter Engine is Quiet and Clean
- This Tractor has all wheel disc brakes for Shorter Stopping Distances and Low Maintenance Costs
- 65 Times Cleaner than Previous Trucks they replaced First Fleet in North America to Use Them
- Automated Manual Transmission No Clutch Pedal or Stick Shift Less Driver Fatigue and Consistent Fuel Economy
Our new trucks are showing a 13% fuel economy improvement compared to our oldests.
Transportation Sustainability

- Electric reefer
“Posi-Lift Axle” – We implemented a new lift axle. If the trailer weighs less than 18,000 lbs., the axle lifts automatically.

The advantages are:
- Lower rates on toll roads
- Lower rolling resistance
- Better fuel economy
- Less tire and brake wear
Transportation Sustainability

- Load Optimization
  - To be a good truck loader, you need to keep a lot of people happy.

- Keep it legal
- What I ordered, easy to count and unload and is undamaged
- Balance the load and don’t let it move around
- Load it fast and damage free
Actual expectation of utilization of available trailer capacity
Transportation Sustainability

- Capacity / trailer opportunity
  - Additional “lift axle” allows us to haul up to 90,000 lbs., which works well for the milk deliveries and milk shuttles.
Thank You

Any Questions?
Steve Sorenson has worked in the logistics industry for over 25 years. His experience with Expeditors International, Amazon and Nordstrom for the last 16 years has covered all modes of international and domestic transportation.

Sorenson currently leads and supports a team to insure the efficient and timely movement of merchandise from vendors to DC’s/FC's and stores. He is responsible for identifying and contracting with new carriers including introducing intermodal transportation into the inbound Nordstrom network in 2012.

The transportation team at Nordstrom has lead an effort to improve the average cases moved per gallon of fuel by which has resulted in an improvement of 3 cases/per gallon in the last 4 years.
CONSERVE RESOURCES
OFFER SUSTAINABLE, HEALTHIER PRODUCTS
REDUCE OUR CARBON FOOTPRINT

GIVE BACK AND SUPPORT OUR EMPLOYEES IN GIVING BACK
SUPPORT HUMAN RIGHTS

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## RILA Sustainability Model – Excelling But Not Leading Yet

**Transportation and Logistics**

### Initiating
- Aware of impact of transportation decisions on the environment
- Baseline emission measurements
- Sustainable transportation initiatives are in early planning stages

### Progressing
- Employs improved blend of rail, road, and air transportation modes
- Includes capacity management as a criteria in managing distribution
- Uses or tests some alternative fuels in transportation vehicles

### Excelling
- Packaging and transportation system designs concurrently occur to optimize flow of goods and minimize space and energy usage
- Develops innovative shipping mechanisms to maximize load capacity
- Uses reusable containerization for nearly all many products
- Participates in EPA SmartWay
- Recognized EPA SmartWay Carrier & Shipper with a highly ranking score

### Leading
- Demonstrates reduction of environmental impact by optimizing transportation & warehouse network
- Replaces vehicle fleet with ‘green vehicles’
- Considers emissions when selecting transportation vendors

### Transforming
- Forms transportation alliances to maximize load capacity and minimize waste
- Recognized excellence in reducing environmental impact from transportation strategies
Achieving Sustainability Through Load Capacity

- Dedicated fleet
  - Second-largest single carrier spend
  - A critical part of our network
- Our key performance measure: “cases moved per gallon of fuel”
Transforming Through Collaboration

We’re at the early edge of collaboration…
• Urban Freight Lab founding member
• Final 50’ Initial Project

…but are still looking for ways to expand and partner with others
Inward: Strengthening relationships with existing suppliers
Outward: Aligning across industries
Thank You
If you have any questions about today’s webinar or SmartWay, here’s how to contact us:

Jackson-Stephens.Joann@epa.gov
SmartWay Brand Manager

Martz.Kathleen@epa.gov
SmartWay National Regions Manager

Thornton.Patrice@epa.gov
SmartWay Affiliate Program Manager

Turkington.Marcia@epa.gov
SmartWay Shipper Account Manager

www.epa.gov/smartway