

Boosting Freight Sustainability at Lower Costs



Automotive Industry Action Group



meijer

NORDSTROM

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.

AIAG Environmental Survey Results

Lecedra Welch
AIAG

*Program Manager, Environmental
Sustainability*



| Insight. Expertise. Results.

- 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

- 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

- **Statistics:**

- Over 3K people clicked on the survey the 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 bench-marking 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*



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Al Hildreth-- Global Energy Manager, General Motors

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.

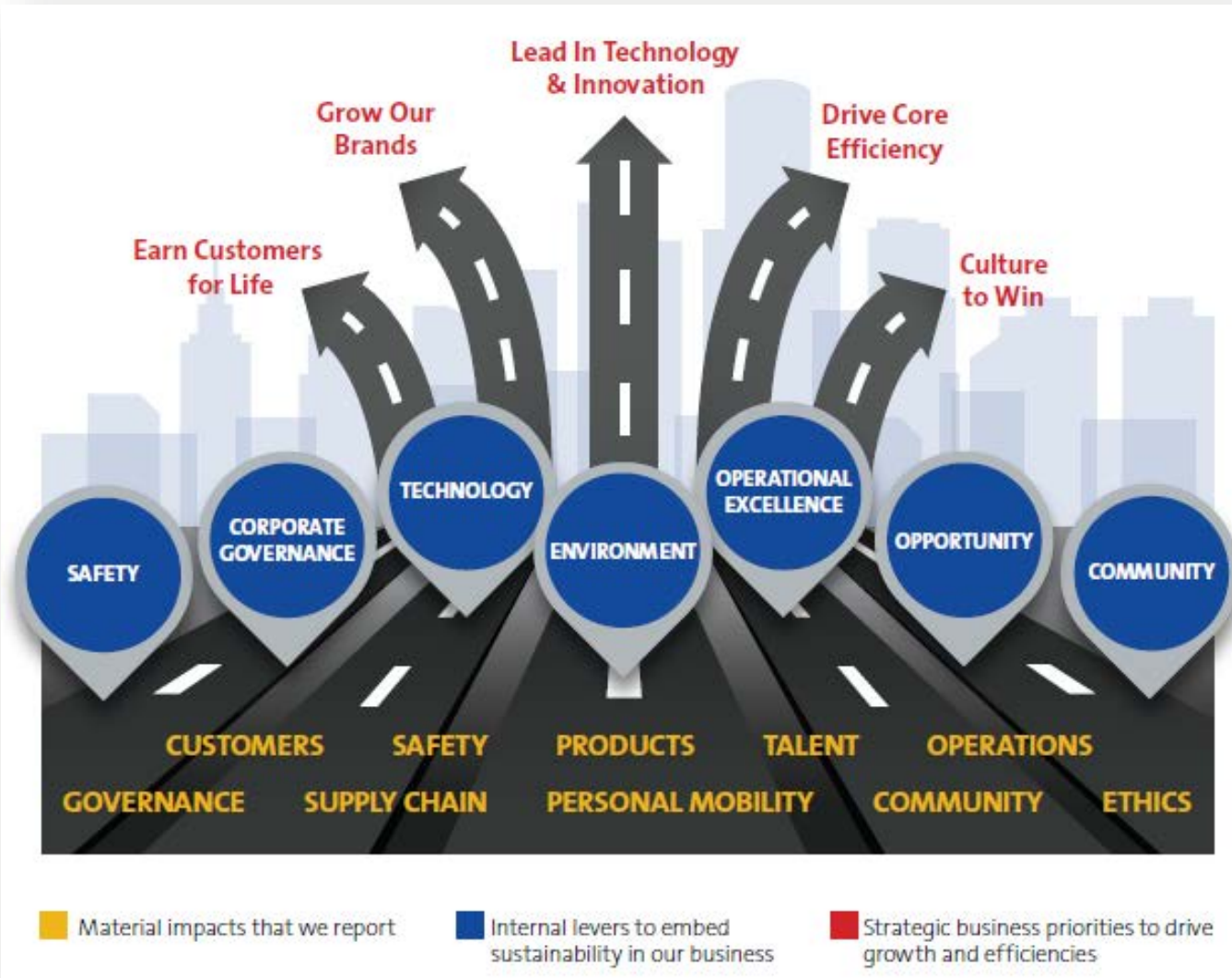
BOOSTING FREIGHT SUSTAINABILITY AT LOWER COSTS

Al Hildreth
Global Energy Manager
General Motors



GENERAL MOTORS

GENERAL MOTORS - SUSTAINABILITY



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



The image shows a banner for the Automotive Industry Guiding Principles to Enhance Sustainability Performance in the Supply Chain. At the top, logos for AIAG, DAIMLER, FCA (FIAT CHRYSLER AUTOMOBILES), Ford, GM, HONDA, TOYOTA, and VOLVO (Volvo Car Corporation) are displayed. Below the logos is a dark blue bar with the title "Automotive Industry Guiding Principles to Enhance Sustainability Performance in the Supply Chain" in white text. Underneath the bar is a white box containing the text: "We endeavor to achieve excellence, innovation and performance in a sustainable manner. People and the environment are the automotive industry's most important resources. For this reason, we are working together to attain the highest standard in business integrity and in the social and environmental performance of our supply chain."

“Build where we sell, buy where we build.”



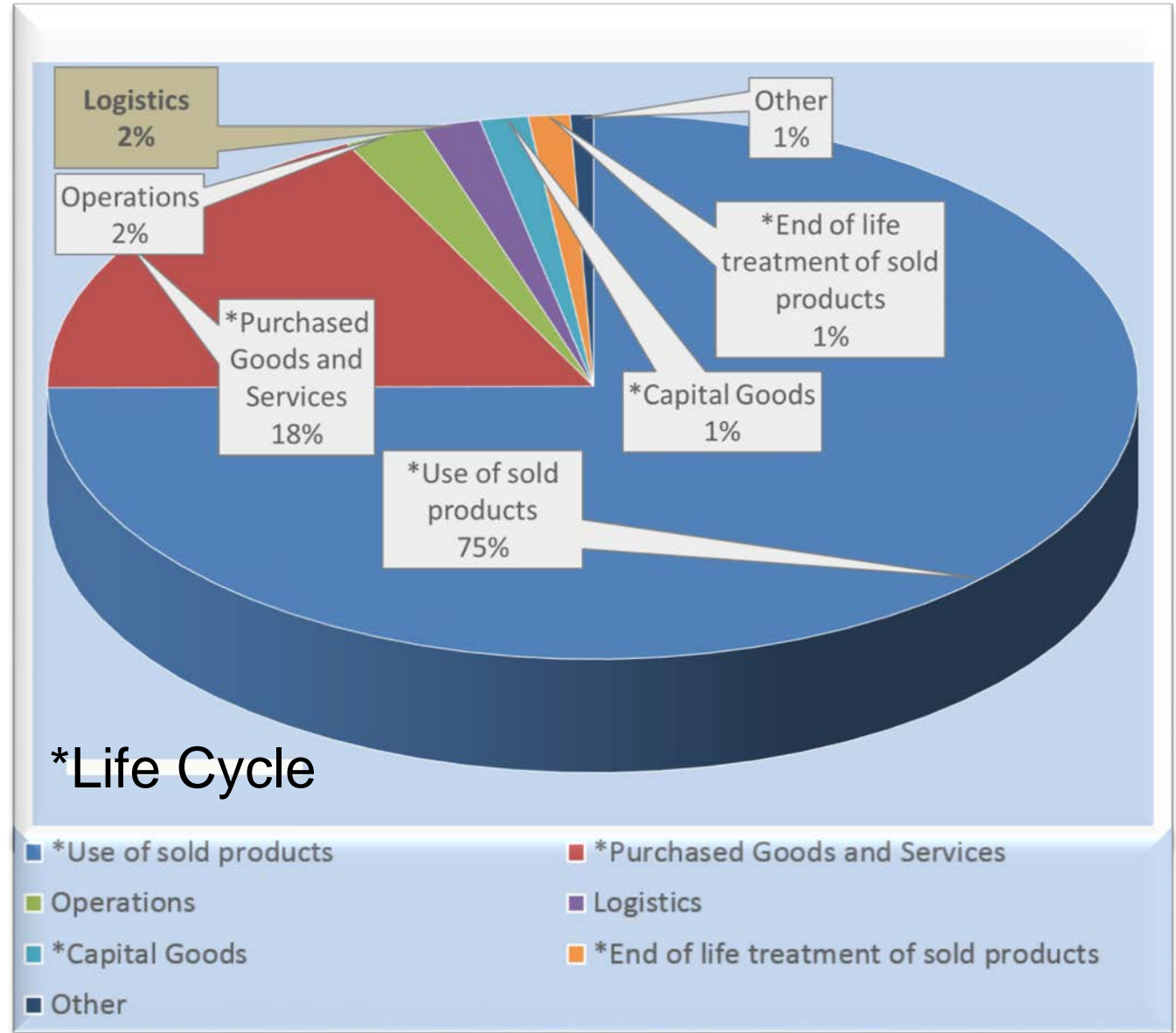
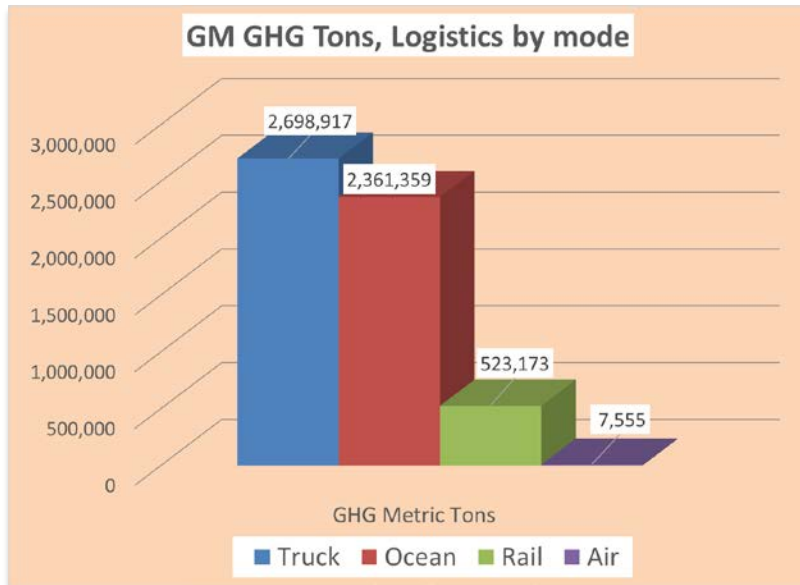
CALCULATING CARBON EMISSIONS

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



GM LOGISTICS CARBON REDUCTION

- 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

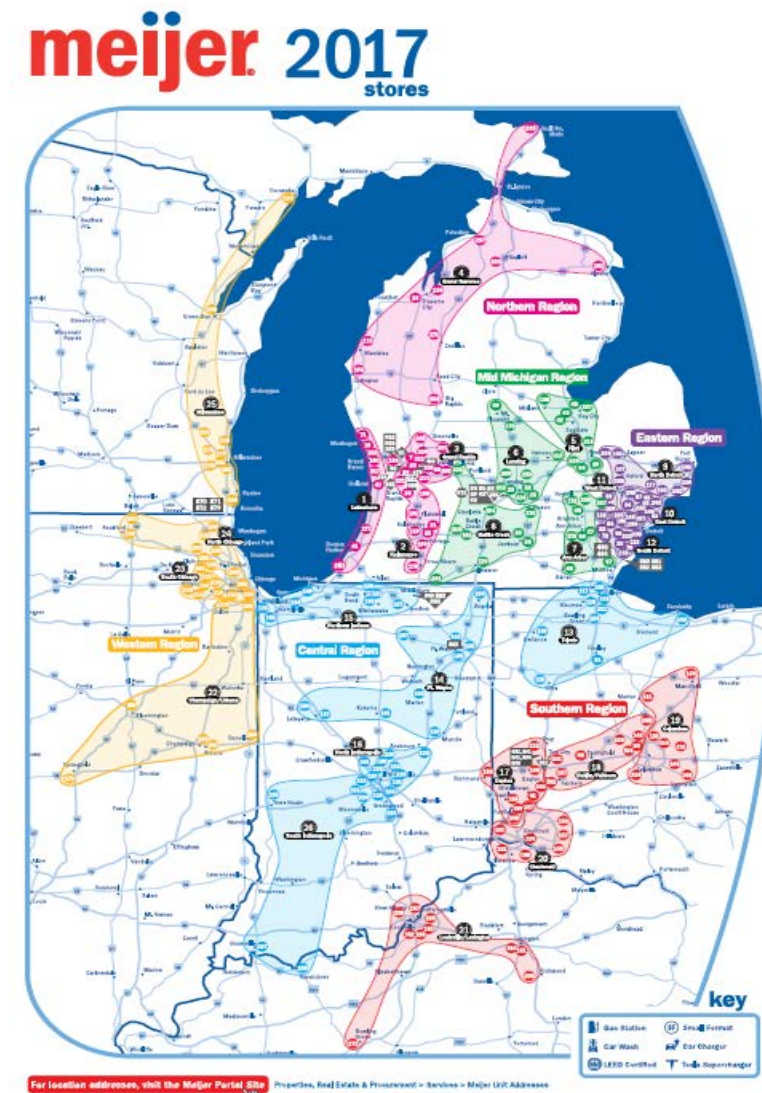
TRANSPORTATION SUSTAINABILITY



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.



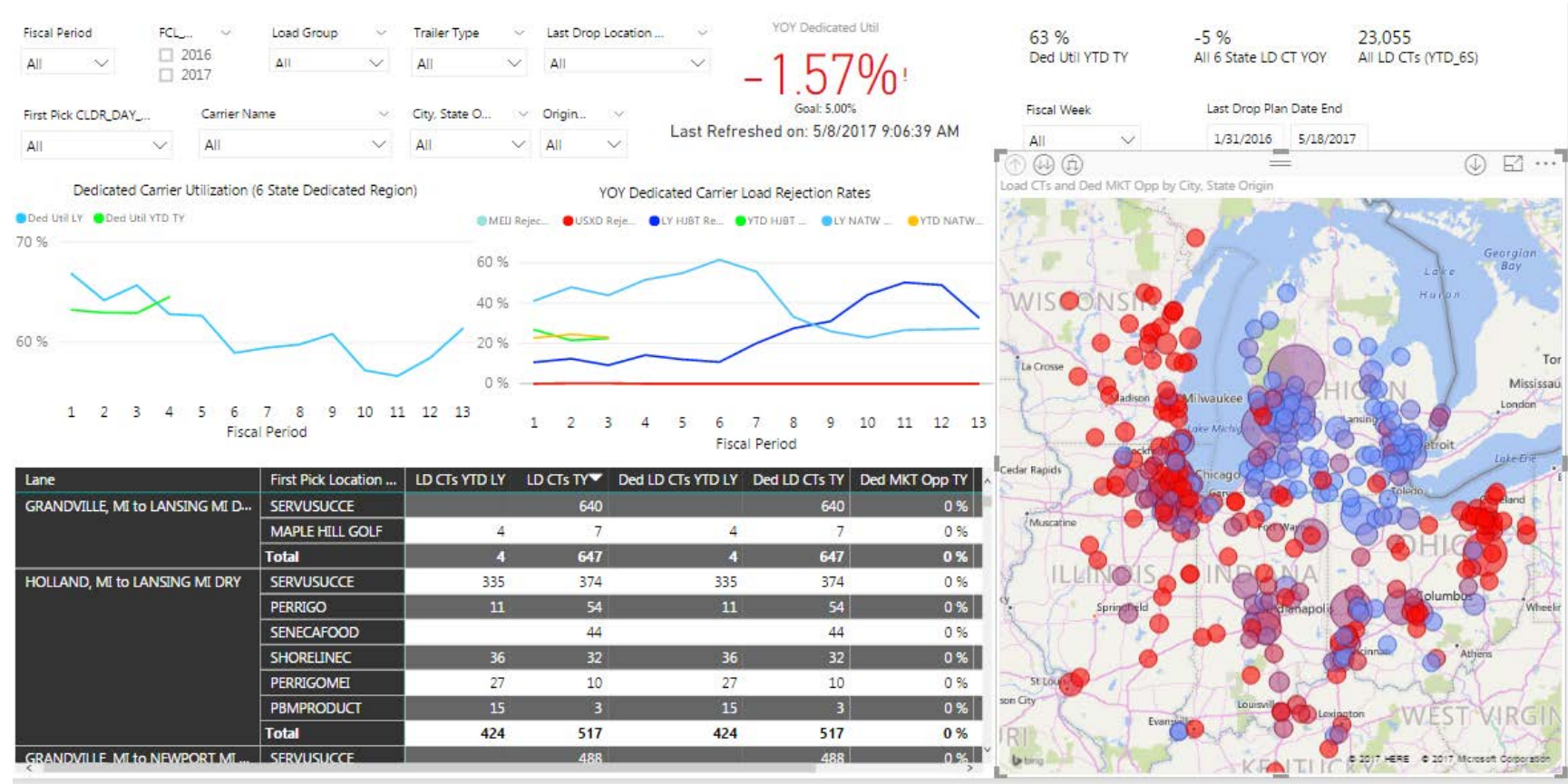


“I want to leave the world in a little better shape than when I entered it.”

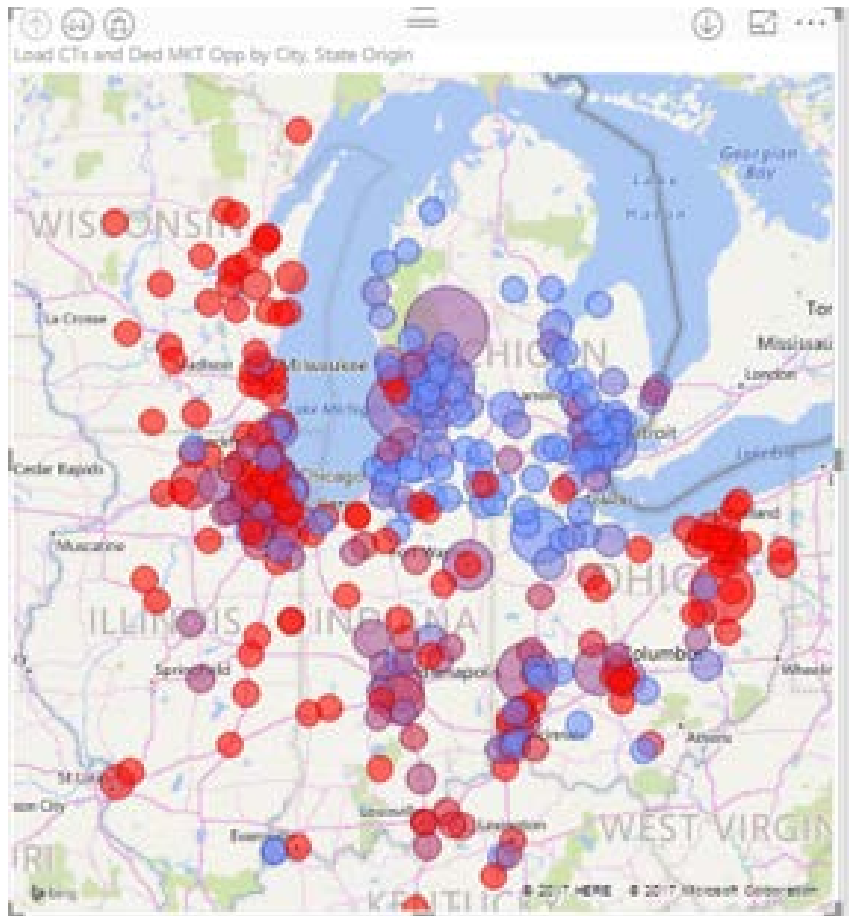
Environmental Commitment

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

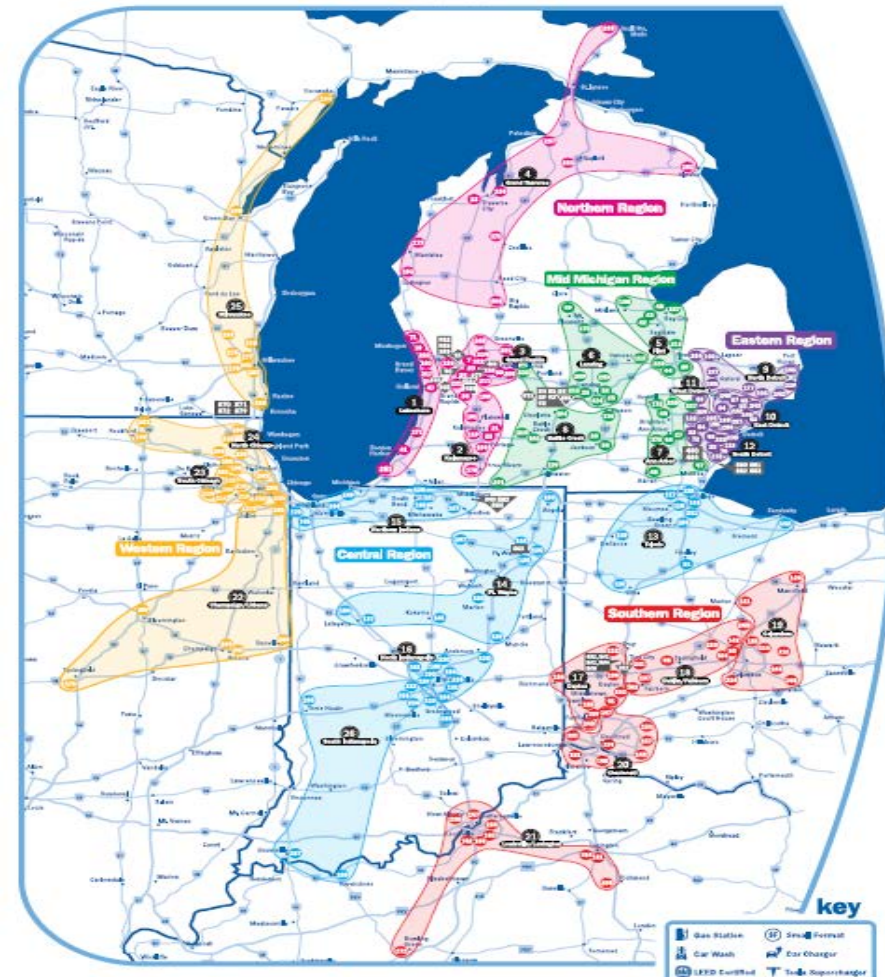
Freight capacity matching



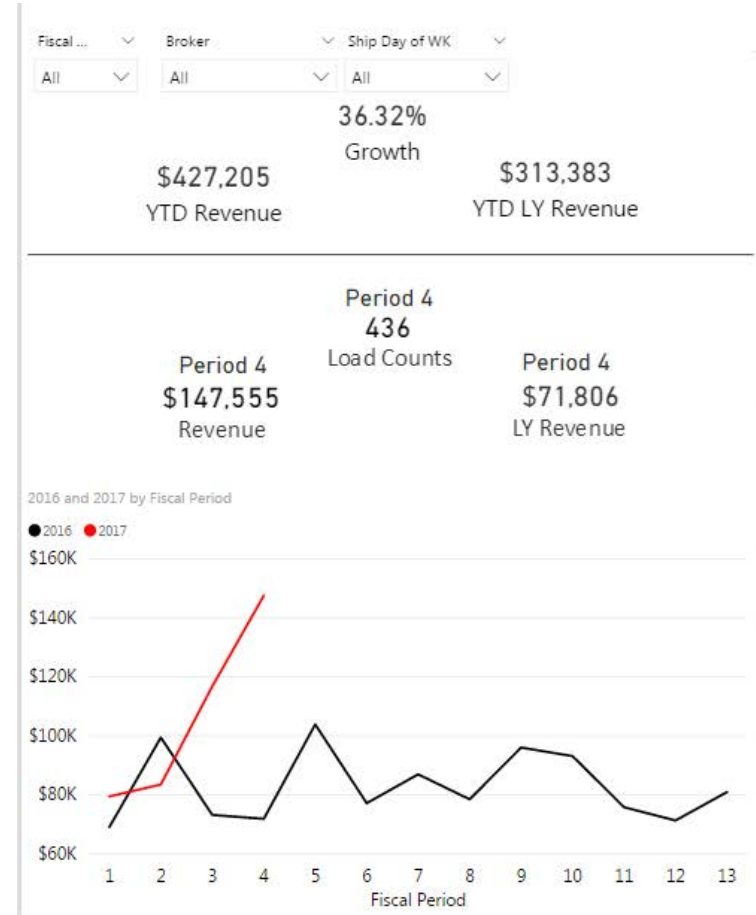
- Vendor pick up locations



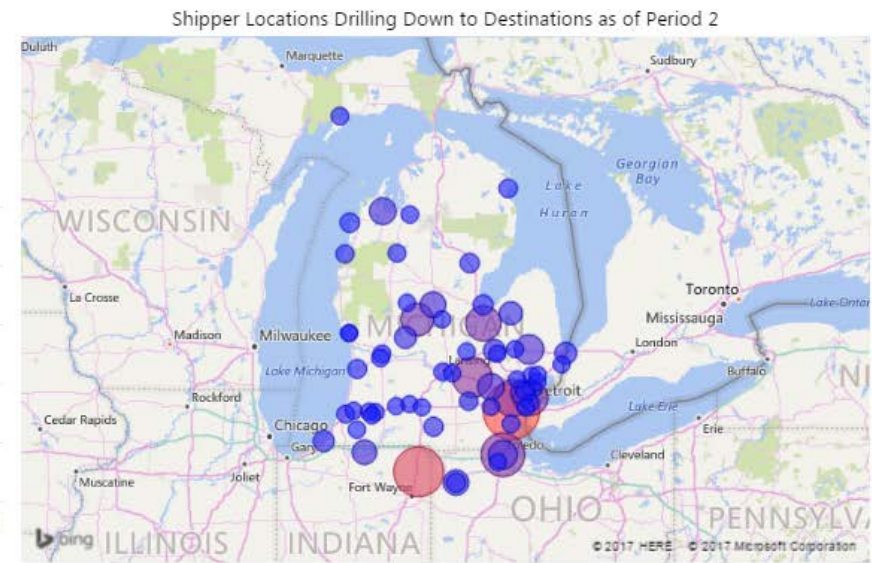
meijer 2017 stores



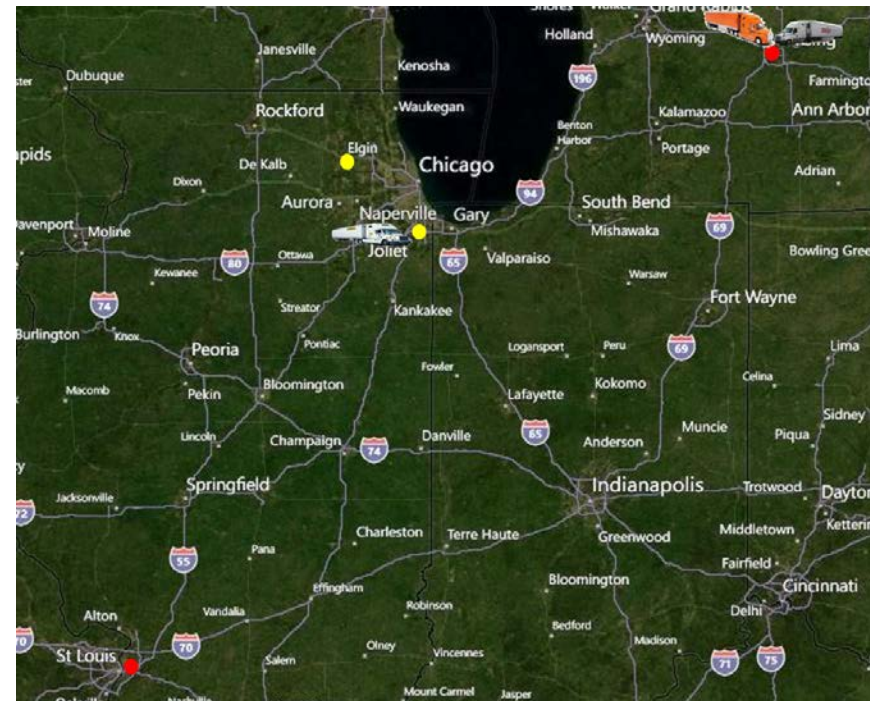
- Reduction empty miles

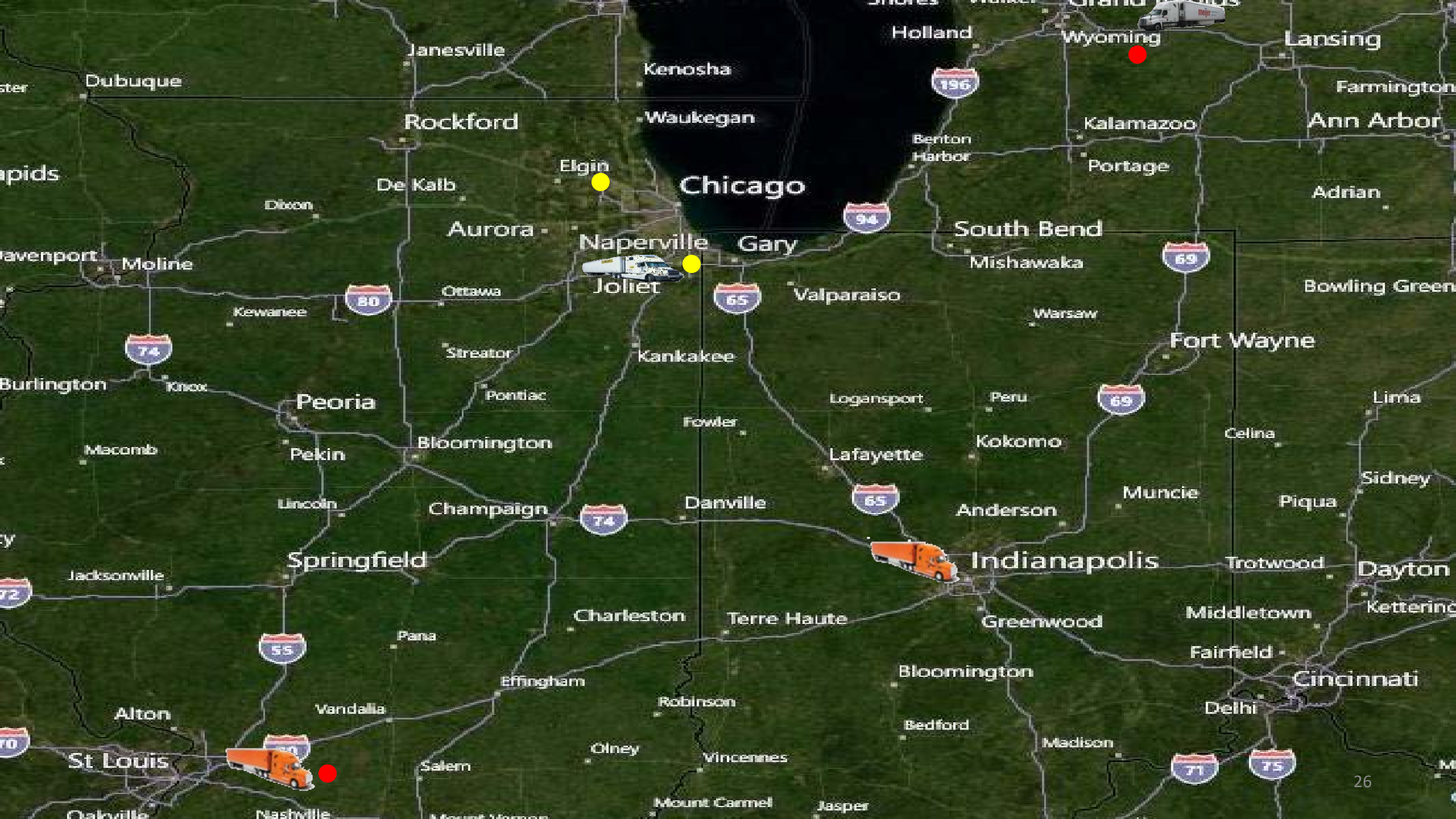


| Shipper | Consignee | Shipper City, State | Consignee City, State | Load CT (As of P2) | Revenue |
|------------|-----------|---------------------|-----------------------|--------------------|---------|
| Old Castle | Lowes | Waterloo, IN | Ypsilanti, MI | 28 | \$7,000 |
| | | | Kentwood, MI | 17 | \$5,100 |
| | | | niles, MI | 14 | \$3,500 |
| | | | Jackson, MI | 12 | \$3,000 |
| | | | Grand Rapids, MI | 10 | \$2,975 |
| | | | Holland, MI | 7 | \$2,100 |
| | | | Grandville, MI | 6 | \$1,800 |
| | | | Benton Harbor, MI | 5 | \$1,250 |
| | | | Portage, MI | 5 | \$1,250 |
| | | | Lansing, MI | 4 | \$1,000 |
| | | | Kalamazoo, MI | 3 | \$750 |
| | | | Battle Creek, MI | 2 | \$500 |
| | | | Harper Woods, MI | 1 | \$325 |



- 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

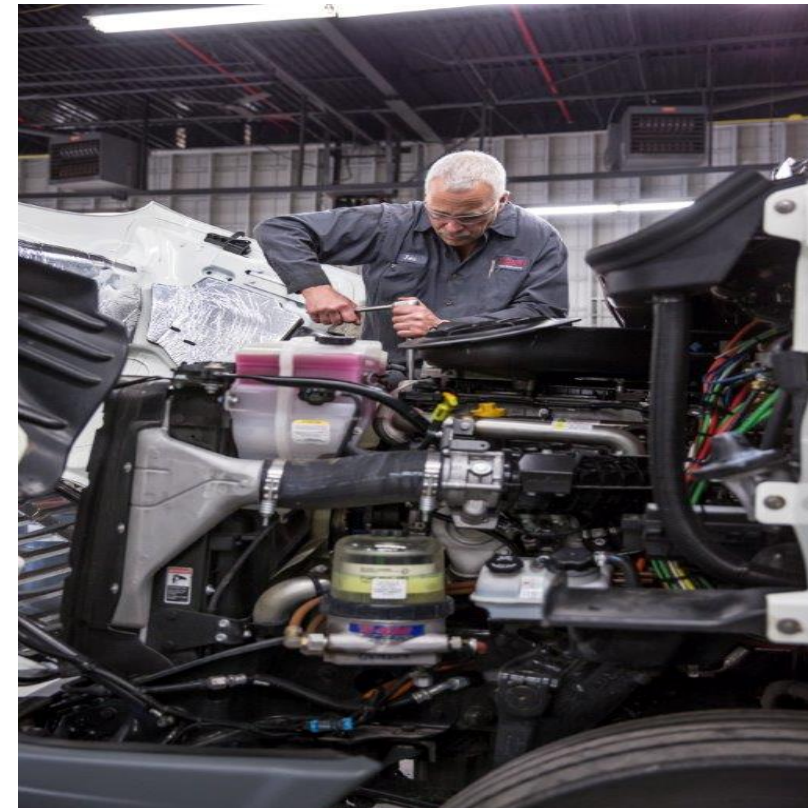




- The Meijer Private Fleet was recognized by Heavy Duty Trucking Magazine as one of the “Top 50 Green Fleets” in the country for 2016 in their November edition.



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



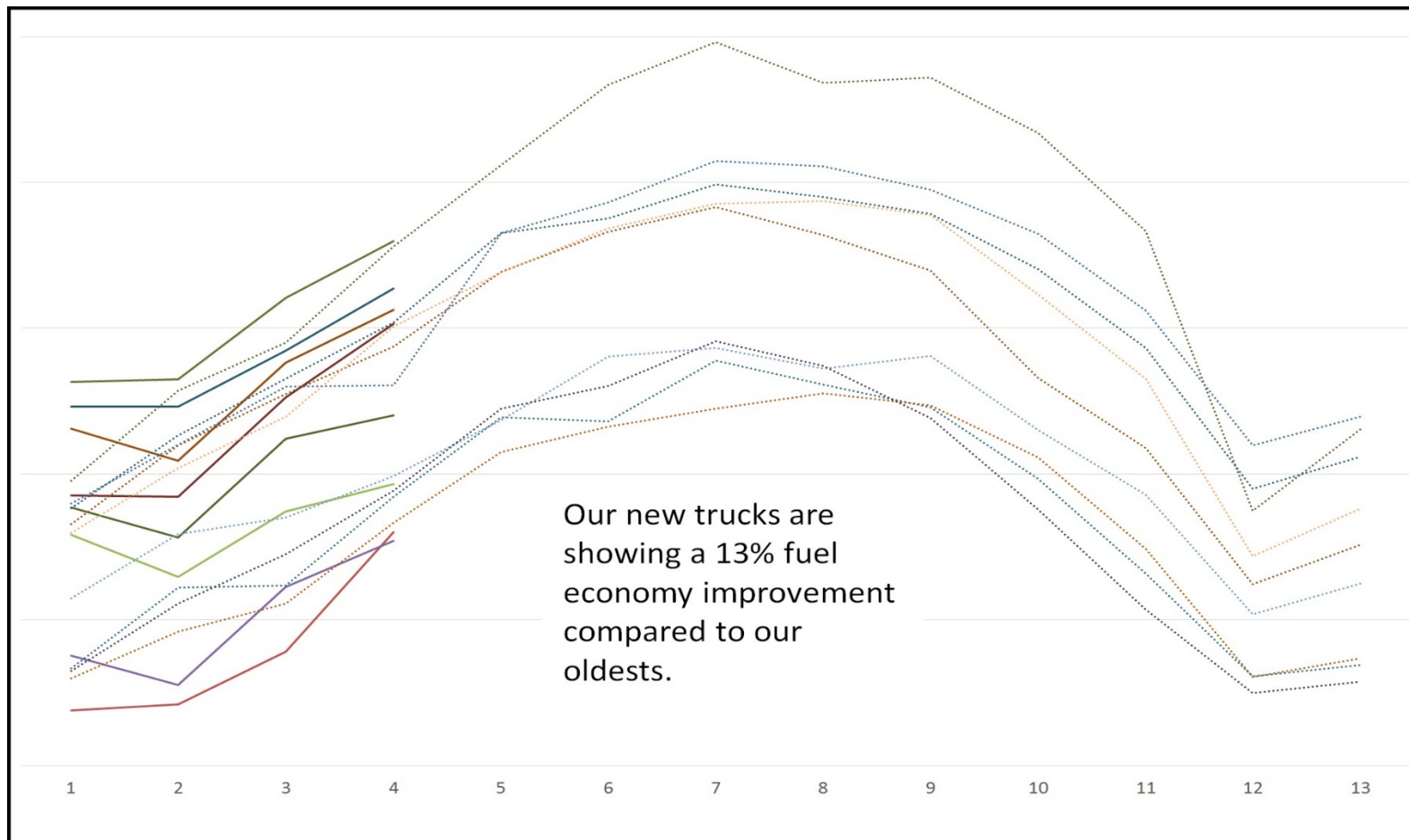
- All DOT CSA scores well within acceptable thresholds – best of class
 - Best US DOT crash score in our history



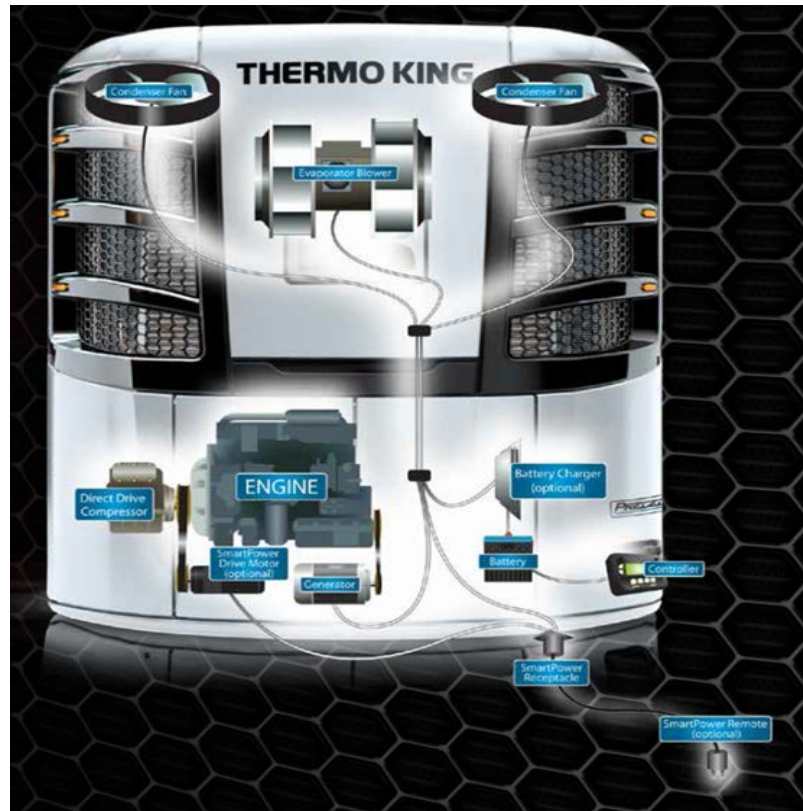
Technology - Equipment



MPG Tracking by Model Year Truck



- Electric reefer

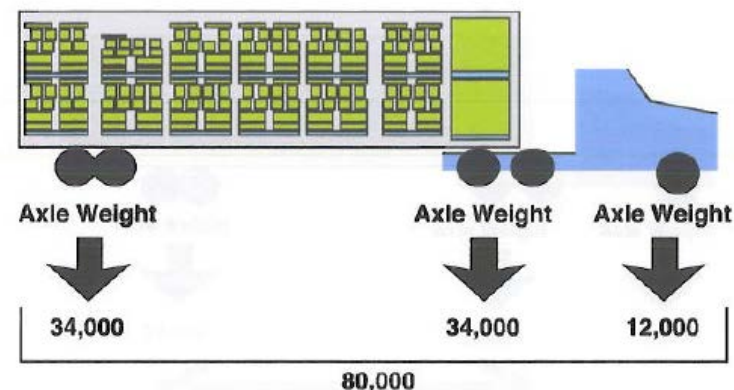
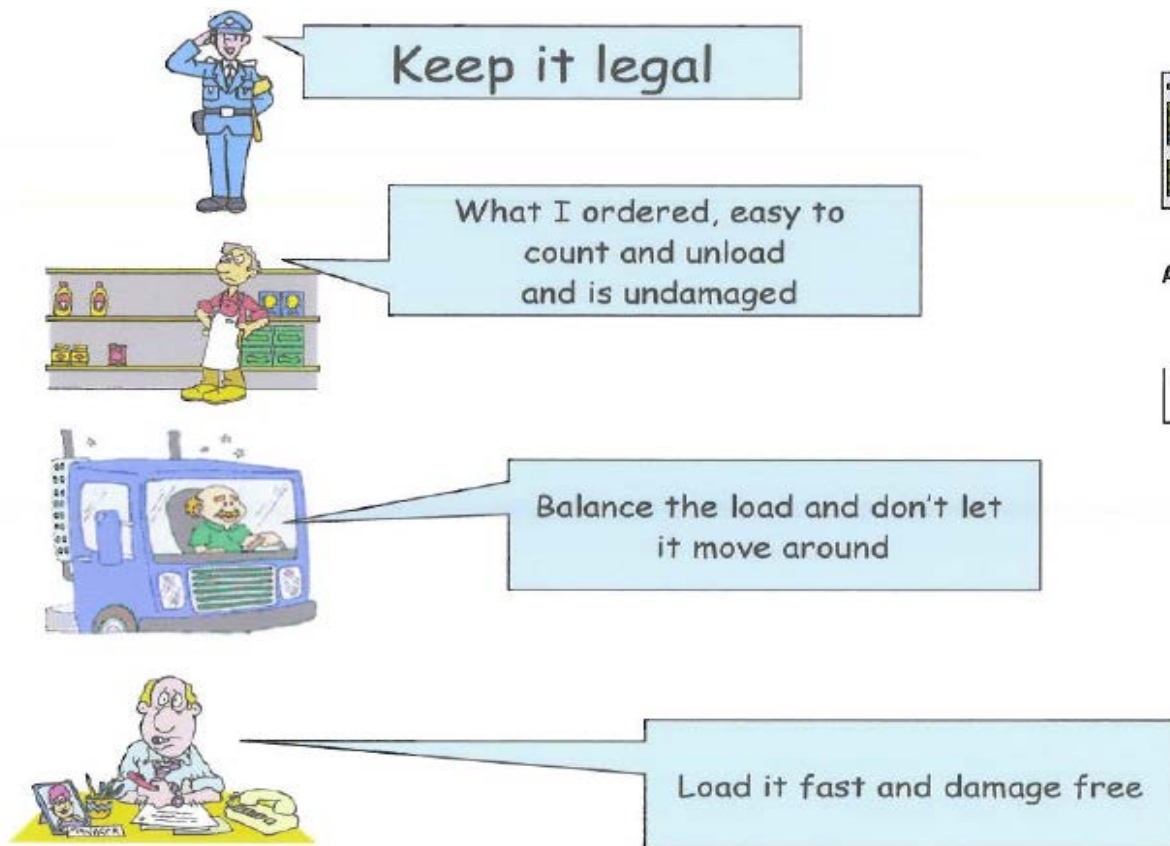


- “Posi-Lift Axle” – We implemented a new lift axle. If the trailer weighs less than 18,000 lbs., the axle lifts automatically.
- The advantages are:
 - Lower rates on toll roads
 - Lower rolling resistance
 - Better fuel economy
 - Less tire and brake wear



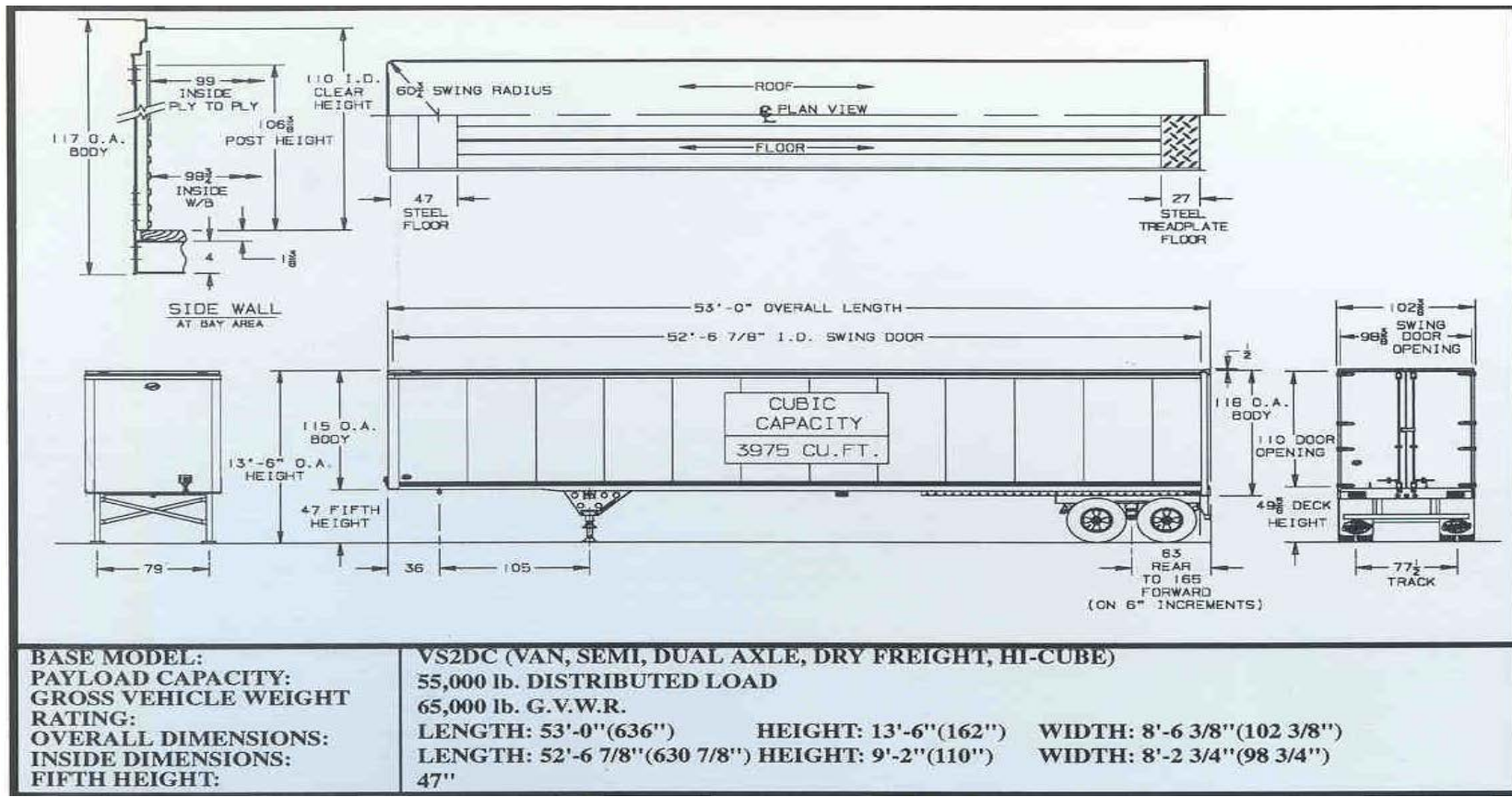
- Load Optimization

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



- Actual expectation of utilization of available trailer capacity

Trailer Weight and Cube



- 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—Nordstrom Domestic Transportation Manager

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.

NORDSTROM



Nordstrom

Boosting Freight Sustainability

June 14, 2017





NORDSTROM

122 Nordstrom Stores • 221 Rack Stores • Nordstrom.com • Nordstromrack.com • HauteLook • Trunk Club



NORDSTROM RACK

122 Nordstrom Stores • 221 Rack Stores • Nordstrom.com • Nordstromrack.com • HauteLook • Trunk Club

NordstromCares



TAKING CARE OF OUR COMMUNITIES

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

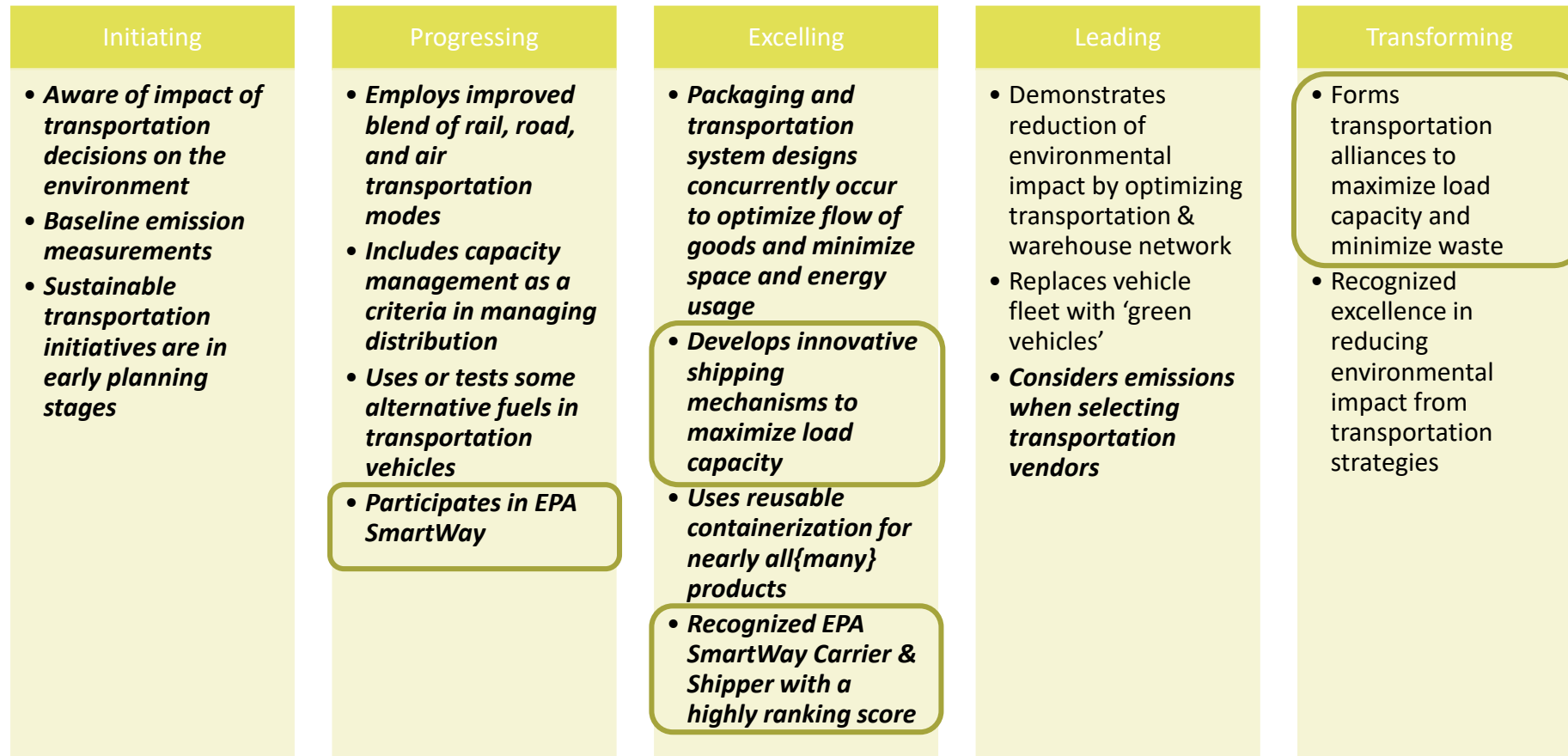


RESPECTING THE ENVIRONMENT

- CONSERVE RESOURCES
- OFFER SUSTAINABLE, HEALTHIER PRODUCTS
- REDUCE OUR CARBON FOOTPRINT

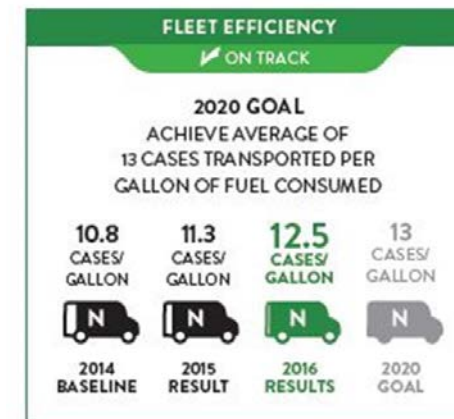
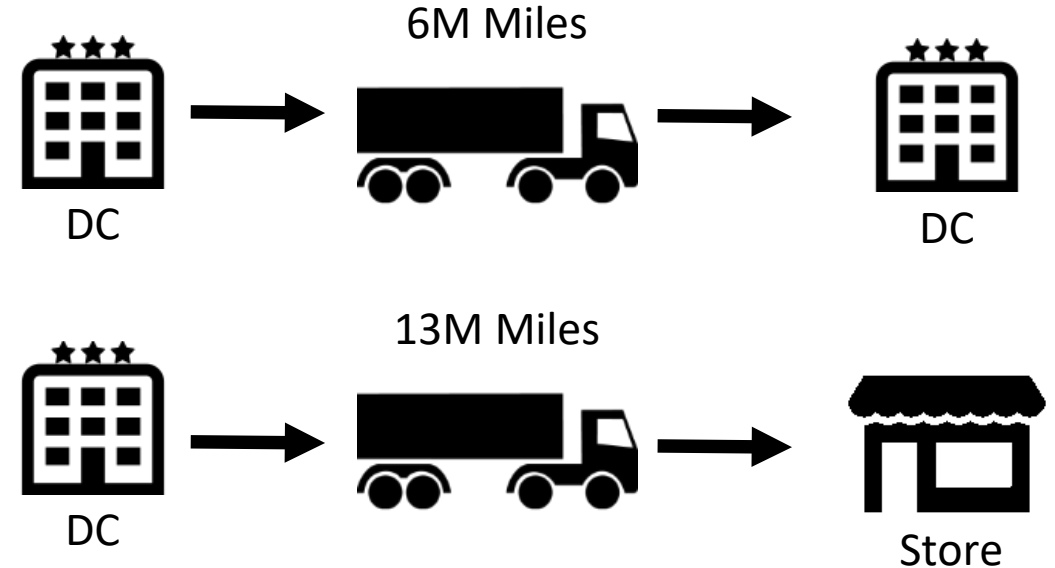
RILA Sustainability Model – Excelling But Not Leading Yet

Transportation and Logistics



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**



NORDSTROM

...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:

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