



## **CENTER *for* INTEGRATED AGRICULTURAL SYSTEMS**

University of Wisconsin-Madison  
Research Division, College of Agricultural and Life Sciences

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### **Freight Innovations to Optimize Regional Food Resiliency**

Chicago Metropolitan Agency for Planning, Willis Tower  
January 5, 2016, 9am – 4pm

**Structure for the day:** After the welcome we will have three mini sessions. Each will begin with 2-3 presentations from our diverse speakers. We will follow the presentations with 15 minutes for questions and comments from the whole group. Then each table will have 30 minutes to discuss what they heard and come up with one question and one insight to share with the larger group. There are handouts with data on each table to share, and each workgroup will need to choose someone to summarize their question and insight at the end of each session. Everyone brings expertise that we hope you will share during the table talk. Don't be shy!

#### **9:00 – Welcome**

Ernest Perry – CFIRE (facilitator)  
Steve Viscelli and Irv Cernasukas (Emcees)  
Mr. Gregory Grajewski - USDA-Agricultural Marketing Service  
Michelle Miller – UW Center for Integrated Agricultural Systems

#### **9:30 - Session one: Shipping food regionally**

Larry Alsum , Alsum Farms & Produce, Alsum Trucking , Friesland, WI

Rob Reich, Schneider Trucking, Green Bay, WI

Stephen Larsen, UW Grainger School of Supply Chain Management

Table talk: **What is your experience with regional food shipment – what are the challenges and opportunities?**

Summaries from each table: one question – one insight per table

**11:00 – Get your lunch!** Lunch catered by Arbor: <http://fooditor.com/the-most-important-restaurant-of-2015-that-youve-never-heard-of/>

**11:30 - Session two: Unleashing engineering efficiencies**

Michael Roeth, North American Council for Freight Efficiency

Sage Kokjohn, University of Wisconsin – Engine Research Center

Table talk: **What do private sector supply chain actors need to make this switch?**

Summaries: one question – one insight per table

**1:15 – Break**

**1:30 - Session three: Meeting the market demand for regional food**

Barbara Daly – Testa Produce, Chicago

Cynthia Haskins – IL Farm Bureau

Lee Strom – FARM Illinois

Table talk: **How can we better connect Chicago to our regional food economy?**

Summaries: one question – one comment – one insight per table

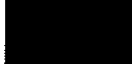
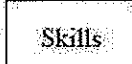
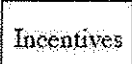
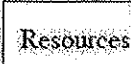
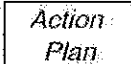
**3:15 - Synthesis: Irv Cernauskas and Steve Viscelli**

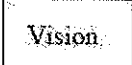
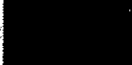
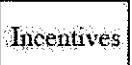
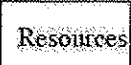

**3:45 - Concluding Remarks: Ernest Perry**

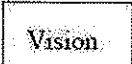
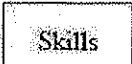

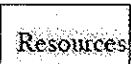

**4:00 - Adjourn**

# Managing Complex Change

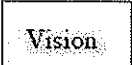
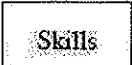

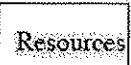

 +  +  +  +  = Change

 +  +  +  +  = Confusion

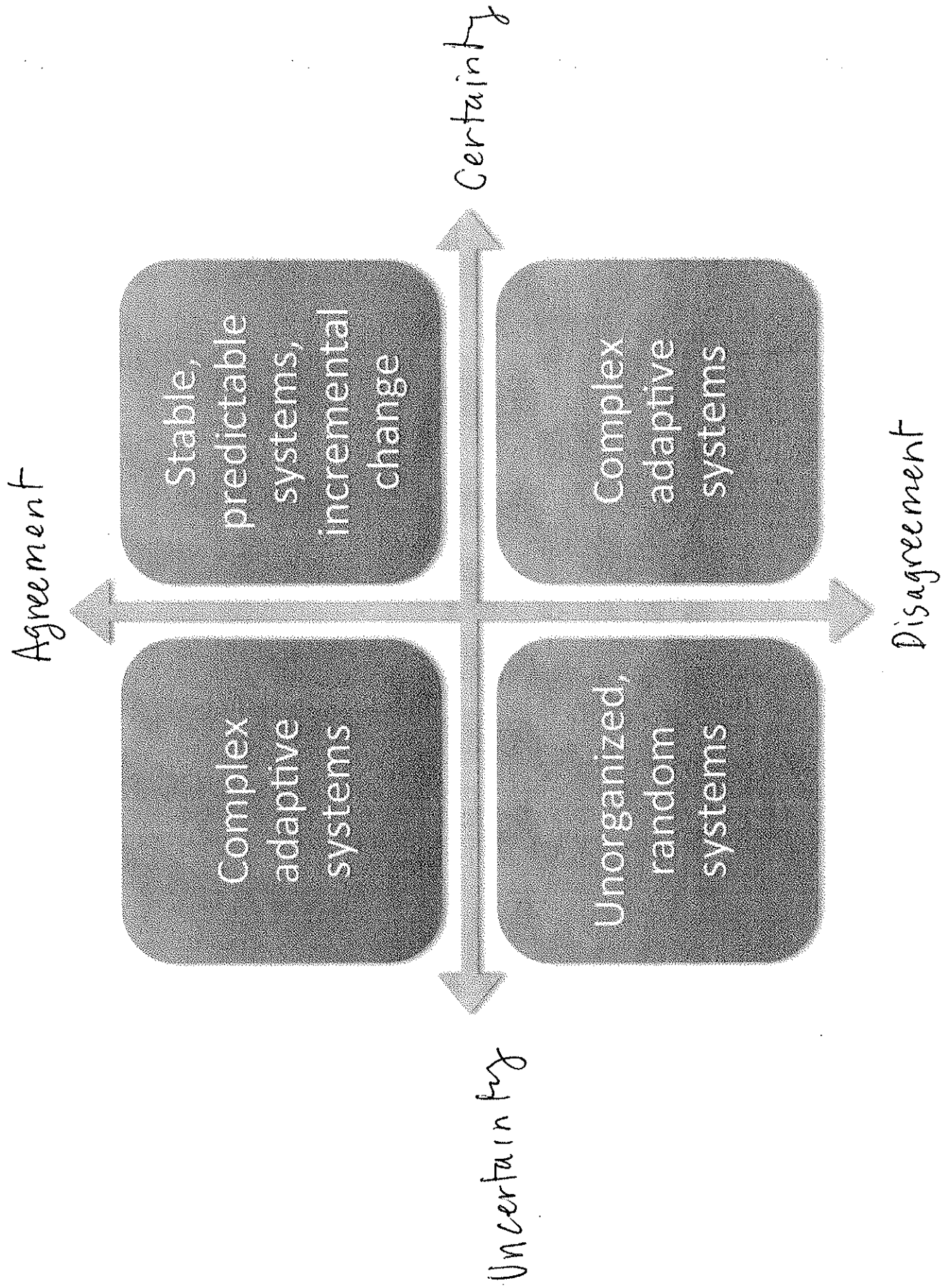
 +  +  +  +  = Anxiety

 +  +  +  +  = Resistance

 +  +  +  +  = Frustration

 +  +  +  +  = False Starts

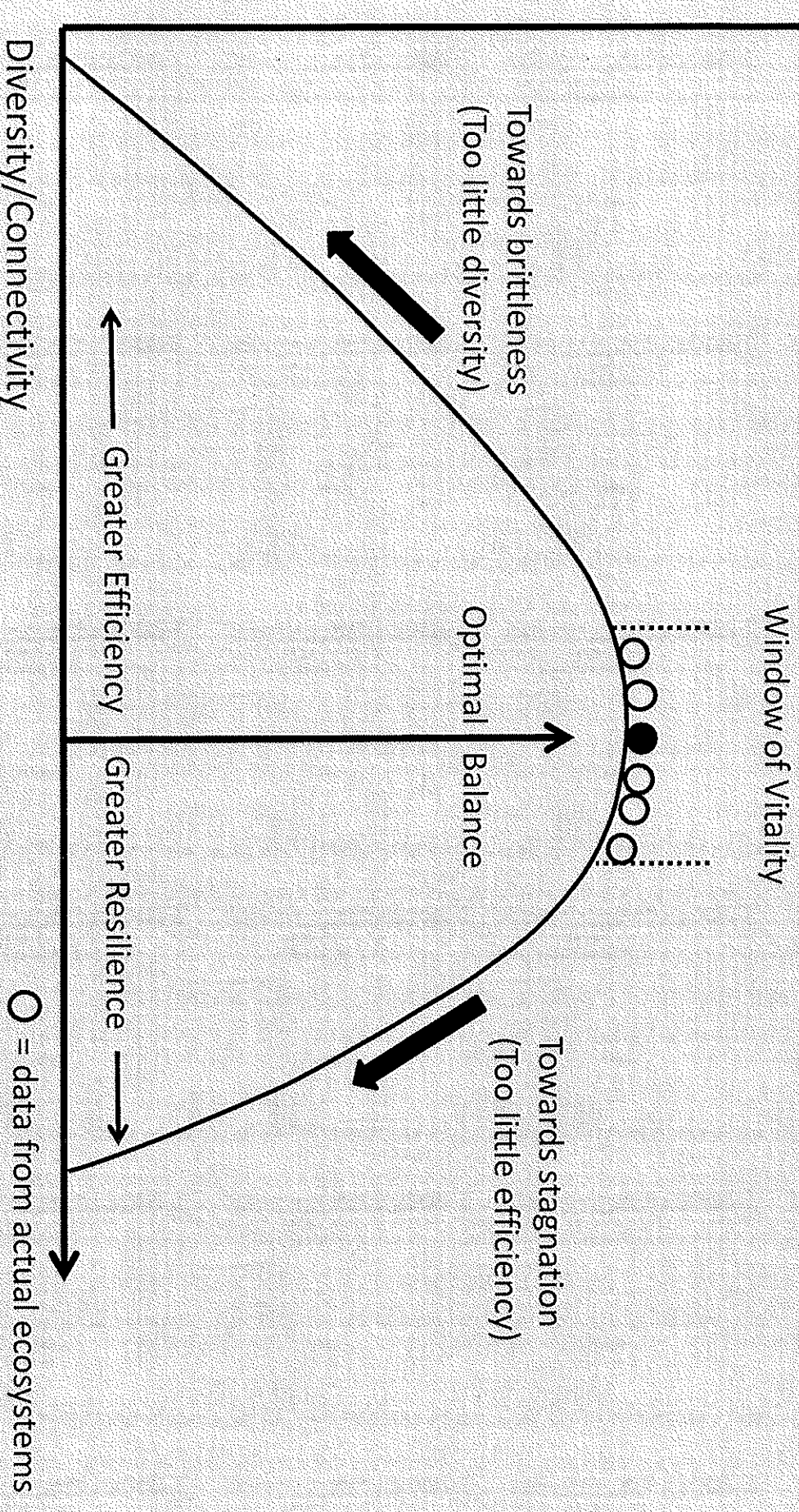
Adapted from Knoster, T., Villa R., & Thousand, J. (2000). A framework for thinking about systems change. In R. villa & J. Thousand (Eds.), *Restructuring for caring and effective education: Piecing the puzzle together* (pp. 93-128). Baltimore: Paul H. Brookes Publishing Co.





Sustainability

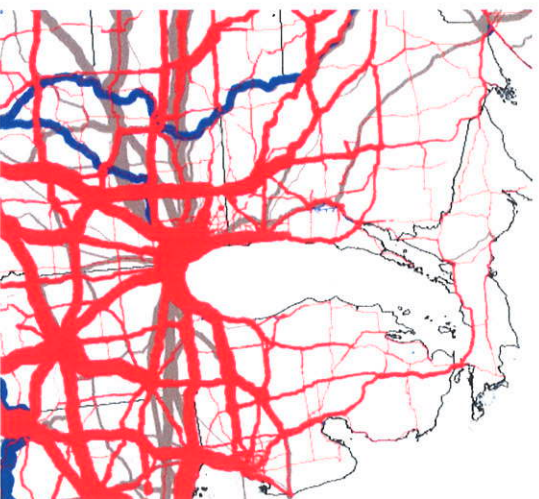
# Efficiency vs. Resilience?



Goerner, S. B. Lietaer, R. Ulanowicz. 2009. Quantifying economic sustainability: Implications for free-enterprise theory, policy and practice. *Ecological Economics* 69: 76-81.

# VOLUME MOVEMENT BY MODE 2007

- RAIL ●
- BARGE ●
- TRUCK ●

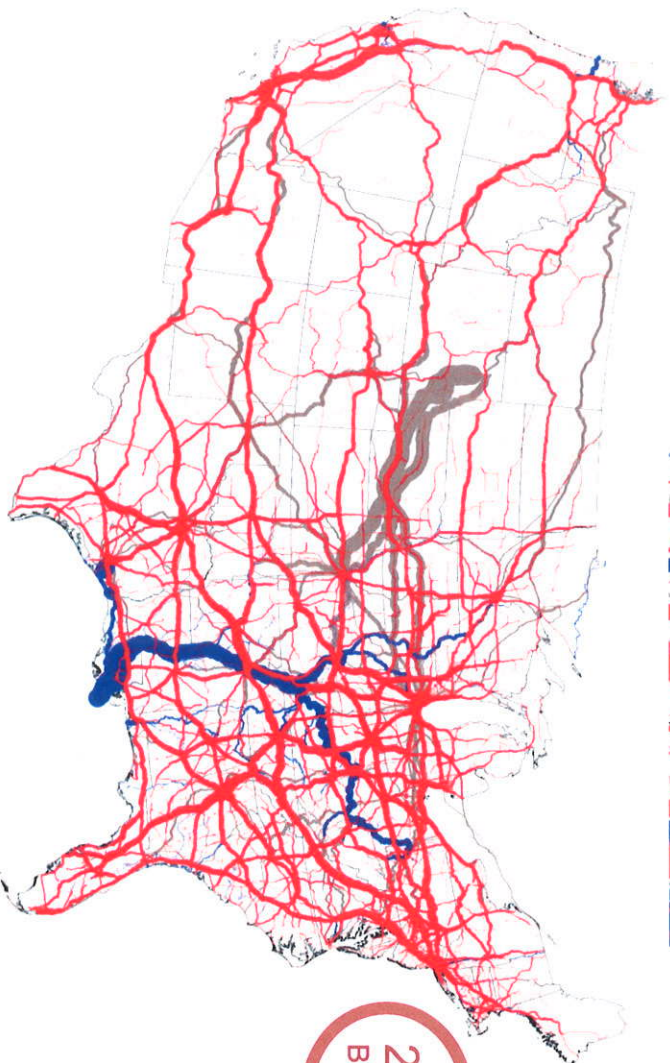


OVER  
1/4

OF ALL U.S. FREIGHT  
ORIGINATES, TERMINATES  
OR PASSES THROUGH THE  
CHICAGO REGION Source:  
CMAP

67%

OF FREIGHT IS MOVED BY  
TRUCK IN THE CHICAGO  
REGION Source: CMAP



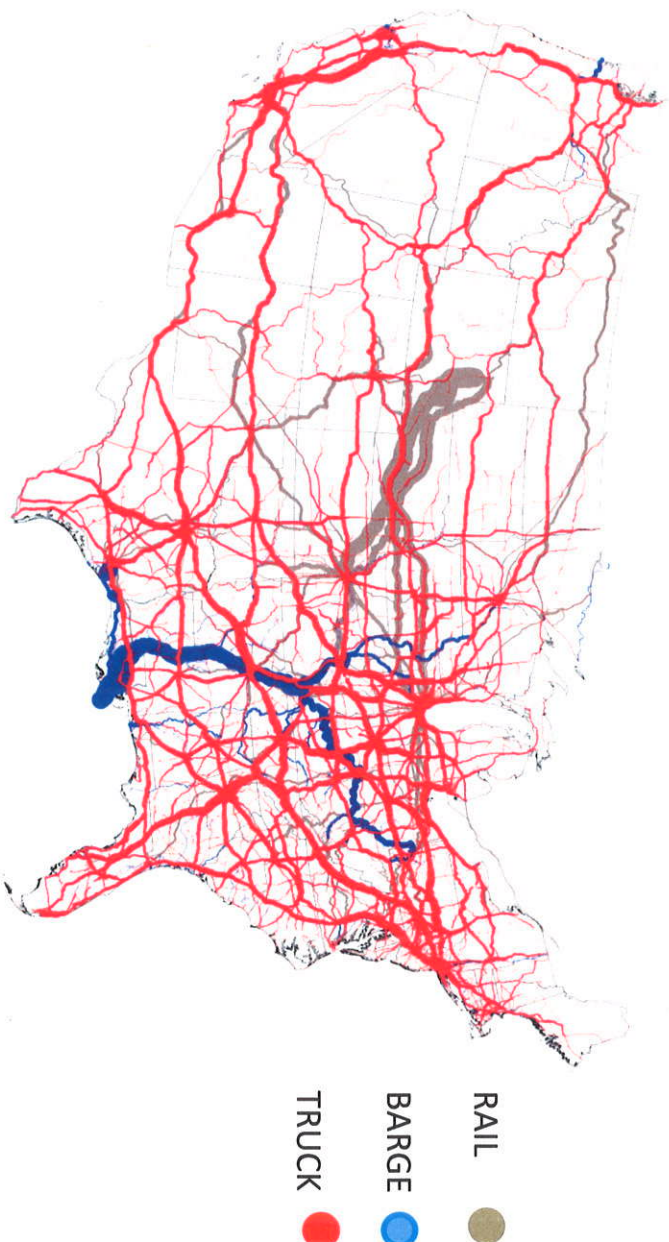
232  
BILLION

ANNUAL VALUE OF FOOD  
TRUCK FREIGHT THAT  
ORIGINATES, TERMINATES  
OR PASSES THROUGH THE  
CHICAGO REGION

Source: FAF, 2007



# Total annual tons by corridor, 2007



Over 80%

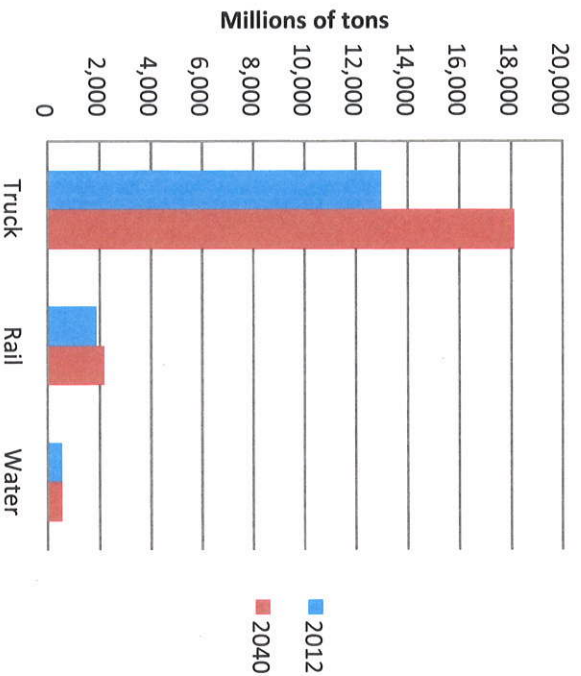
of communities are served  
exclusively by trucks

70%

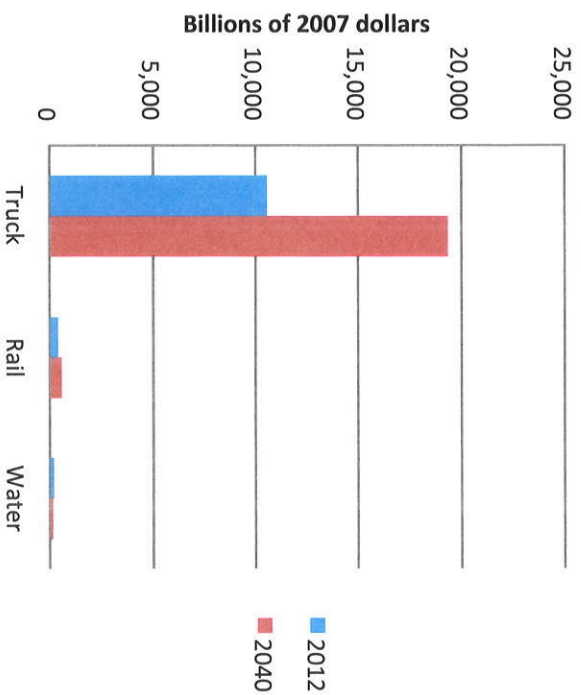
of agricultural & food products  
are carried by trucks

# Trucks carry more freight by weight and value than other modes

Total tons by mode, 2012 - 2040



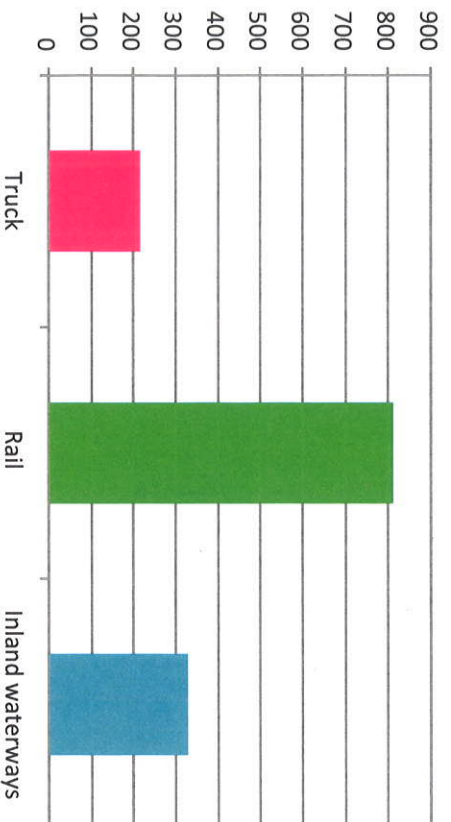
Total value by mode, 2012 - 2040



SOURCE: U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2014 as cited in USDOT, FHWA and Bureau of Transportation Statistics, 2013 Freight Facts and Figures, Table 2-1 and 2-2. Available at [http://ops.fhwa.dot.gov/freight/freight\\_analysis/nat\\_freight\\_stats/](http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/) as of August 2014.

# Shipping distance and costs

Average miles per shipment, 2012



SOURCE: U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2014

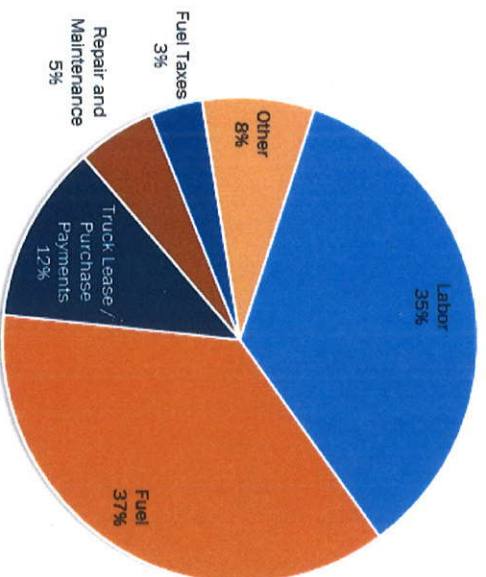
Average freight revenue per ton-mile, 2006



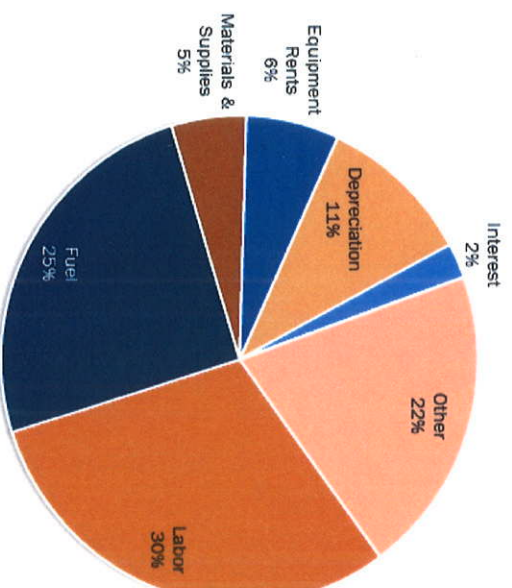
Source: Center for Climate and Energy Solutions Freight Transportation Factsheet.  
<http://www.c2es.org/technology/factsheet/FreightTransportation>

# Shipping cost components

Truck Costs (2008)



Rail Costs (2008)



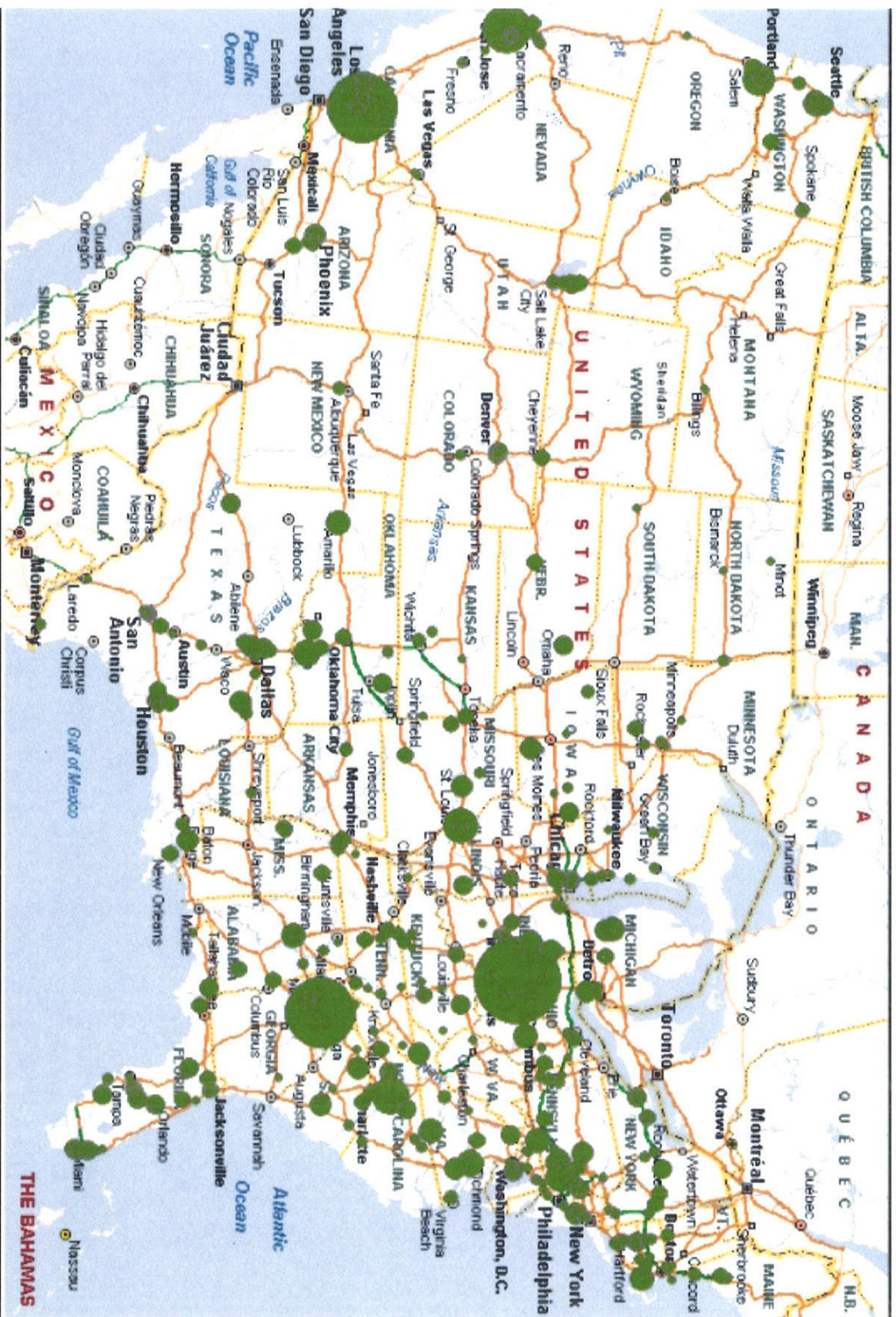


# Population Growth

## The Emerging Megaregions





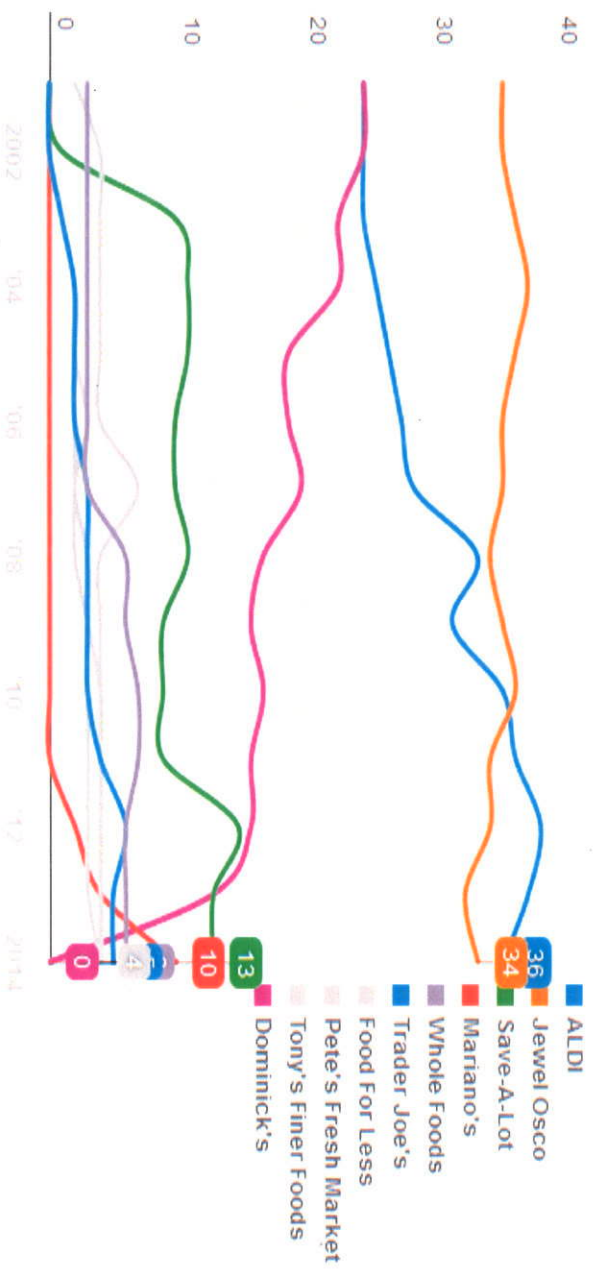


Total square feet of food warehouse space 2010

Source: [http://www.mwpvl.com/html/grocery\\_distribution\\_network.html](http://www.mwpvl.com/html/grocery_distribution_network.html)

# Concentration in the Chicago Grocery Industry

## Chicago Grocery Stores



### ➤ 2014: Dominick's closes 72 stores

- Mariano's buys 11 locations (32 total)
- Whole Foods buys 7 locations (25 total)
- Jewel-Osco buys 9 locations (180 total)
- 28 vacant Dominick's locations

### ➤ 2015: Kroger buys Roundy's (Mariano's parent company)

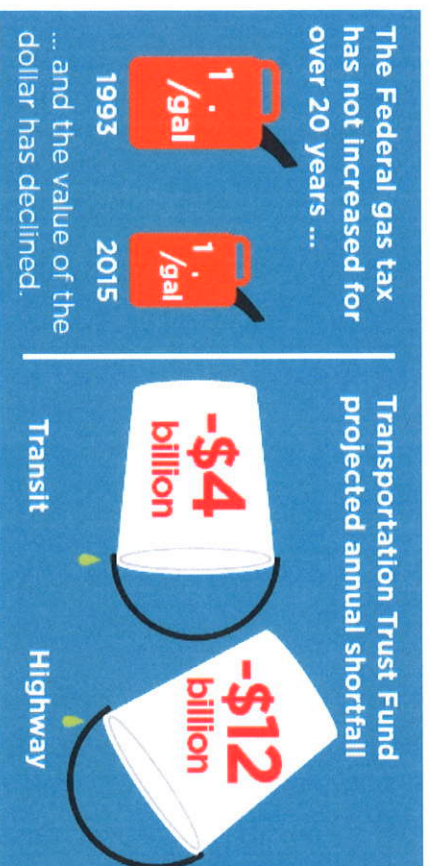




# Public Investment

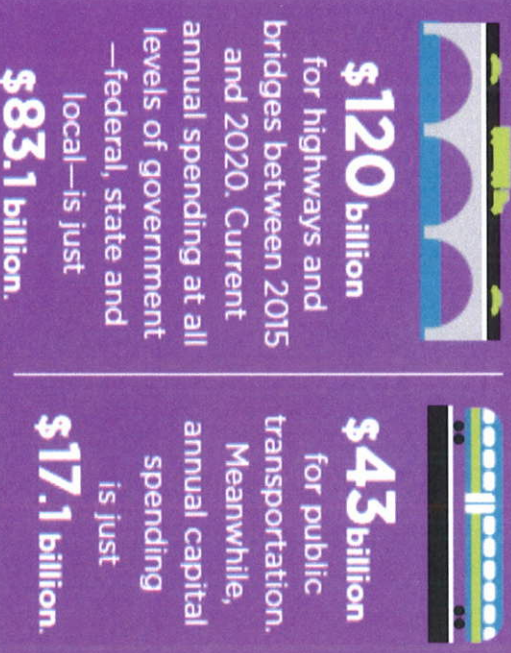
## Transportation Spending is in Decline

Our highway and mass transit accounts are trending toward the red. The Federal gas tax is no longer enough to address our transportation needs.



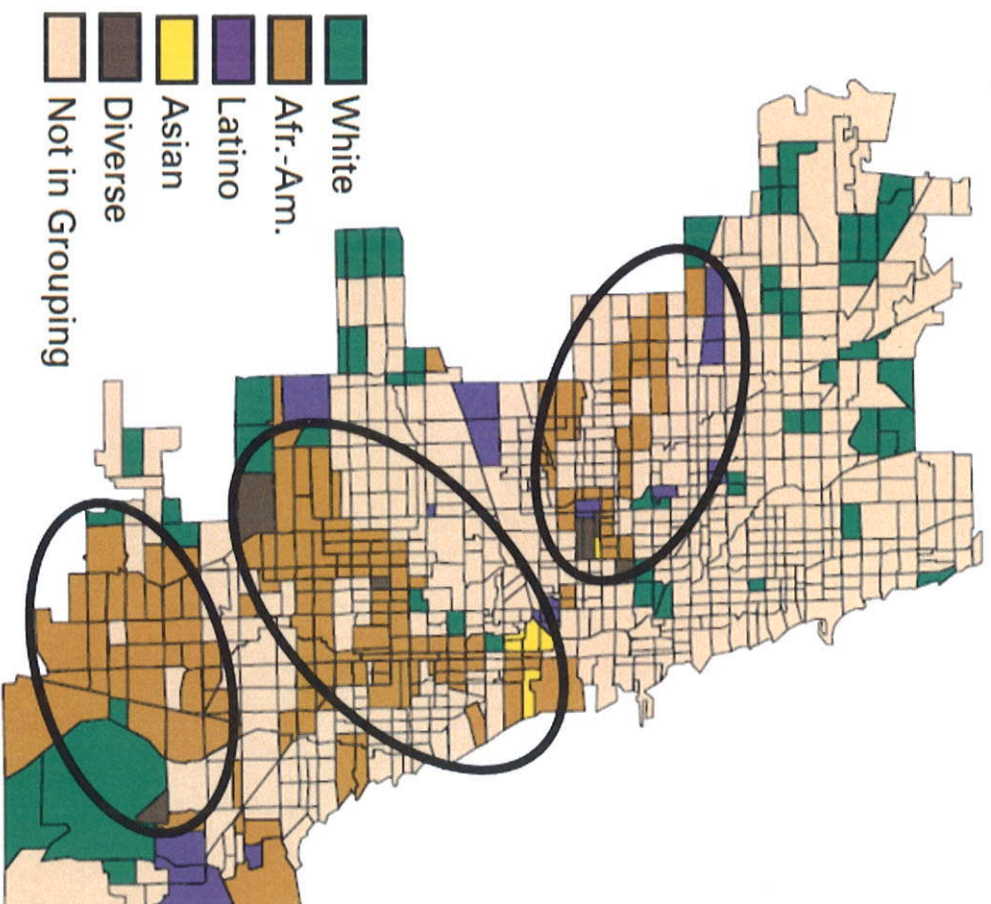
## Transportation Investment

Improving the condition and performance of the transportation system will cost

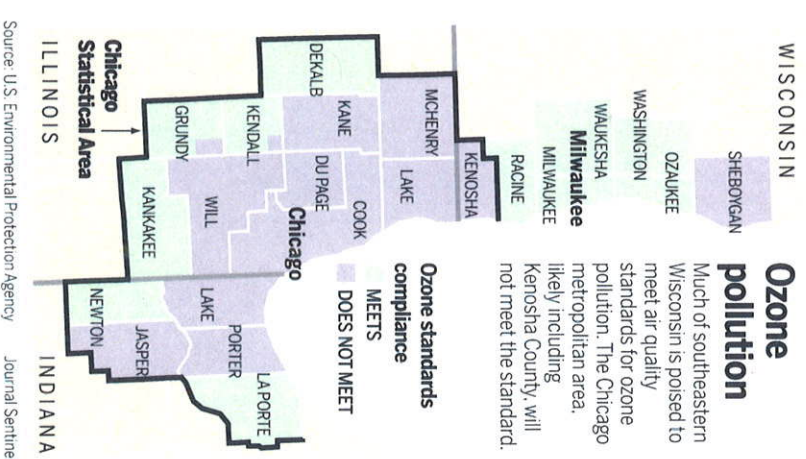


Source: USDOT

## Food deserts in Chicago by racial composition



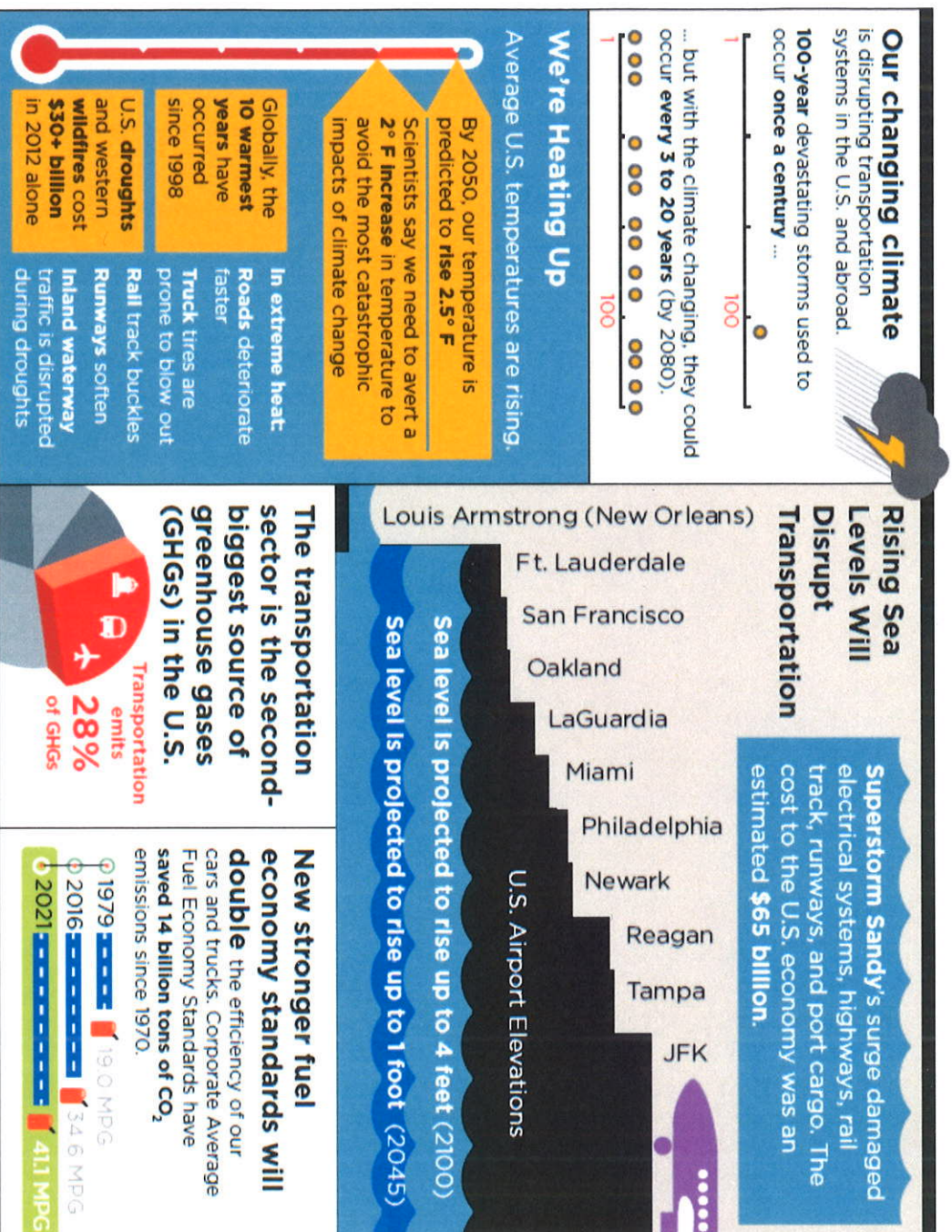
## Public Health



<http://foodsecurity.uchicago.edu/research/the-search-for-an-oasis-2/attachment/chicago-figure-4-2/>



# Extreme weather





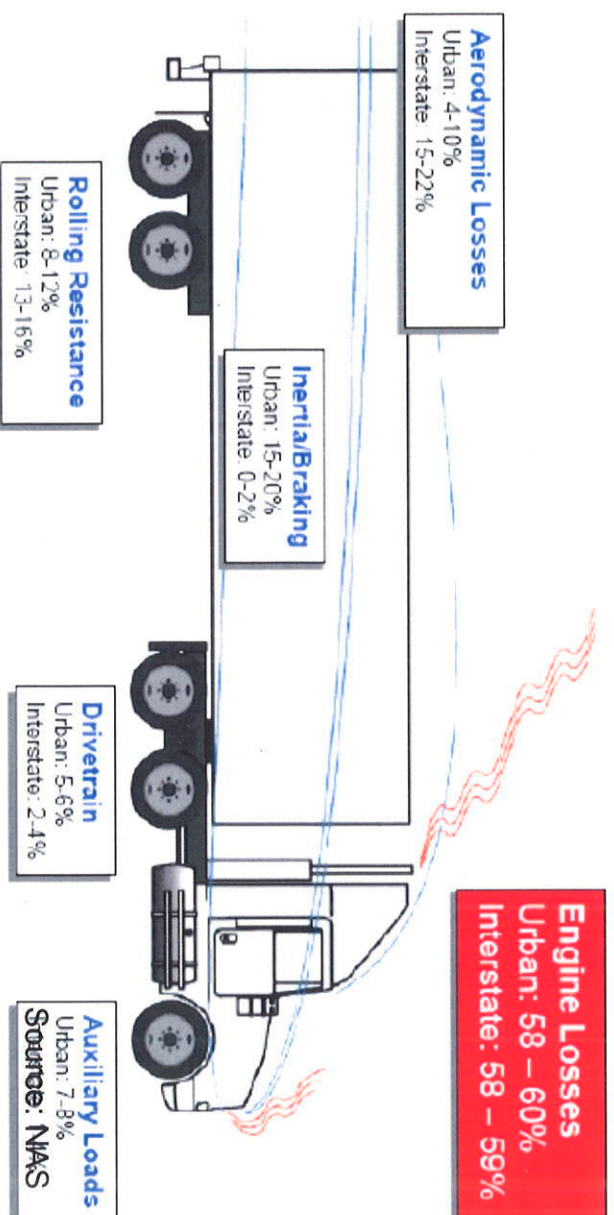


FIGURE 2-7 Energy “loss” range of vehicle attributes as impacted by duty cycle, on a level road.

“Jack of All Trades” truck inefficiencies

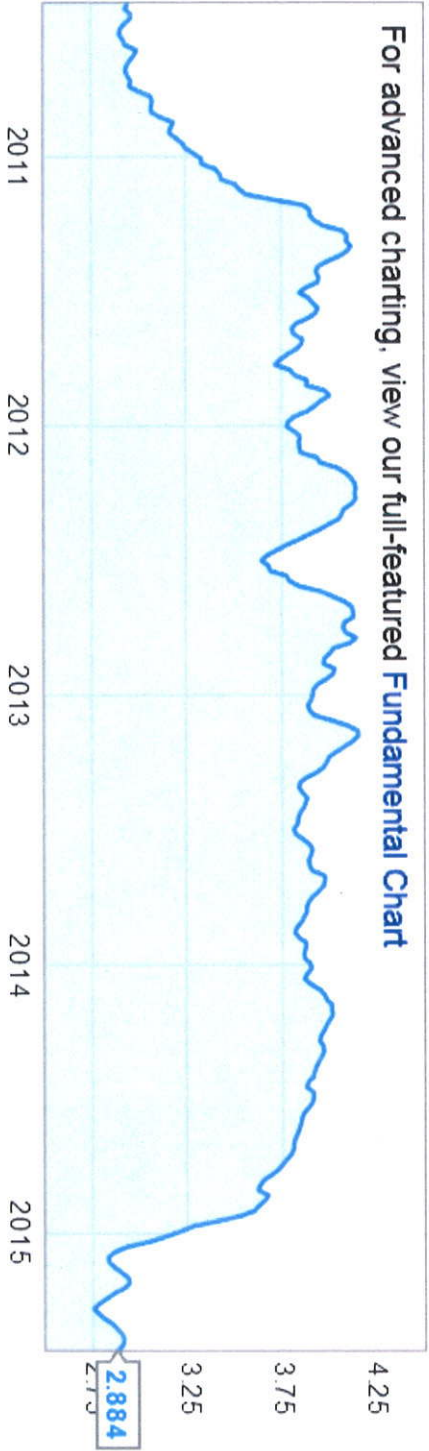
# Diesel Price History

## US Retail Diesel Price Chart

[View Full Chart](#)

5d	1m	3m	6m	YTD	1y	5y	10y	Max
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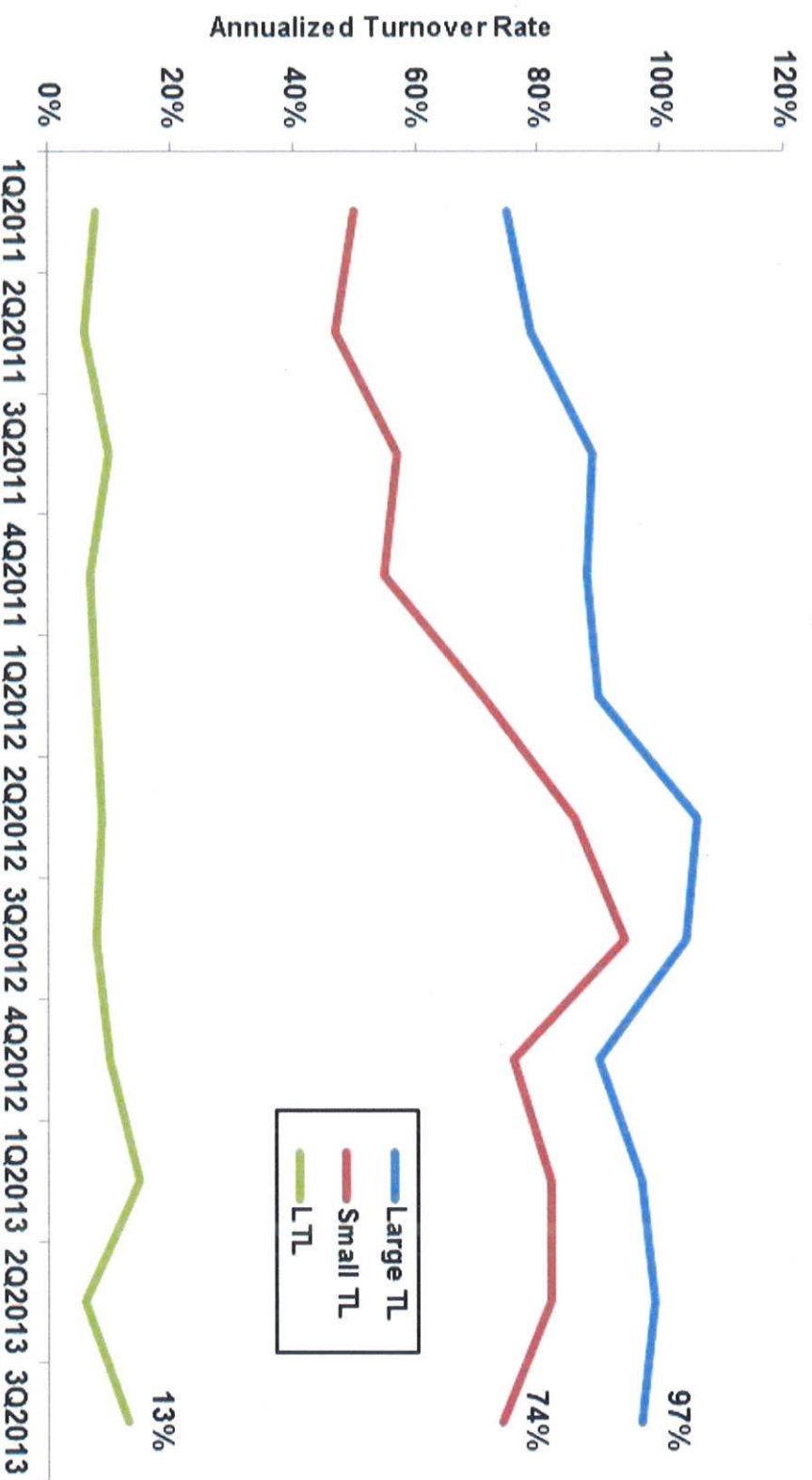
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[https://ycharts.com/indicators/us\\_diesel\\_price](https://ycharts.com/indicators/us_diesel_price)

# Labor Market

## Quarterly Truck Driver Turnover



Source: The American Trucking Associations

[http://www.joc.com/trucking-logistics/abor/ata-reports-97-percent-truck-driver-turnover-rate\\_20131212.html](http://www.joc.com/trucking-logistics/abor/ata-reports-97-percent-truck-driver-turnover-rate_20131212.html)

# Challenges ahead

Growing population

2015: **320 million people**  
2045: **390 million people**

Increasing freight volumes

Weight: **45% increase by 2040**  
Value: **125% increase by 2040**

Increasing congestion

More frequent and severe delays  
on highway and rail systems

Rising shipping costs

Insurance costs, fuel prices,  
congestion, environmental and  
safety regulations, driver shortages,  
etc.

Other issues

Unstable waterway levels,  
infrastructure deterioration, etc.

## INNOVATION IN MOVING FOOD FREIGHT

FIRST .....> OTR .....> **METRO** .....> LAST .....





# CRE: Colton Drop Yard for LA region

## Keys to Success

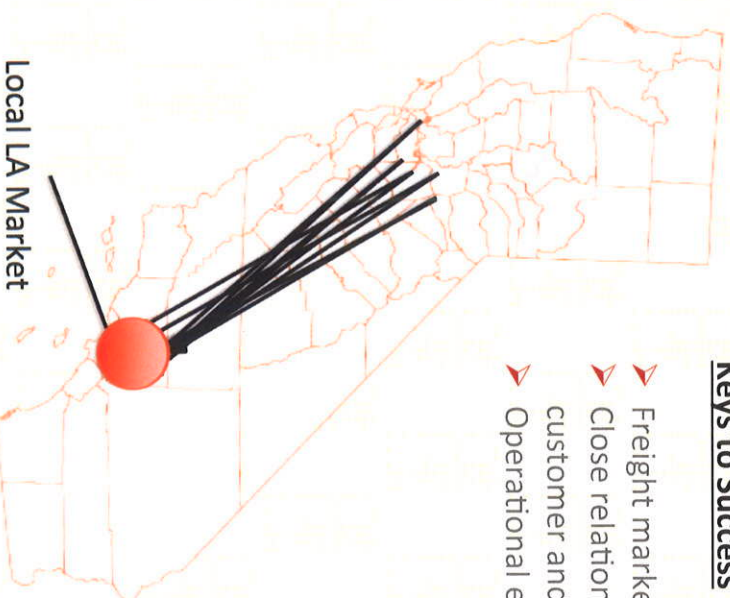
- Freight market dynamics
- Close relationship between customer and carrier
- Operational efficiency

## Initial Operational Structure

- Decoupled short-haul (within LA congestion zone) and long-haul (>100 miles) fleet
- Initially little coordination between fleets
- Struggling utilization on line-haul fleet

## New Operational Structure

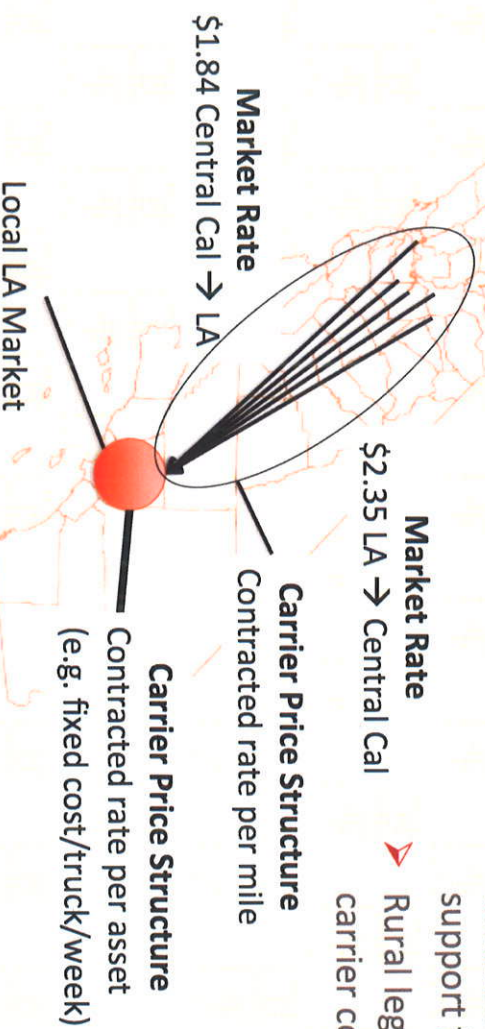
- Regional drop yard 55mi outside LA
- Line fleet continuously moving, local fleet could wait at the docks





# Freight Market Dynamics

- Contracted rate structure allowed for efficiencies gained in using drop yard
- Communication between short-haul and long-haul fleets made it possible to know when to deliver loads and how to plan capacity
- Ability to match demand for loads with capacity available in the market was possible with support from other business units
- Rural leg savings greater than urban costs so carrier could pass the difference to shipper



# Regional Drop Yard: Chicago



Solves fragmented deliveries and congestion issues shippers and carriers face moving products into the Chicago marketplace; Issues which affect implementation include multiple carriers and scale issues that may increase cost barriers

## Assumptions:

- \$600 base revenue/day
  - \$2k Fixed cost per truck
  - 10 trucks/wk, 260 pallets
  - No back haul – spot market rate
  - No amenities at drop yard
  - Different companies running urban & rural legs
  - No incentives to offset fixed asset costs
  - Fuel costs at current rates
- Total Cost/Pallet with Regional Drop Yard: \$60
- Total Cost/Pallet without Regional Drop Yard: \$45.50

Regional Wheeling Drop Yard  
Final Delivery Point



## Tractor Strategies      Trailer Strategies

~11% Reduction or greater

~6.5% Reduction or greater

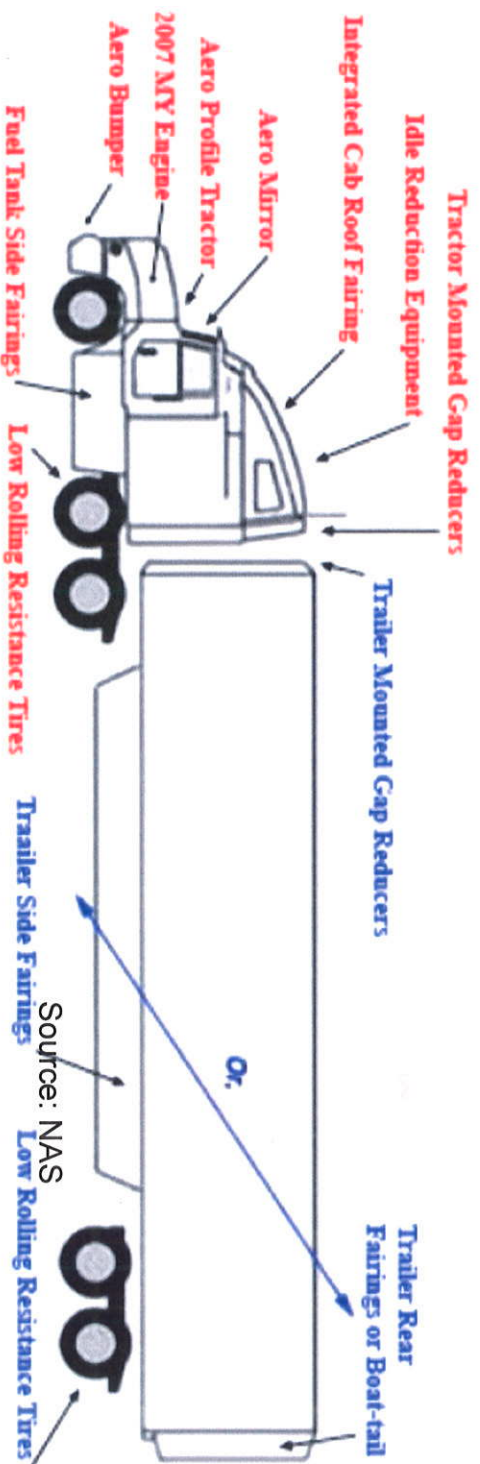
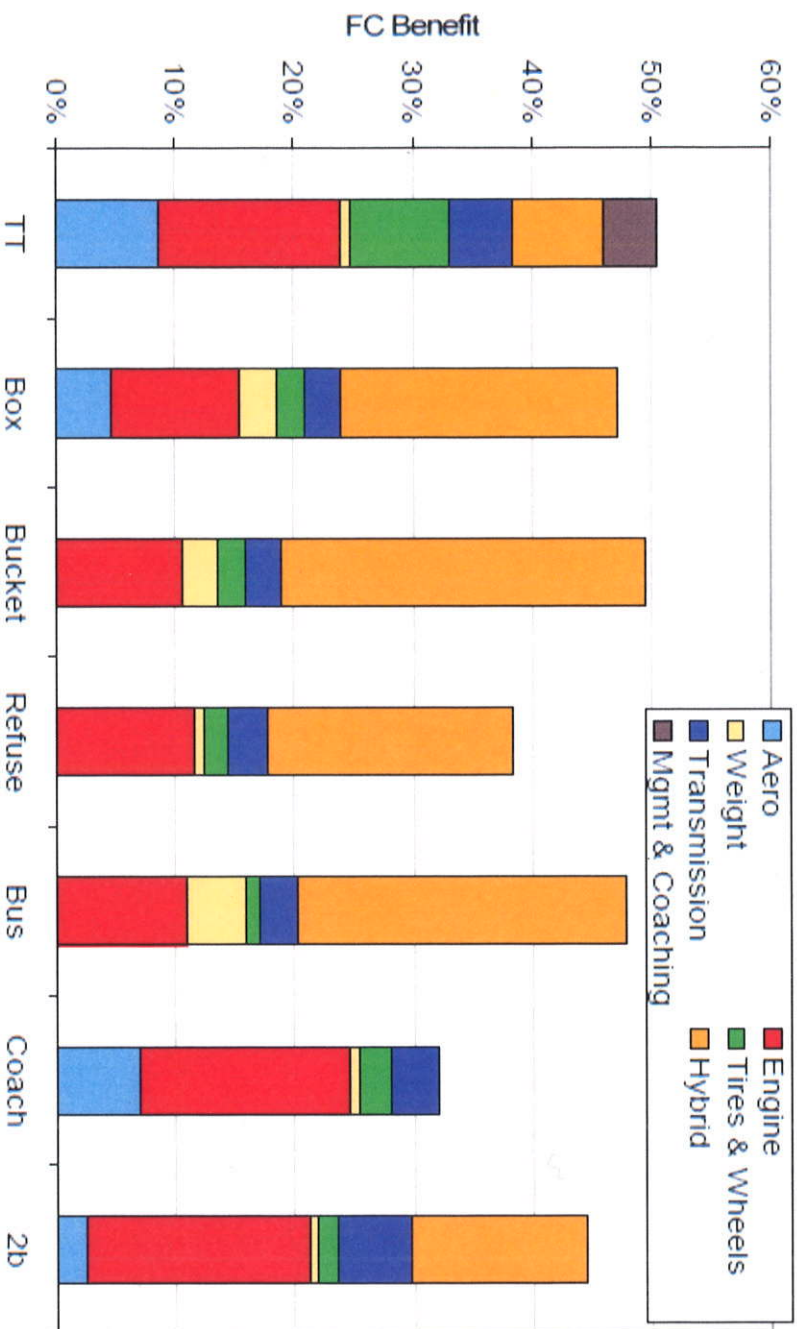


FIGURE 3-7 Some of the aerodynamic technologies included in the SmartWay certification program. SOURCE: Mitch Greenberg, EPA, "SmartWay Voluntary Certification Program," presentation to the committee.

Available truck efficiencies  
OTR / Metro modal





## 2015 – 2020 New Vehicle Potential Fuel Savings Technologies

Source: NAS 2010

# LNG & CNG: Current State

## Cost Model for Class 8 Alternative Fuel Source Vehicles

1	Average Truck Life	5	10	Diesel Price (per gallon):	\$2.68
2	Type of Conversion:	LNG	11	MPG:	6.0
3	Conversion Cost:	\$50,000.00	12	LNG Price (per DGE):	\$2.54
4	Grant Available?	No	13	CNG Price (per DGE):	\$2.39
5	Grant Amount:		14	Yearly Incremental Savings	\$1,680.00
6	Tank Size (LNG)(DGE):	75	15	Total Savings over Truck Life:	\$8,400.00
7	Tank Size (CNG)(DGE):	62	16	Payoff Period:	29.76
8	Days in Use:	5	*	Miles per Day Feasible?	YES
9	Miles per Day:	400	**	Cost Benefit to Conversion?	NO

DOES ALTERNATIVE FUEL SAVE CARRIERS MONEY? NO

### Instructions

Fill data from drop down menu in sections 1 - 13 (denoted by peach colored cells).

Data in cells 14 - 16 will be automatically calculated based off inputs provided in step 1.

The cell denoted by \* verifies that a converted truck has the ability to travel the number of miles per day based off estimates on fuel economy and tank size provided by alternative fuel type.

The cell denoted by \*\* verifies that there is a cost savings by converting a vehicle to alternative fuel sources based off data provided.

Base assumptions for the cost model are located below, these cells set the base which to experiment off of.

# LNG & CNG: Future State

## Cost Model for Class 8 Alternative Fuel Source Vehicles

1	Average Truck Life	5	10	Diesel Price (per gallon):	\$3.75 *
2	Type of Conversion:	LNG	11	MPG:	6.0
3	Conversion Cost:	\$50,000.00	12	LNG Price (per DGE):	\$2.54
4	Grant Available?	No	13	CNG Price (per DGE):	\$2.39
5	Grant Amount:		14	Yearly Incremental Savings	\$14,520.00
6	Tank Size (LNG)(DGE):	75	15	Total Savings over Truck Life:	\$72,600.00
7	Tank Size (CNG)(DGE):	62	16	Payoff Period:	3.44
8	Days in Use:	5	*	Miles per Day Feasible?	YES
9	Miles per Day:	400	**	Cost Benefit to Conversion?	YES

DOES ALTERNATIVE FUEL SAVE CARRIERS MONEY?

YES

### Instructions

Fill data from drop down menu in sections 1 - 13 (denoted by peach colored cells).

Data in cells 14 - 16 will be automatically calculated based off inputs provided in step 1.

The cell denoted by \* verifies that a converted truck has the ability to travel the number of miles per day based off estimates on fuel economy and tank size provided by alternative fuel type.

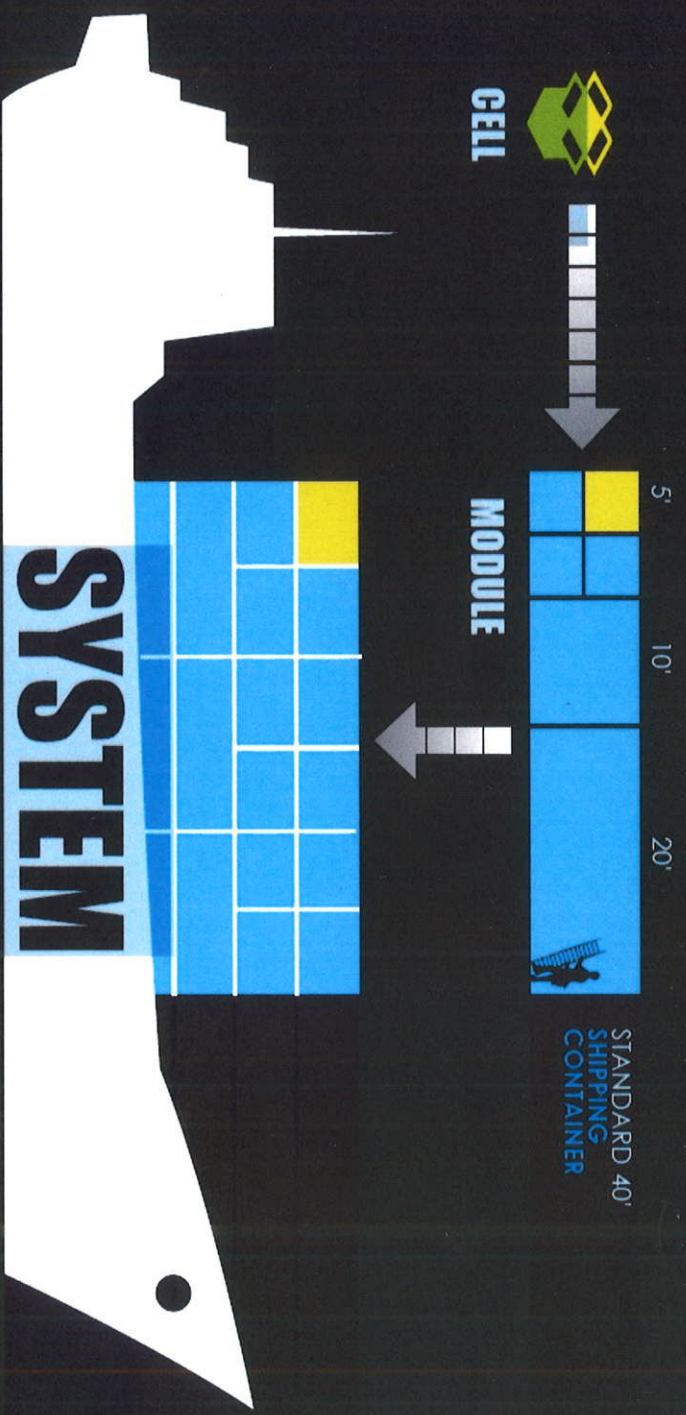
The cell denoted by \*\* verifies that there is a cost savings by converting a vehicle to alternative fuel sources based off data provided.

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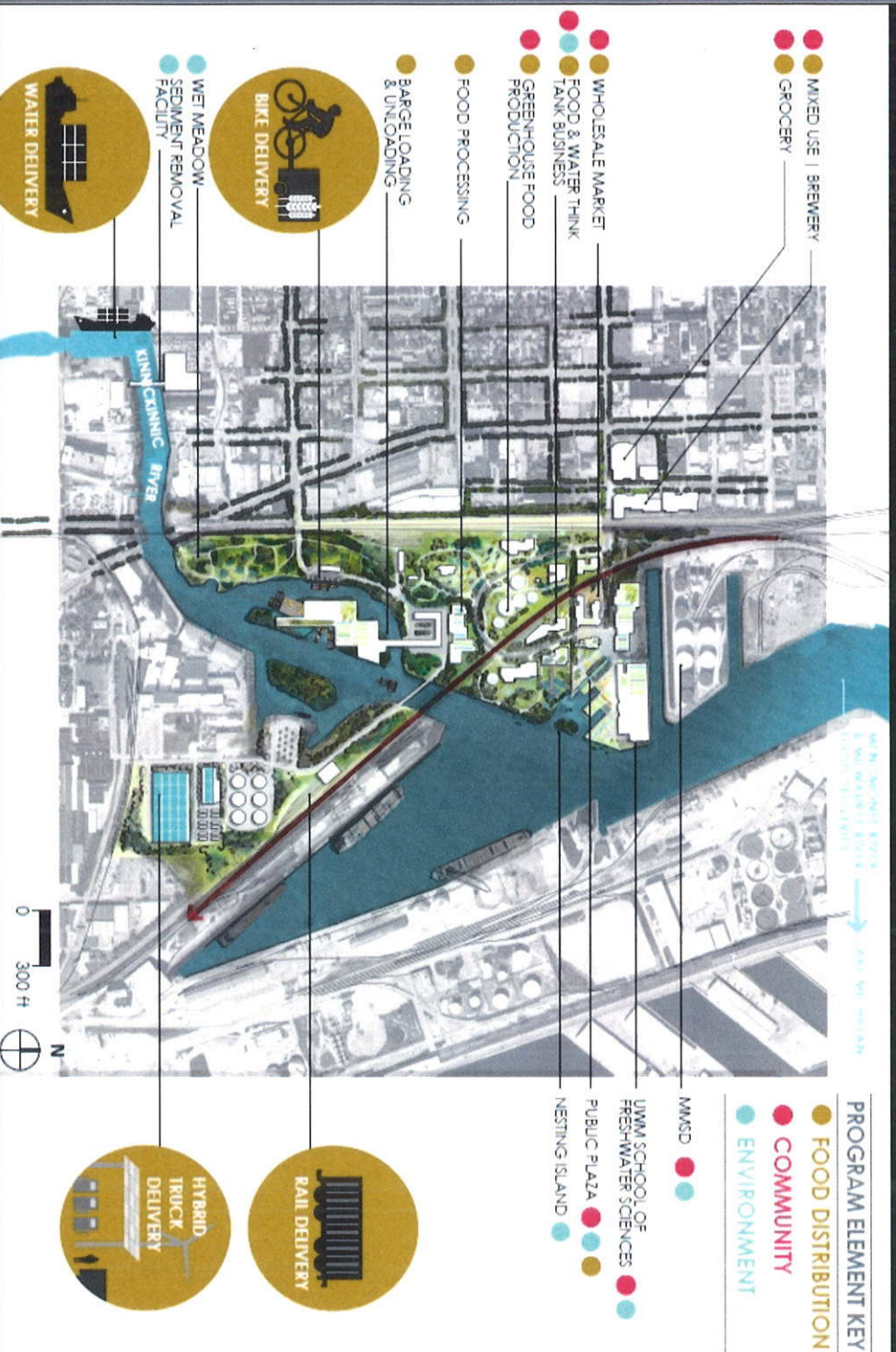


# design strategies

determining scale



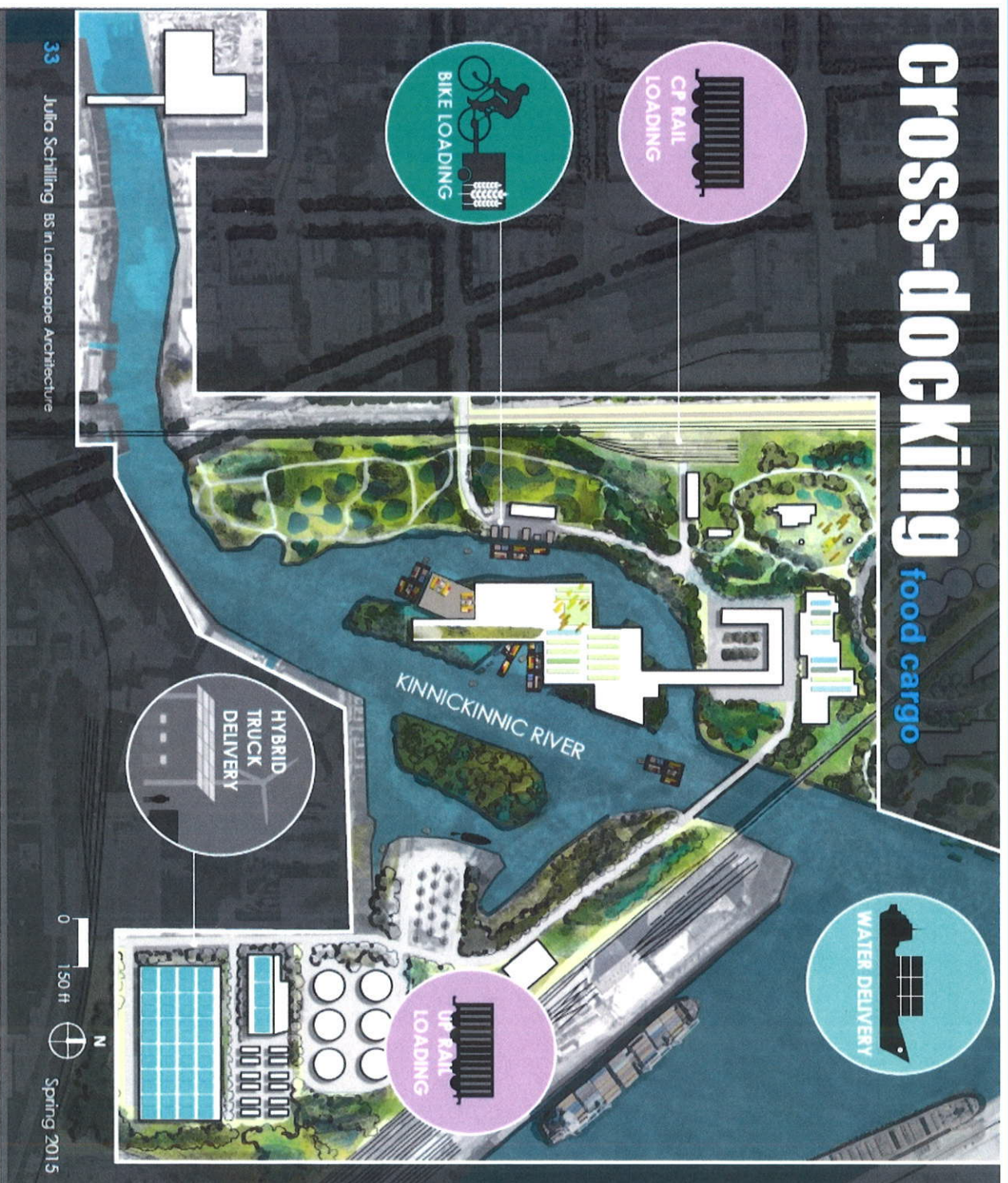
# master plan: envisioning a barge delivery food hub





# Cross-docking

food cargo





## Truck Hubs for Food Freight Advisory Committee Biographies (alphabetical)

A project of the University of Wisconsin – Madison, Center for Integrated Agricultural Systems



**Irv Cernauskas** founded Irv & Shelly's Fresh Picks in 2006 with his wife Shelly Herman, to provide new market opportunities for farmers and to help stimulate the re-growth of Chicago's local food system. Fresh Picks' home delivery service brings great food to thousands of area households, has developed farm based food aggregation hubs to drive down shipping costs, and adds several hundred thousand dollars to the incomes of local farmers each year. Irv earned an MA in Economics, an MBA from MIT, and worked for 20 years as a corporate executive and running his own IT consulting practice. Several years of service on the boards of Seven Generations Ahead and The Land Connection helped forge friendships with local farmers. This convinced Irv of the importance of local agriculture to health, the environment and rural communities, and was the inspiration for starting Fresh Picks.



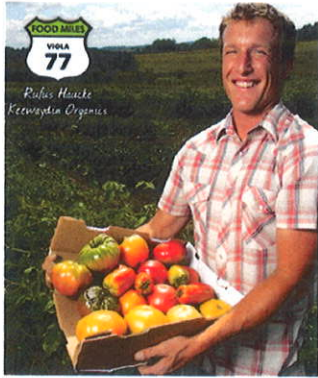
**Kathleen Dickhut**, Deputy Commissioner of the Sustainability and Open Space Division of the City of Chicago Department of Planning and Economic Development. The division implements the CitySpace and Chicago River plans, and led the development and assists with the implementation of: the Calumet plans; *Logan Square Open Space Plan*; *Chicago Eat Local Live Healthy*; *A Recipe for Healthy Places*; *Adding Green to Urban Design*; *Chicago Sustainable Industries* and the *Green Healthy Neighborhood* land use strategy for five City neighborhoods which have undergone large population loss. Kathleen Dickhut has a Master's of Science in Landscape Architecture from the University of Wisconsin, Madison and a Bachelor's degree in psychology and anthropology.



**Andy Dierks**, Coloma Farms. Andy is a fourth generation potato grower in Coloma, located 60 miles north of Madison. With his father, Steve they operate Coloma Farms, Inc., growing about 850 acres of potatoes, and 400-700 acres each of corn and soybeans. They recently upgraded to a new packing facility where they started packaging new potatoes each season around the 1st of August. Both are very active within the Wisconsin Potato and Vegetable Growers Association (WPVGA) and serve on several committees related to marketing, research, and government relations. Coloma Farms and the WPVGA work pro-actively with researchers and leadership within the UW system to address issues in the vegetable industry. Andy received a BS from UW-Madison in Agricultural Engineering and currently serves on the DATCP board, the WPVGA Promotions Committee, the WPVGA Water Task Force, the Discovery Farms Advisory Council, and is also Chairman of the USPB Chip Committee.



**Rufus Haucke**, Keewaydin Farms and Just Local Foods. After 10 years of farming dirtying up his



overalls, Rufus Haucke has transformed the family farm, purchased by his parents for use as a dairy farm back in 1976, into a thriving provider of organic goodness. Located at the end of Haucke Lane in the Driftless Region of Southwestern Wisconsin, Keewaydin Farms raises 20 acres of garden produce for local CSAs and wholesale markets. Rufus has embarked on an even larger project - launching Just Local Foods, an organic produce distribution warehouse based in Viroqua, WI. [Just Local Foods](#) works with many organic farms in the Viroqua Region to provide a wide offering of organic, seasonal, wholesale produce. Through these efforts, they've been able to

expand the market available to organic farmers - now delivering twice a week to Madison, Milwaukee, and the Twin Cities.



**Pete Huff**, Director of Food Systems at Institute for Agriculture and Trade Policy (IATP) has been involved with food systems for the past ten years, working on a variety of levels spanning from organic production to policy development. His work has primarily been in the nonprofit and local government sectors of the United States and Australia. While in the United States, his work focused on organic market gardening and agroecology apprenticeship program development in California. In Australia, he focused on school garden

programs, food waste reduction programs and urban agriculture policy on the local and state level. He has a B.S. in environmental management and a B.A. in history from Indiana University-Bloomington. He is an avid gardener, bee keeper and cook.



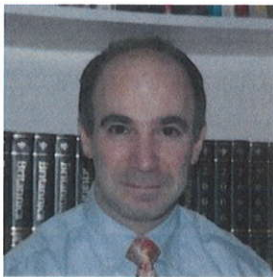
**Karen Lehman** directs Fresh Taste, a funder initiative dedicated to relocating the food system in the Chicago foodshed and improving equity of access to good food. Karen's food system work spans three decades, beginning with an award-winning PBS documentary on women's leadership in farm movements. Karen directed the local food and regional economy programs at The Minnesota Project; co-founded Youth Farm, located in Minneapolis and St. Paul; and

directed the Institute for Agriculture and Trade Policy's Food and Agriculture Program. Karen also held an endowed chair in Agricultural Systems at the University of Minnesota, consulted with the Ford Foundation on rural development in Mexico, and received a Master's of Public Administration from Harvard University's John F. Kennedy School of Government as a Bush Foundation Leadership Fellow. Prior to her work with Fresh Taste, Karen was a Senior Associate with Cambridge Leadership Associates.





**Sarah Lloyd** is the Special Projects and Regional Membership Coordinator for the Wisconsin Farmers Union. In this position she organizes the biennial Midwest CSA Conference and has assisted the launch of the farmer-led Wisconsin Food Hub Cooperative. She also facilitates farm succession planning workshops for Farmers Union members. Sarah assists her husband Nels Nelson on the Nelson family dairy farm. Sarah represents the dairy farmers of her area on the Wisconsin Milk Marketing Board, the state dairy check-off organization. Sarah has a PhD in Rural Sociology from the UW-Madison, a Masters in Rural Development from the Swedish University of Agricultural Sciences, and a B.A. in Environmental Studies from Brown University.



**Tom Murtha** is a Senior Planner for the Chicago Metropolitan Agency for Planning, responsible for CMAP's transportation system performance measurement project. Previously, Tom was responsible for the agency's freight system planning and congestion management processes. At the Chicago Area Transportation Study, CMAP's predecessor, Tom was the Chief Transportation Planner, and assisted in developing the 2030 Regional Transportation Plan for Northeastern Illinois. Prior to joining CATS in 1993, Tom held various transportation- and planning-related positions in Wausau and Madison, Wisconsin. He received his B.A. in Economics and his M.S. in Urban and Regional Planning, both from the University of Wisconsin at Madison.



**Mike Roeth**, North American Council for Freight Efficiency. Mike has worked in the commercial vehicle industry for nearly 30 years, most recently as the Executive Director of the North American Council for Freight Efficiency. Mike is also leading the Trucking Efficiency Operations for the Carbon War Room. Mike's specialty is brokering green truck collaborative technologies into the real world at scale. He has a BS in Engineering from the Ohio State University and a Masters in Organizational Leadership from the Indiana Institute of Technology. Mike served as Chairman of the Board for the Truck Manufacturers Association, Board member of the Automotive Industry Action Group and currently serves on the second National Academy of Sciences Committee on Technologies and Approaches for Reducing the Fuel Consumption of Medium- and Heavy-Duty Vehicles and has held various positions in engineering, quality, sales and plant management with [Navistar](#) and Behr/Cummins.



**Steve Viscelli**, concept originator. (PhD, Indiana University; MA, Syracuse University; BA, Colgate University) is an economic sociologist who studies the trucking industry. In 2010 he began working with COWS as a National Science Foundation fellow. His work focused on developing alternative ways to move freight by truck that reduce fuel consumption and shipping costs, improve working conditions for truckers, and relieve traffic congestion. He engaged industry and government stakeholders to



evaluate the benefits and feasibility of what he calls “urban truck ports” that allow truckers to coordinate the use of super-efficient trucks designed for urban or rural hauling. Since 2013, Steve has been a Visiting Assistant Professor at Swarthmore College. He is currently completing a book about how deregulation transformed labor markets and work in long-haul trucking and thus fostered a revolution in logistics, based on six months of fieldwork as a long-haul trucker, more than 120 interviews with truckers, and survey data.

### **Research Team Biographies (alphabetical)**



**Bill Holloway**, State Smart Transportation Initiative, lead on modeling. Bill Holloway (MS in Urban and Regional Planning, UW-Madison; BA Colorado College) is a Transportation Policy Analyst at the State Smart Transportation Initiative. Since joining SSTI, he has worked on a wide variety of projects involving transportation finance, transportation demand management, stakeholder communication, scenario analysis, school site selection, and other issues. Previously, he worked as a transportation analyst in the Austin, Texas office of Cambridge Systematics, Inc. At Cambridge Systematics, Bill worked on a regional and statewide plans and studies dealing with multimodal freight transportation and associated issues. Prior to attending graduate school, he served as a Peace Corps Volunteer in the Kingdom of Tonga.



**Sage Kokjohn**, Engine Research Center, lead on engineering efficiencies. [Sage Kokjohn](#) is an Assistant Professor in the Department of Mechanical Engineering at the University of Wisconsin – Madison. His research interests include engine modeling and experiments focused on explaining the mechanisms controlling high-efficiency combustion systems and developing pathways to achieve robust, high-efficiency energy conversion. He received his Ph.D in Mechanical Engineering from the University of Wisconsin – Madison in 2012. Professor Kokjohn was a visiting researcher at the Combustion Research Facility at Sandia National Labs where he used optical engine experiments to investigate low temperature, premixed combustion. He has over 40 publications related to high efficiency engine combustion.



**Peter Luksysz**, guidance and oversight of student researches from the Wisconsin School of Business. Pete teaches supply chain management courses as a senior lecturer at the University of Wisconsin-Madison School of Business. He is Director of Applied Learning in the Grainger Center for Supply Chain Management and an academic affiliate in the Kohl's Center for Retailing Excellence. Pete teaches courses in the Wisconsin undergraduate, MBA and executive education programs. He developed courses in Enterprise Resource Planning (ERP) and Logistics Management, which he teaches as part of the core supply chain management curriculum. Pete is the SAP University Alliance faculty liaison. He led an initiative to implement SAP enterprise software at the School of Business for educational use. His areas of expertise are supply chain management, business



logistics, ERP system implementation, and inventory management. He began teaching at the School of Business in 2004.

Prior to his move to academia, Pete worked at Abbott Laboratories and EMD Chemicals, the North American affiliate of MERCK, KGaA where he held the positions of senior director supply chain management, director of global logistics, and SAP project leader. In his role as SAP project leader, he led a team of over 100 employees in a successful business transformation where ten SAP modules were implemented at six U.S. sites. At Abbott Laboratories he completed a two-year management development program and held positions in inventory planning, plant supervision, and financial analysis. He has consulted, advised, and served as an expert witness to companies in the automotive, life science, defense and transportation industries.

Pete is APICS certified in production and inventory control. He received an MBA in supply chain management and a BS in industrial engineering from the University of Wisconsin-Madison.



**Kelly Maynard**, UW Center for Integrated Agricultural Systems, project assistant, lead on human organization. Kelly currently provides support to the Wisconsin Food Hub Cooperative in the areas of producer development, food safety and launching a value-added products line. From 2010-2014 she worked as the Technical Assistance Facilitator and General Manager of the Spring Rose Growers Cooperative in Madison, fitting her professional commitment to design and provide technical assistance to underserved agricultural producers. Kelly served as an agro-forestry volunteer with the Peace Corps in Paraguay from 2003-2005 and managed a forestry project in Indonesia for Conservation

International from 2006-2008. She earned her Master's degree in Agroecology from UW-Madison in 2010. Her local food system development work is rounded out by a position at the WI Department of Natural Resources where she helps to expand hunter education and resources for adults and families.



**Michelle Miller**, UW Center for Integrated Agricultural Systems, project manager, lead on process. Michelle is Associate Director at the Center for Integrated Agricultural Systems, UW-Madison, where she manages a number of projects related to food systems sustainability. Her expertise is in human organization, participatory research and leadership, sustainable agriculture, systems thinking and restoration ecology. Michelle also serves on the Wisconsin Farmers Union Foundation board of directors.



**Dr. Alfonso Morales** Alfonso is a professor of Urban and Regional Planning at the University of Wisconsin-Madison. He studies public marketplaces and street vendors, and the role and function that they serve in economic development. Using an innovative blend of the disciplines of sociology and urban planning, Morales has created a body



of books, articles, book chapters, and other writing that provides practical insight into the ways that street-level economies and social interactions contribute to and influence community and economic development. He is among a small number of researchers who employ ethnographic field research methods to help inform contemporary theoretical debates about community food systems, public markets, space use, and street vending businesses. His primary dissertation research on Chicago's Maxwell Street Market established the foundation for what has become a wider range of studies of the social, cultural, and economic factors that involved in the interactions between public marketplaces and the areas where they are established. His new research on community and regional food systems expands his intellectual and policy agenda through the \$5 million dollar USDA-AFRI grant of which he is Project Co-Director and Research coordinator.



**Ernie Perry** Ernie is the Program Administrator and Facilitator of the Mid-America Freight Coalition. Before joining the National Center for Freight and Infrastructure Research and Education, Perry was the Administrator of Freight Development at the Missouri Department of Transportation. During his seventeen-year tenure at MoDOT, he also served as research administrator, organizational results administrator, senior environmental specialist, and socioeconomic specialist. Perry has worked closely with freight leadership at AASHTO, FHWA, and MARAD, served on NCFRP panels, and participated in the Scan of European Union Freight Corridors. Perry holds a BS in animal

science, an MS in rural sociology, and a PhD in rural sociology from the University of Missouri-Columbia.



**Anne Reynolds**, Center for Cooperatives, lead on governance. Anne Reynolds is a Faculty Associate and Assistant Director of the University of Wisconsin Center for Cooperatives. She teaches a course on cooperatives (AAE 323), and develops courses, conferences and educational programs at the Center. She has led numerous workshops on board leadership, board roles and responsibilities, and strategic planning. Anne is currently researching cooperative governance, behavior and performance, as part of the Center's

Cooperative Business Study. Her areas of interest include governance, member loyalty, business structure and innovative uses of the cooperative model. She has worked with cooperatives in all sectors, including agriculture, food, energy, purchasing and worker-owned. Anne serves on several boards, including The Cooperative Foundation. Before joining the Center for Cooperatives, she worked at the Credit Union National Association (CUNA).



**Ben Zeitlow**, Center for Freight Research and Education, lead on GIS. Ben Zietlow recently joined CFIRE as a geoeconomist. He will focus on both CFIRE and MAFC research activities. Before joining CFIRE, Zietlow worked as a surveyor for La Crosse Engineering and Surveying Co., Inc., as a GIS intern at Gunderson Lutheran Health System, and a traders' assistant at Robert W. Baird & Co. He holds a BS in Economics and Philosophy from University of Wisconsin-La Crosse and a MS in Geographic Information Science from Saint Mary's University.

## Student Research Team Biographies (alphabetical)



**Nancy Chachula**, Department of Landscape Architecture, lead on envisioning Chicago metro. Nancy Chachula started her business in 1999 as Verde Terra gardens, a small backyard grower of ornamental and annual plant stock. Applying her passion for business, plants, and design, she began creating planting designs for residential customers shortly after. Today, Nancy offers design services and landscape managerial services to residential and business customers. Nancy recently completed her Landscape Architecture degree at the University of Wisconsin-Madison.



**Justin Johnson** is pursuing his Master of Business Administration with a focus in supply chain management at the Wisconsin School of Business. He graduated from the University of California, San Diego in 2007 with a Bachelor of Arts in economics. After graduation, Justin worked for the UC San Diego Health System, where he was first exposed to supply chain management and began to develop an appreciation for the profound impact it can have on an organization. Throughout his inventory storehouse experiences, Justin was able to implement policies and modify procedures that addressed points of failure and increased operational efficiency. He also planned and executed inventory-related aspects of projects ranging in scope from \$6K to \$1.5M for the project management team.



**Ryan Kildow** is earning a Master of Business Administration, specializing in supply chain management, from the Wisconsin School of Business. He graduated from the University of Wisconsin-Milwaukee with a Bachelor's degree in economics. Upon graduation, he joined the United States Army as an Infantry Officer and served at Joint Base Lewis-McChord in Washington. He has spent the past three years in a variety of direct leadership roles including Forward Logistics Element Platoon Leader, Mortar Platoon Leader, and Reconnaissance Platoon Leader. In these roles, he has focused his efforts on job specialization proficiency, professional development, team building, and resource allocation and management. While serving as a Forward Logistics Element Platoon Leader in Afghanistan, he was introduced to supply chain complexity as he led a cross-functional team engaged in on-demand distribution of key sustainment supplies for a Task Force Headquarters and seven off-site operation centers. In this role, he worked alongside industry leaders such as Oshkosh Corporation, Lockheed Martin, Raytheon and ManTech International, as well as host nation commercial transportation assets.





**Stephen Larsen** is pursuing his Master of Business Administration at the Wisconsin School of Business. He graduated from Brigham Young University in 2011 with a bachelor's degree in business management with an emphasis in supply chain management. After graduation, he joined the transportation company C.R. England as a logistics analyst where he led the design and pricing of new business opportunities within the company's dedicated fleet services division. In this role, Stephen worked on numerous projects including transportation network design, financial modeling, contract and rate negotiations, and continuous improvement projects. His involvement in these projects helped give him a unique perspective on many different supply chains ranging from Fortune 100 companies to local grocery chains.



**Dawn Luo** is completing her Master of Business Administration in supply chain management at the Wisconsin School of Business. She graduated from National Chengchi University in Taiwan in 2010 with a bachelor's degree in management information systems. Upon graduation, she joined an integrated circuit design house, Silicon Touch Technology, National Hsinchu Science Park of Taiwan, as sales personnel responsible for managing 20 accounts over five product lines and introducing parts into new products' supply chains. After spending a year and a half in her sales role, she joined Foxconn, Shenzhen, China, where she was responsible for equipment purchasing for the iPad production line. She purchased and scheduled equipment arrivals for iPad repair lines and directed quantity and pricing confirmation of reimbursement items.



**Julia Schilling**, Department of Landscape Architecture, lead on envisioning Milwaukee metro. Julia graduated from the Milwaukee Institute of Art and Design (MIAD) in 2008 with a focus in sculpture and completed a design certificate in Landscape Architecture in 2015.



**Adam Zachary** is earning a Master of Business Administration from the Wisconsin School of Business, focusing on system dynamics, efficiency, and environmental impact. He graduated from the University of Colorado at Boulder in 2004 with a Bachelor of Arts in economics. After graduation, he moved to Japan for three years to teach English through The Japan Exchange and Teaching Program, Adam then worked for Whole Foods Market, an upscale U.S.-based grocery chain specializing in natural and organic foods and it was there, as a retail seafood buyer, that he discovered his passion for sustainable business. Working closely with suppliers who prioritized sustainability, Adam recognized the impact that "green" supply chains could have if effectively integrated into the operations of a company.