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November 1, 2016

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ECONOMIC TRENDS IMPACTING THE 15-COUNTY REGION



UNIVERSITY OF MINNESOTA DULUTH

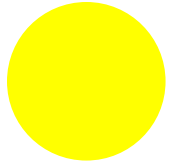
Driven to Discover™

Andrew Burke

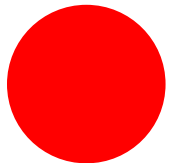
Bureau of Business and Economic Research
Labovitz School of Business and Economics, UMD



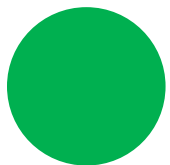
OVERVIEW OF THE REIF REGION'S ECONOMY



September 2016 unemployment rate at 4.8%, up from 4.7% in September 2015



Regional employment at 228,000 (Sept. 2016), compared with 231,000 in September 2015



Average annual earnings in 2015 at \$42.5K, up from \$41.2K previous year

Source: EMSI, 2016 and Local Area Unemployment Statistics, 2016

OVERVIEW OF SELECTED INDUSTRIES

<i>Industry</i>	<i>2015 Jobs</i>	<i>Employment change (2014-2015)</i>	<i>Average earnings (2016)</i>
Accommodation/Food Services	23,370	473	\$17,739
Construction	15,830	451	\$48,394
Health Care/Social Assistance	40,314	407	\$51,522
Transportation/Warehousing	8,765	178	\$53,655
Finance and Insurance	9,324	-358	\$49,247
Government	45,832	-550	\$54,025

Source: EMSI, 2016

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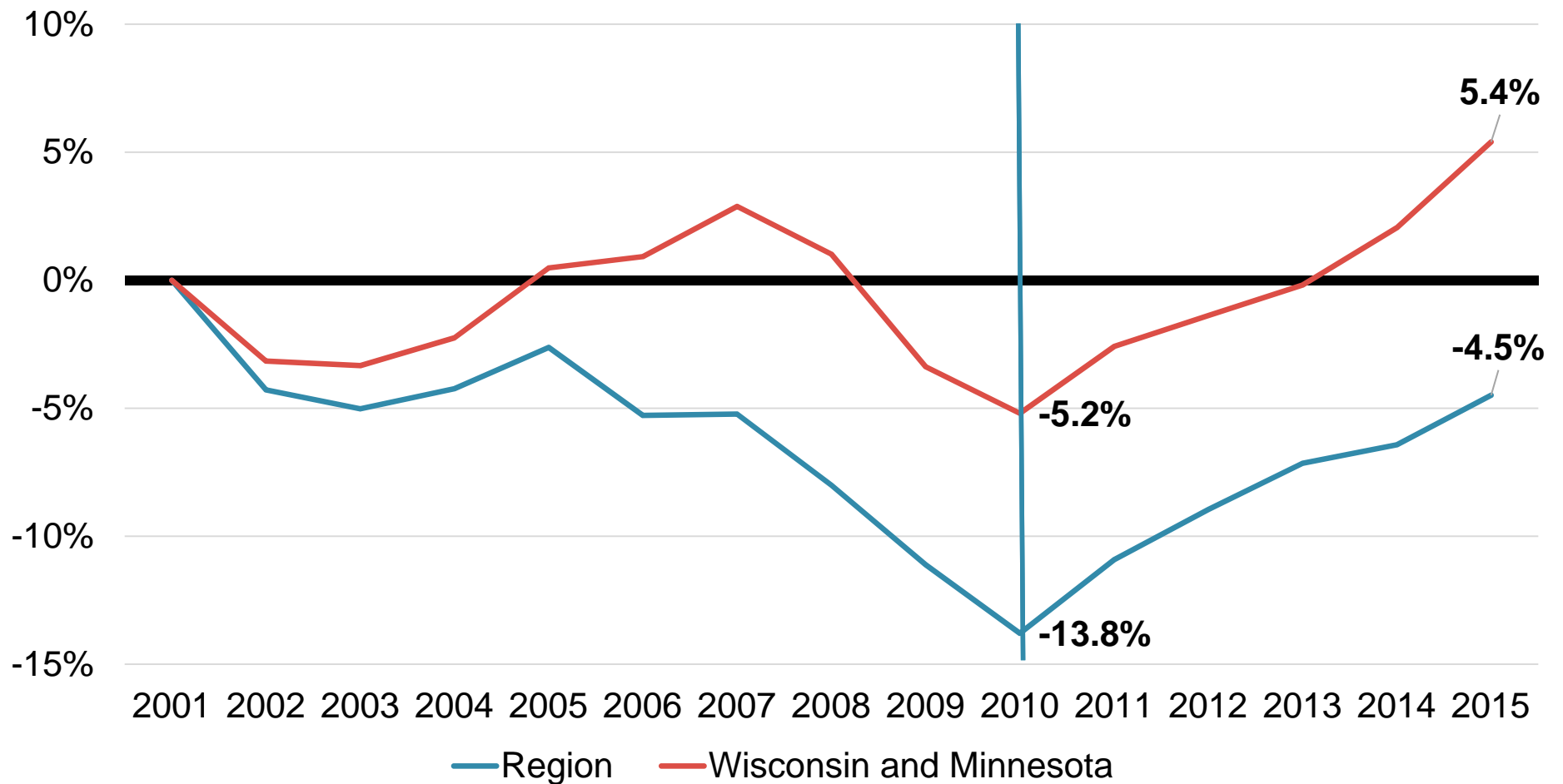
Source: EMSI, 2016

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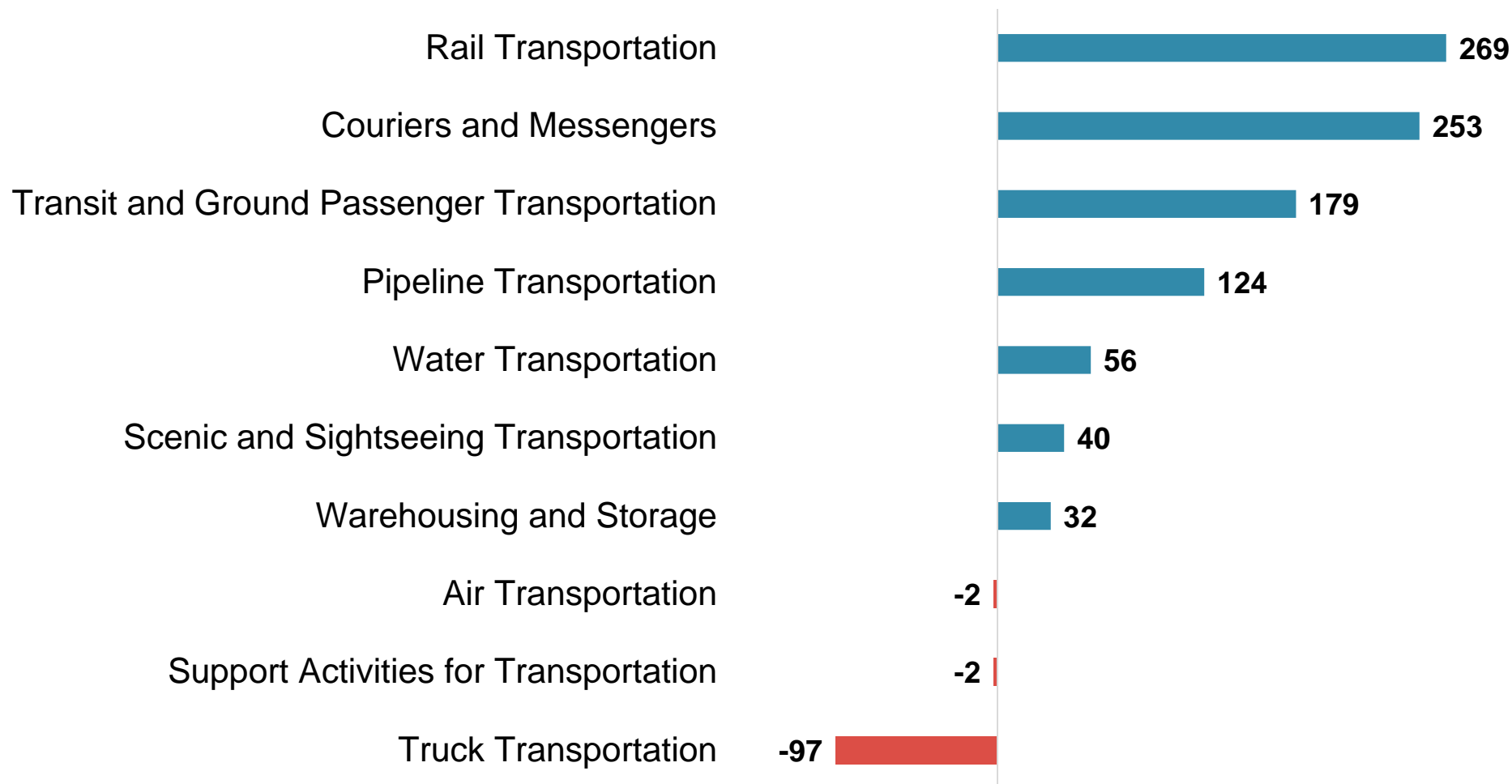
Source: EMSI, 2016

TRANSPORTATION AND WAREHOUSING % CHANGE IN EMPLOYMENT

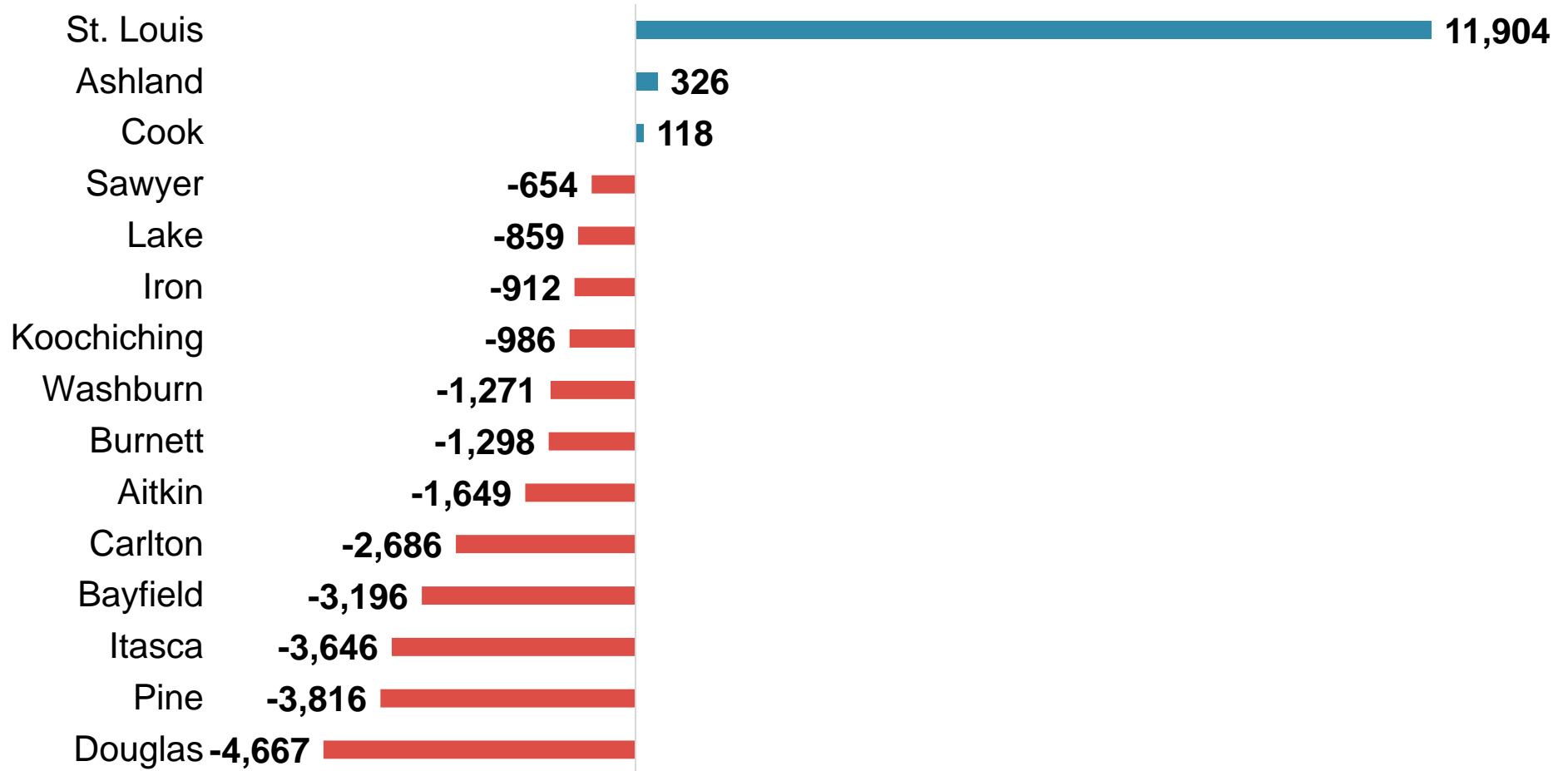


Source: EMSI, 2016

JOB GROWTH OF SUBSECTORS (2010-2015)



COMMUTING NET INFLOW/OUTFLOW (2014)



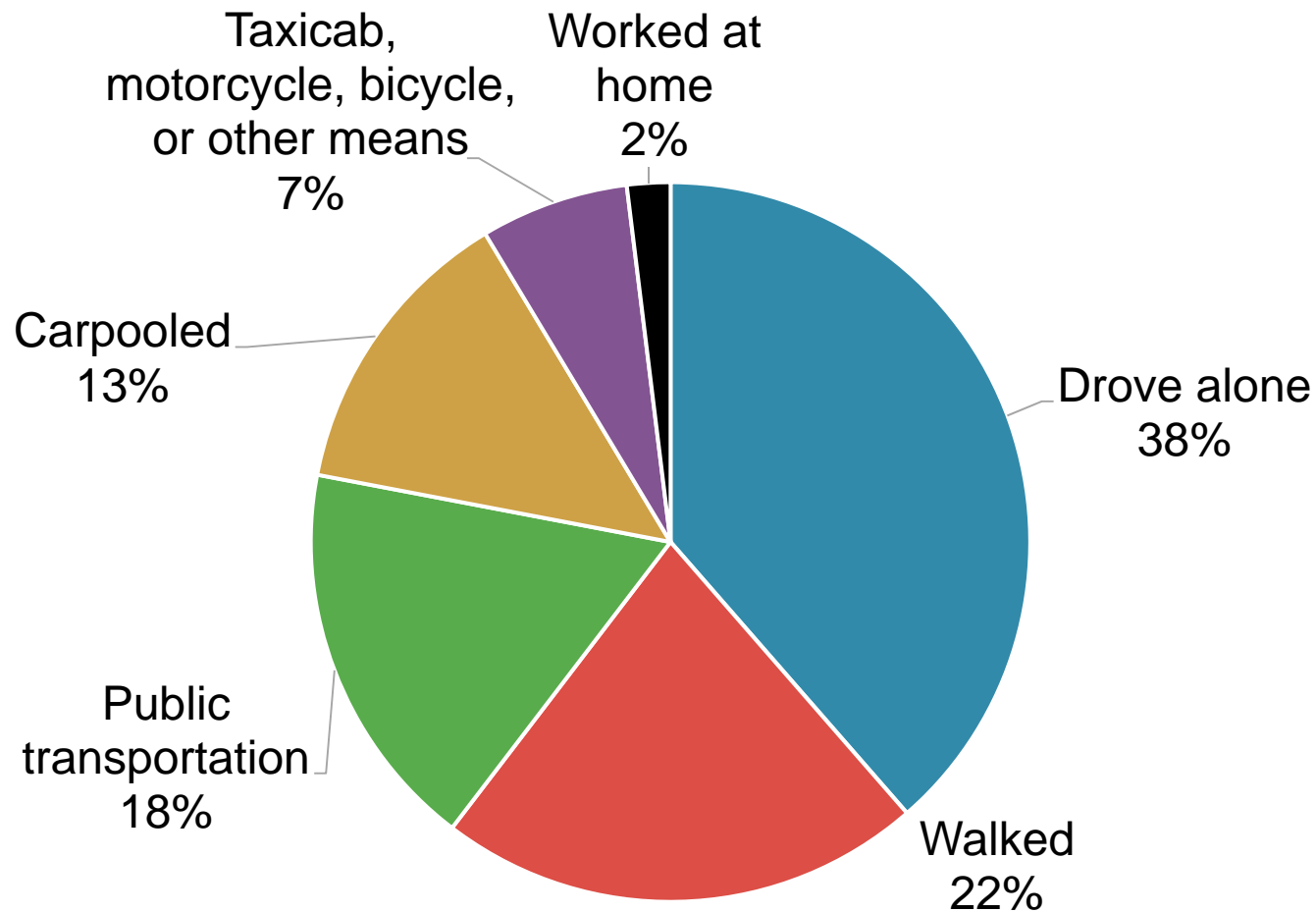
Source: American Community Survey, 2010-2014, 5-Year Estimates

VEHICLE AVAILABILITY

- Nearly **6,000** workers don't have access to a vehicle - about **3%** of the work force.
- Cook County has highest rate of workers without a vehicle - **4.2%**
Iron County lowest - **1.1%**

Source: American Consumer Survey, 2010-2014, 5-Year Estimates

MEANS OF TRANSPORTATION FOR WORKERS WITHOUT VEHICLE



Source: American Community Survey, 2010-2014, 5-Year Estimates

SUMMARY OF FINDINGS

- Unemployment rates and average earnings rising
- Employment gains - Food Service, Construction and Health Care
- Employment losses - Government and Finance
- Transportation and Warehousing resurgence since 2010
- St. Louis County – significant net inflow of workers
- REIF region is highly vehicle dependent

CONSUMER CONFIDENCE INDICATORS



Caleb Hjelle

University of Wisconsin-Superior



CONSUMER CONFIDENCE INDICATORS

- **INDEX OF CONSUMER SENTIMENT (ICS)**

Consumer outlook on personal finances, business conditions and consumption spending

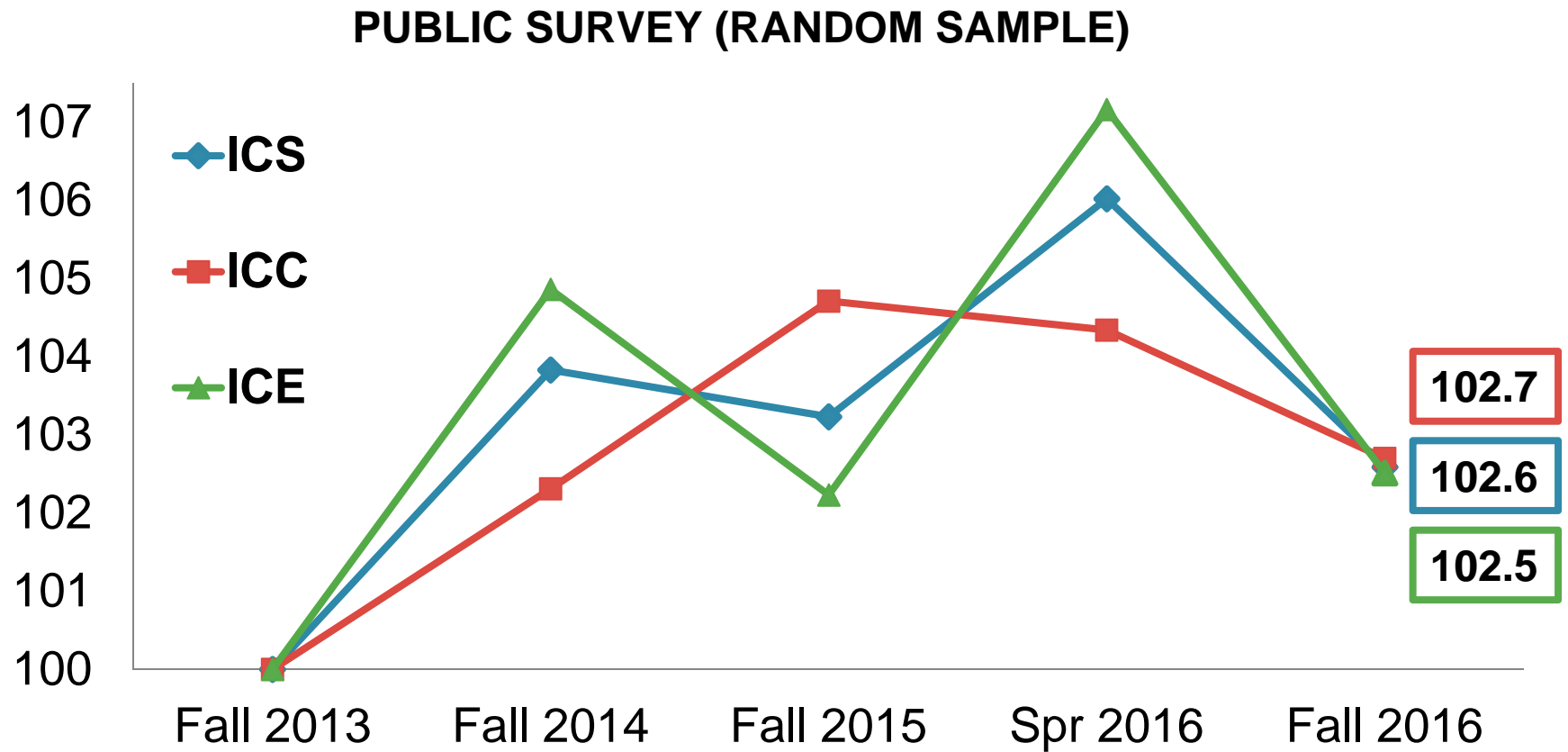
- **INDEX OF CURRENT CONDITIONS (ICC)**

Gauges current state of the economy

- **INDEX OF CONSUMER EXPECTATIONS (ICE)**

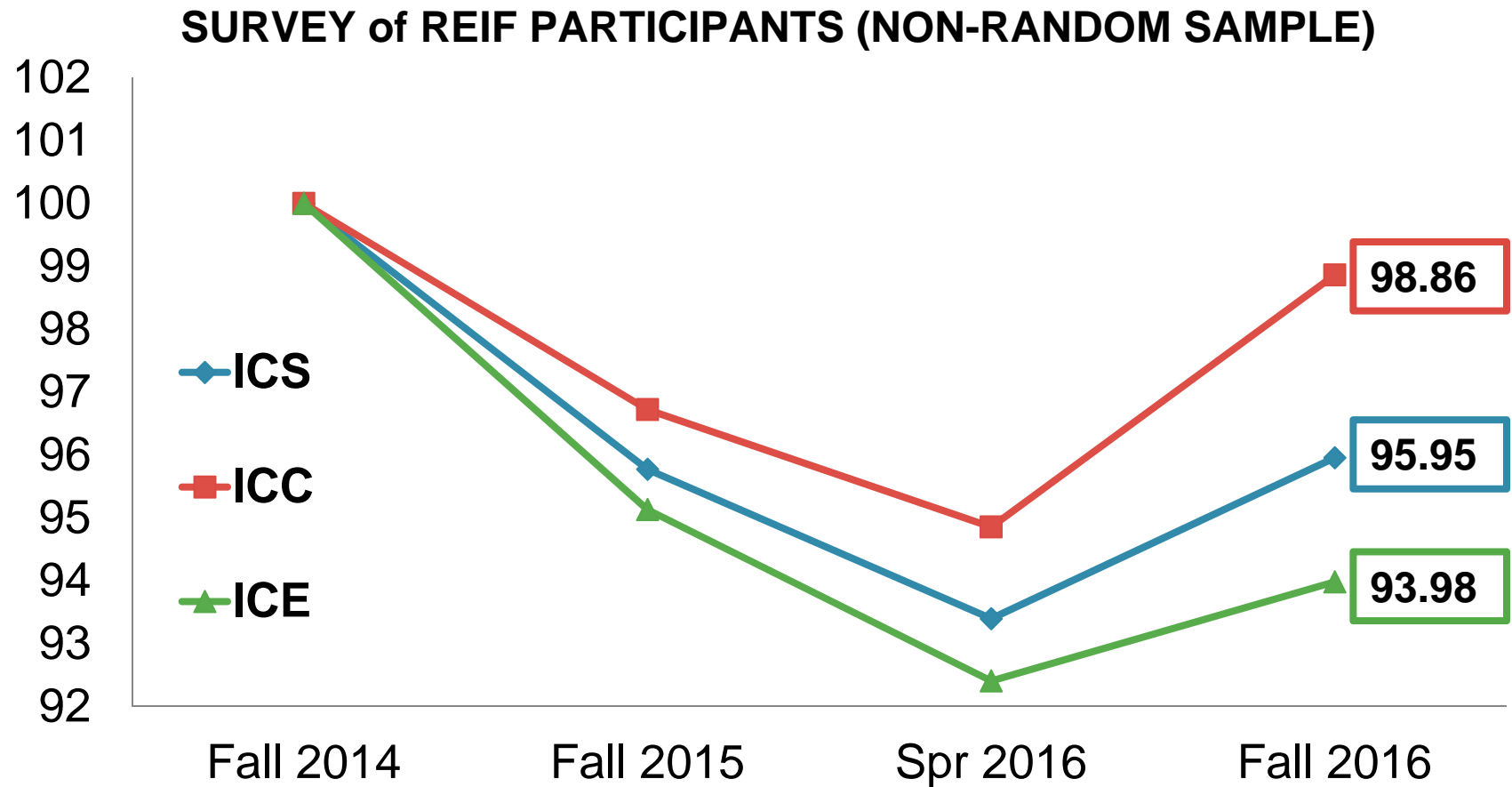
Projects future economic and financial conditions

CONSUMER CONFIDENCE INDICATORS






Source: UWS Consumer Confidence Survey

CONSUMER CONFIDENCE INDICATORS



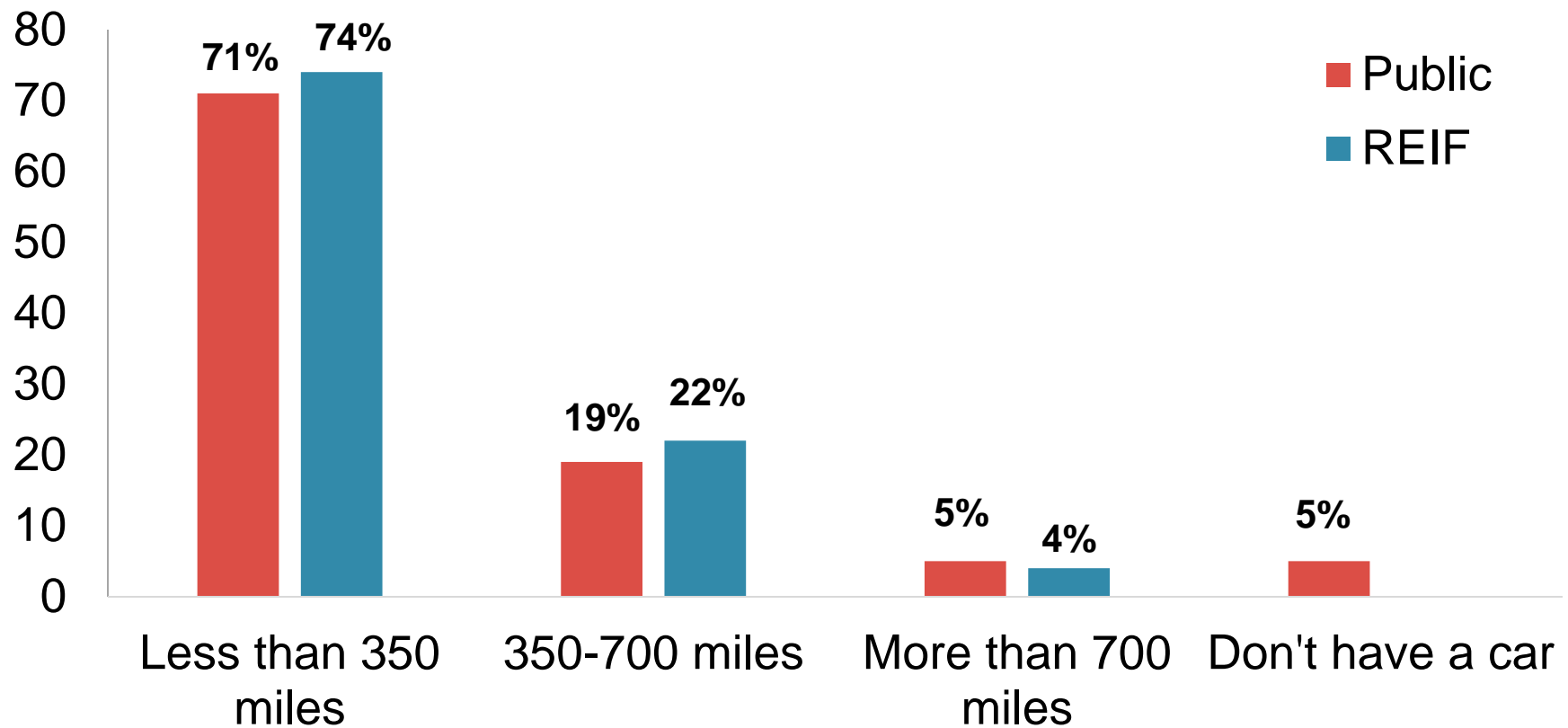
CONSUMER CONFIDENCE INDICATORS

Indicator	Public Survey (Random)	REIF Survey (Non-Random)
ICS 	Weakening short-term economic outlook	Rising optimism about short-term economic outlook
ICC 	Economy is slowing down	Strong current state of the economy
ICE 	Expectations of future economic slowdown	Expectations of continued economic expansion

TRANSPORTATION: ROAD USAGE

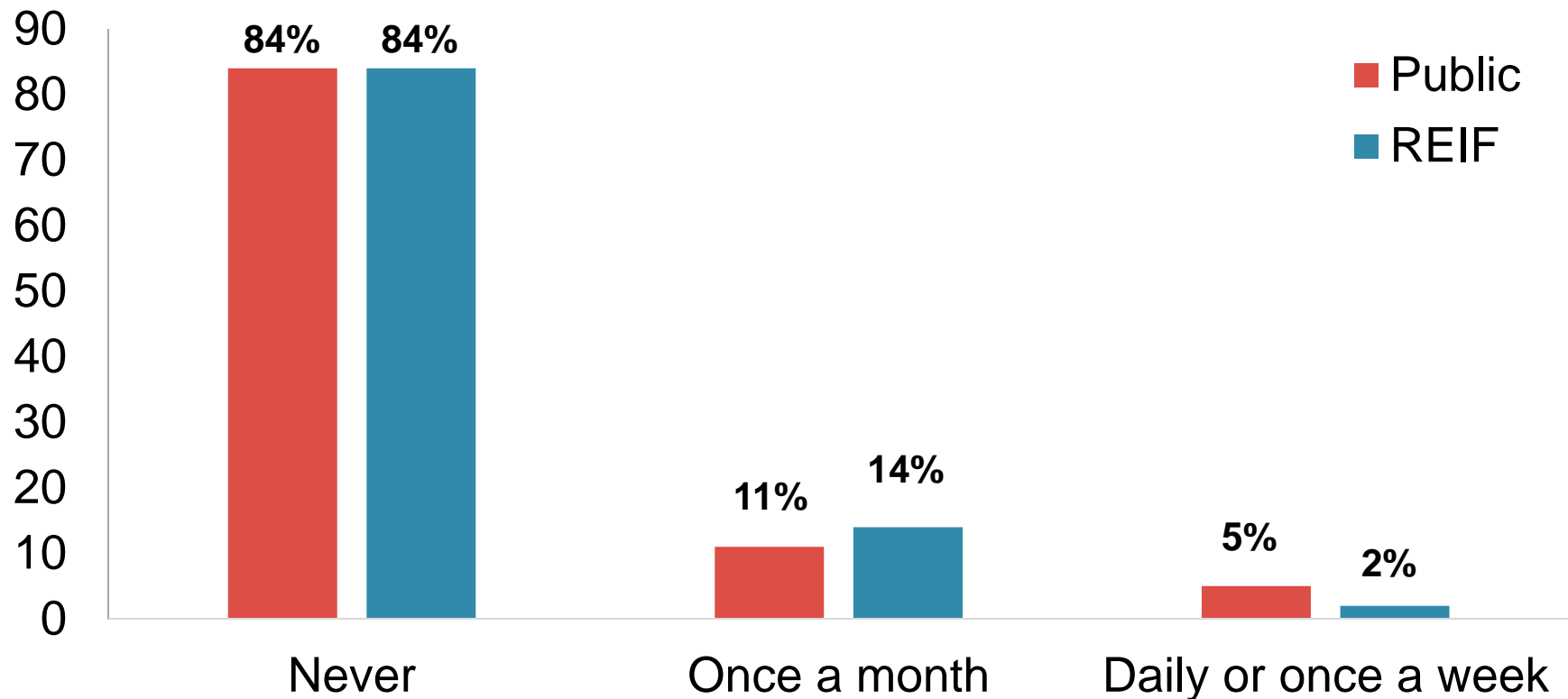
AVERAGE DRIVING PER WEEK (MILES)

% of Respondents



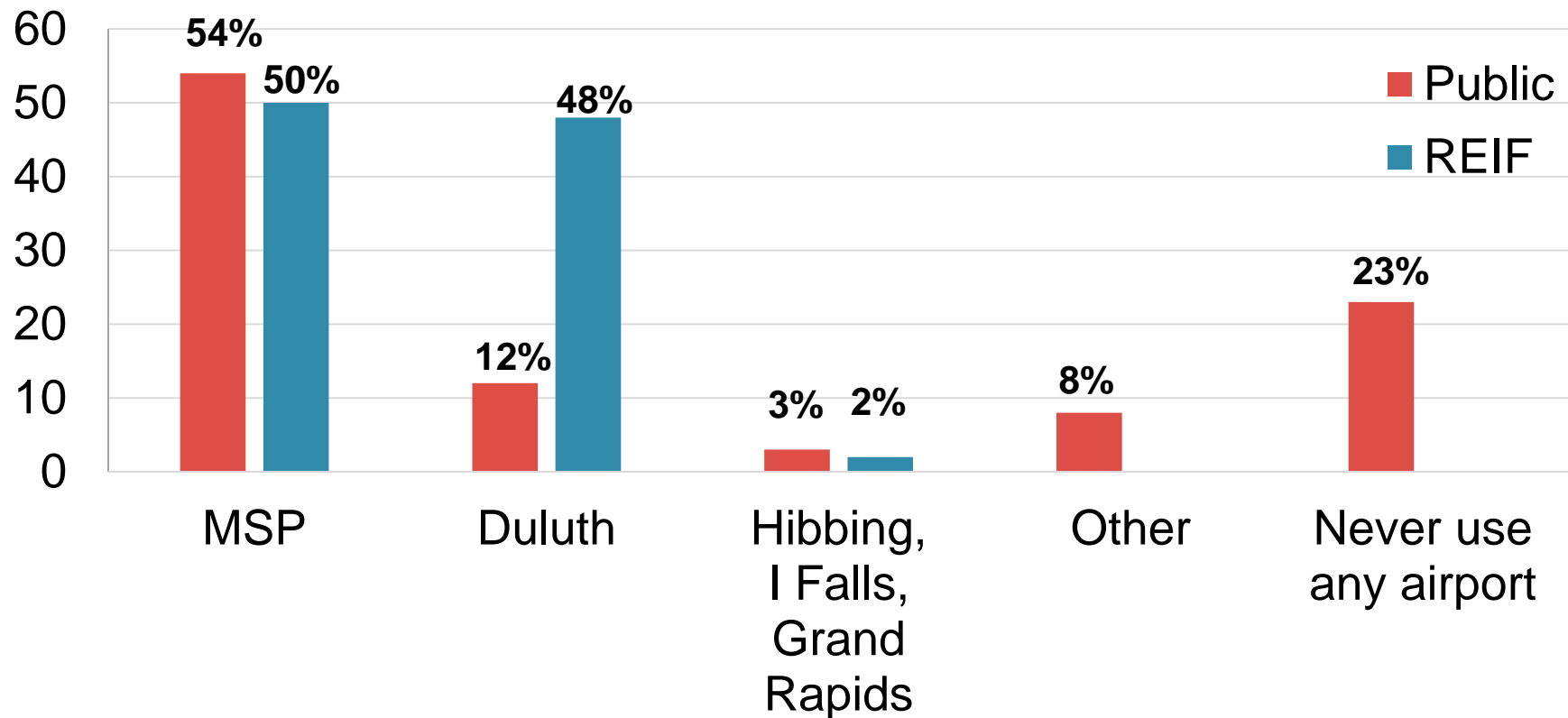
TRANSPORTATION: PUBLIC TRANSIT USAGE

% of Respondents



TRANSPORTATION: REGIONAL AIRPORT USAGE

% of Respondents



Source: UWS Consumer Confidence Survey Fall 2016

SUMMARY OF CONSUMER SURVEY

Consumer Confidence Indicators

Random households have a weakening outlook while REIF participants are becoming more optimistic about the economy

Road Usage

On average consumers drive less than 50 miles a day

Public Transit Usage

Very low usage or no public transport available

Regional Airport Usage

Mostly used regional airport is Minneapolis-St. Paul International Airport

REGIONAL EQUITY INDEX



Paige Ford

University of Wisconsin-Superior



REGIONAL EQUITY INDEX

Methodology

- Equally weighted index
- 12 companies with significant employment in the region

Allete

Cliffs Natural Resources

Polymet

Ascena Retail Group

Enbridge Energy Partners

Sappi Limited

Calumet

Ikonics

UnitedHealth Group

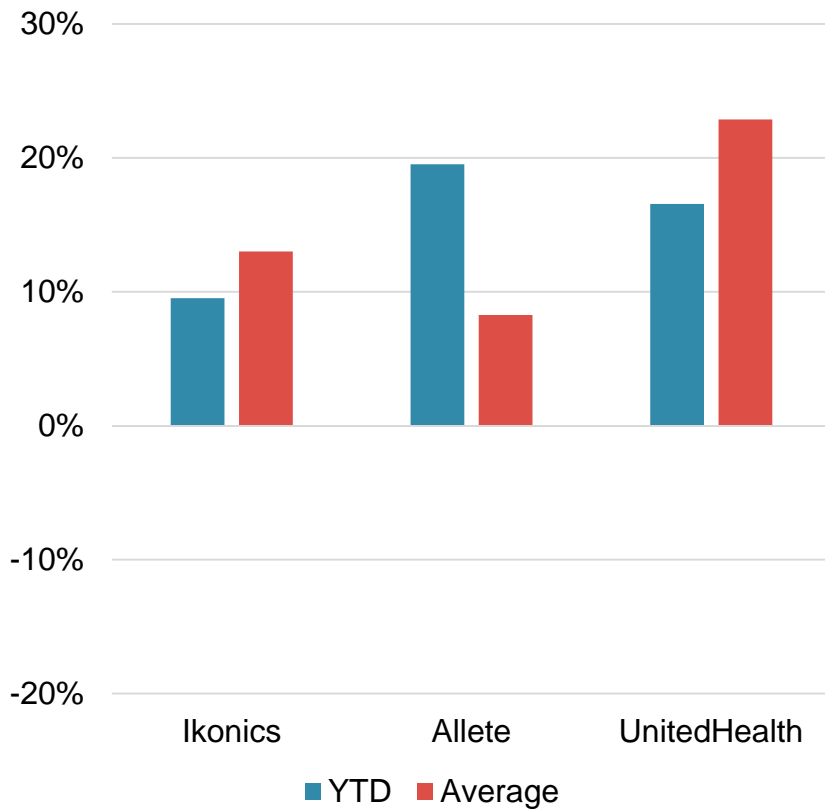
Canadian National
Railway

Louisiana-Pacific

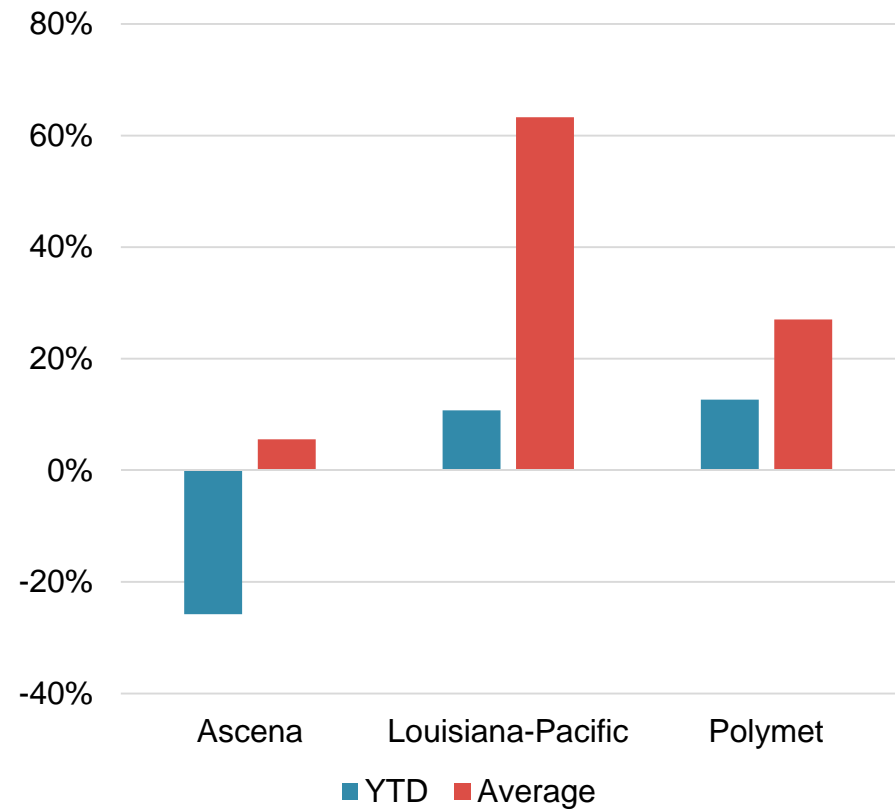
US Steel

REGIONAL EQUITY INDEX

YTD Returns vs. Previous Performance

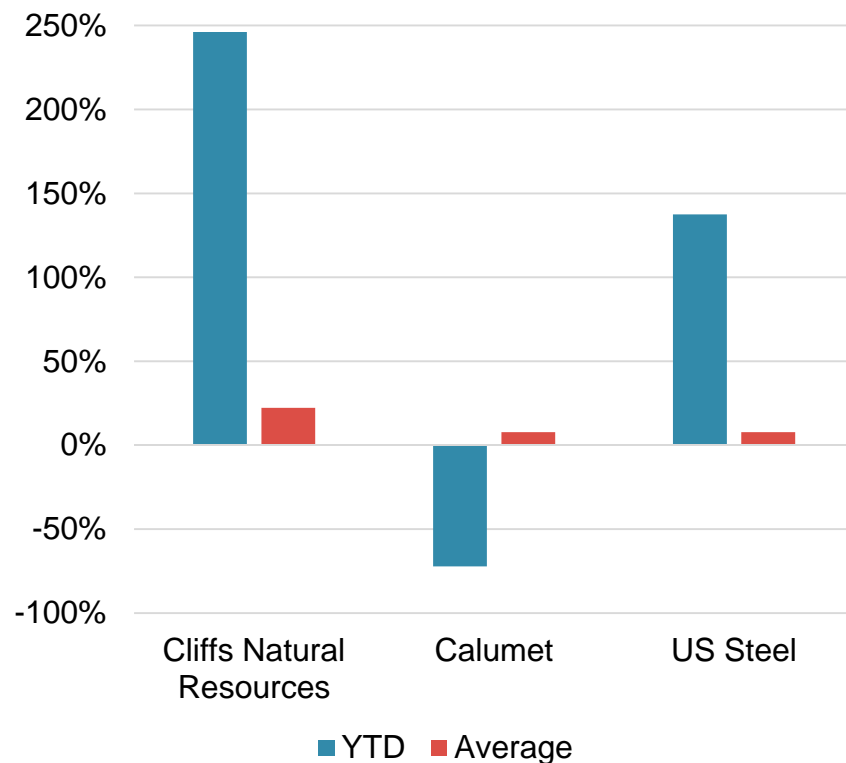


YTD Returns vs. Previous Performance

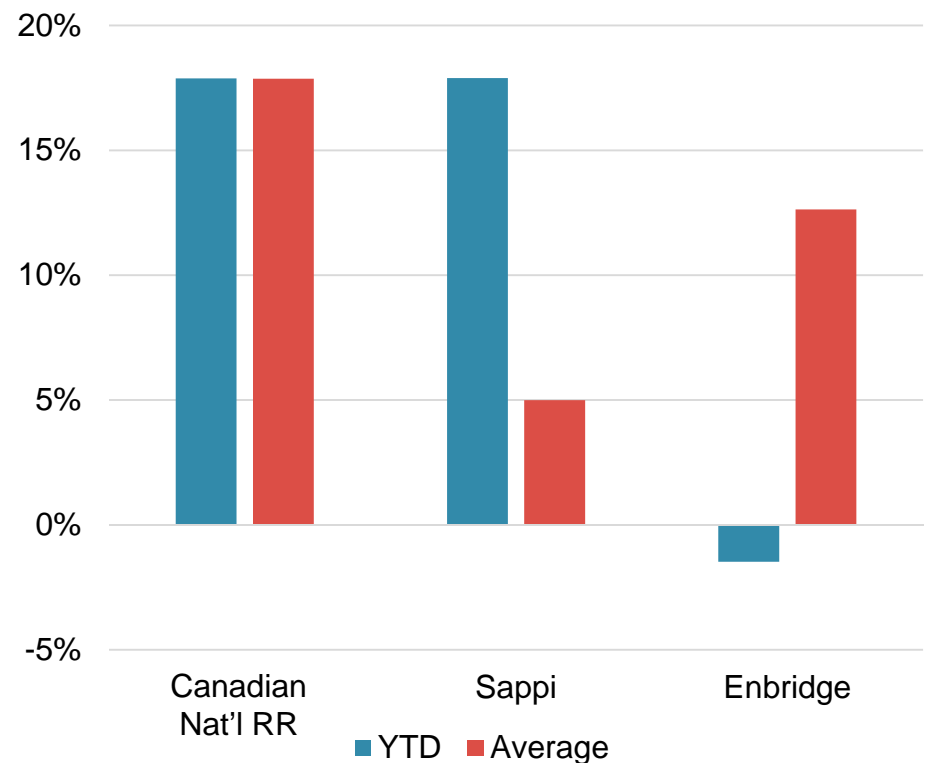


REGIONAL EQUITY INDEX

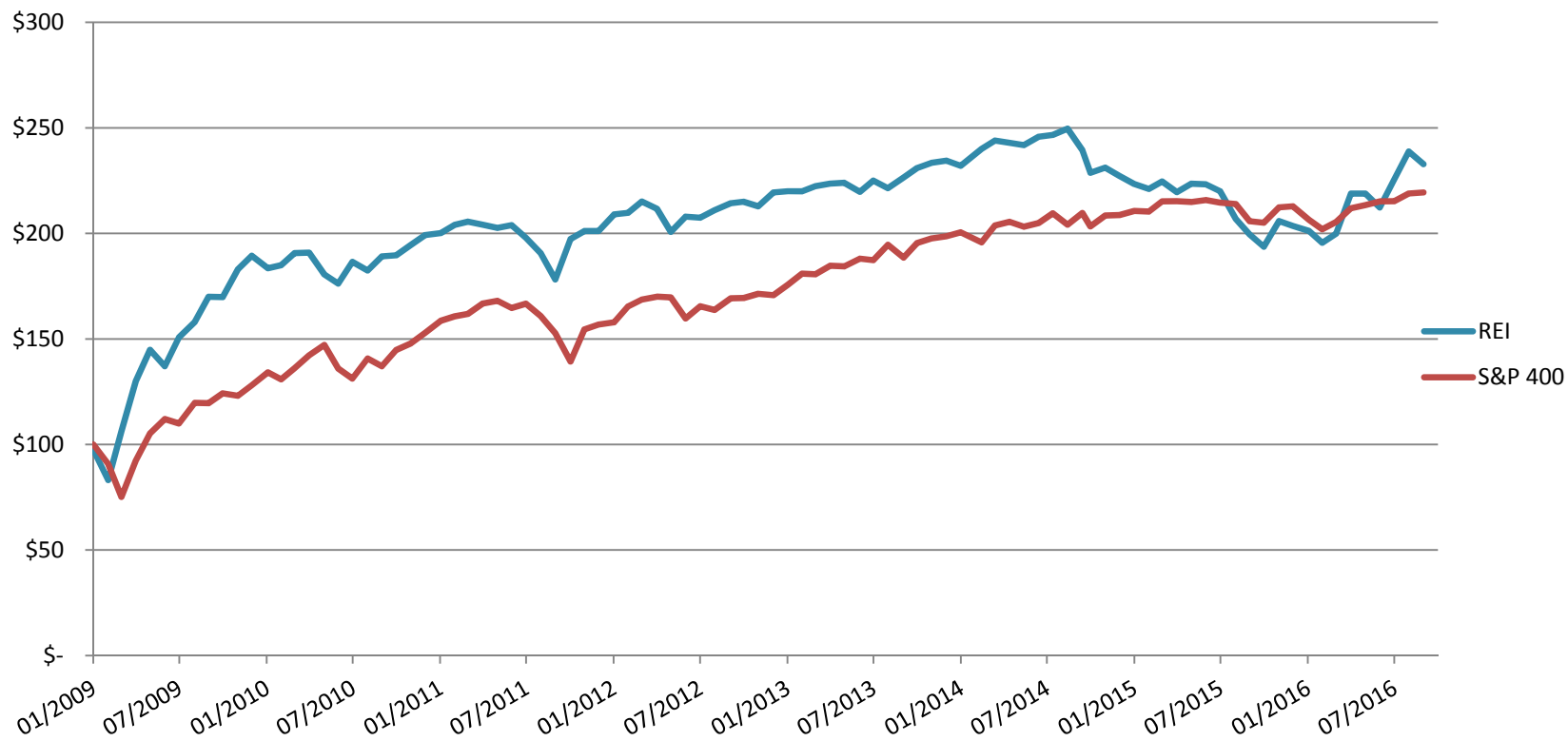
YTD Returns vs. Previous Performance



YTD Returns vs. Previous Performance



REI VS S&P 400 INDEX



SUMMARY OF FINDINGS

Performance Indicator	Major Findings
REI vs S&P 400	REI slightly overperforming compared to the benchmark
Value Line®	<ul style="list-style-type: none">• REI: Average expected price performance over the next 6-12 months• Average to above-average risk• Average to below-average expected price stability over the next 3-6 months
Morningstar®	Average short interest ratio down slightly to 5.93
Overall implications:	Expected to keep pace with the S&P 400 Mid Cap Index

BUSINESS CONFIDENCE INDICATORS



Ana Maria Camelo Vega

The School of Business and Technology, Economics Department
The College of St. Scholastica



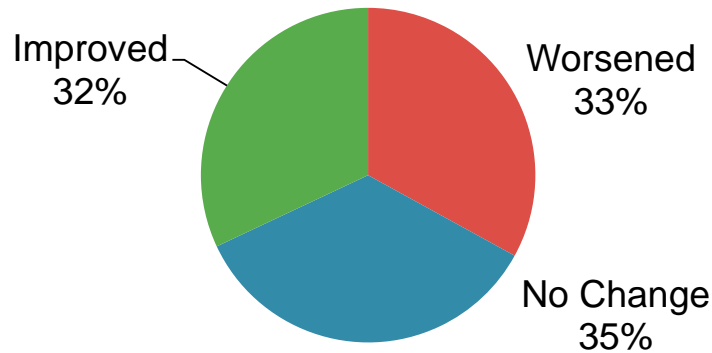
BUSINESS CONFIDENCE INDICATORS

Fall 2014	110
Spring 2015	108
Fall 2015	108
Spring 2016	109
Fall 2016	108

GENERAL BUSINESS CONFIDENCE

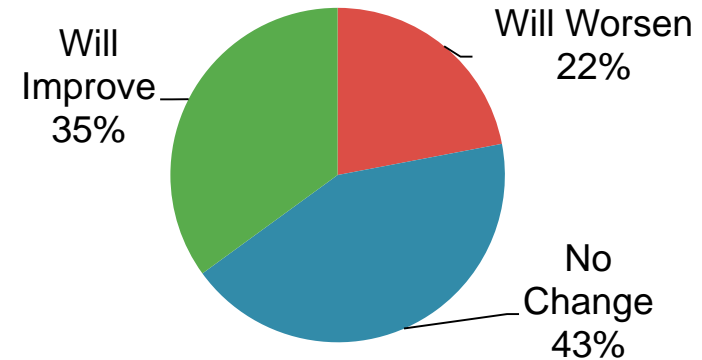
Last 6 months

Company Outlook

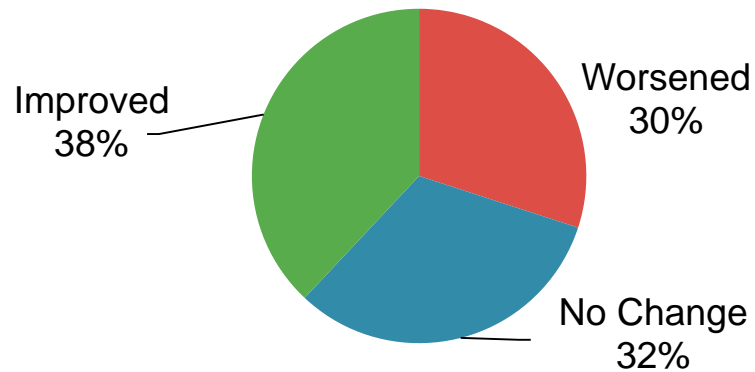


Next 6 months

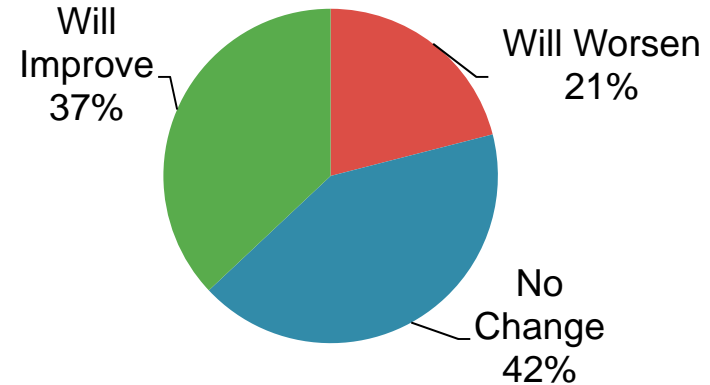
Company Outlook



Business Activity



Business Activity



SPECIFIC CONFIDENCE INDICATORS

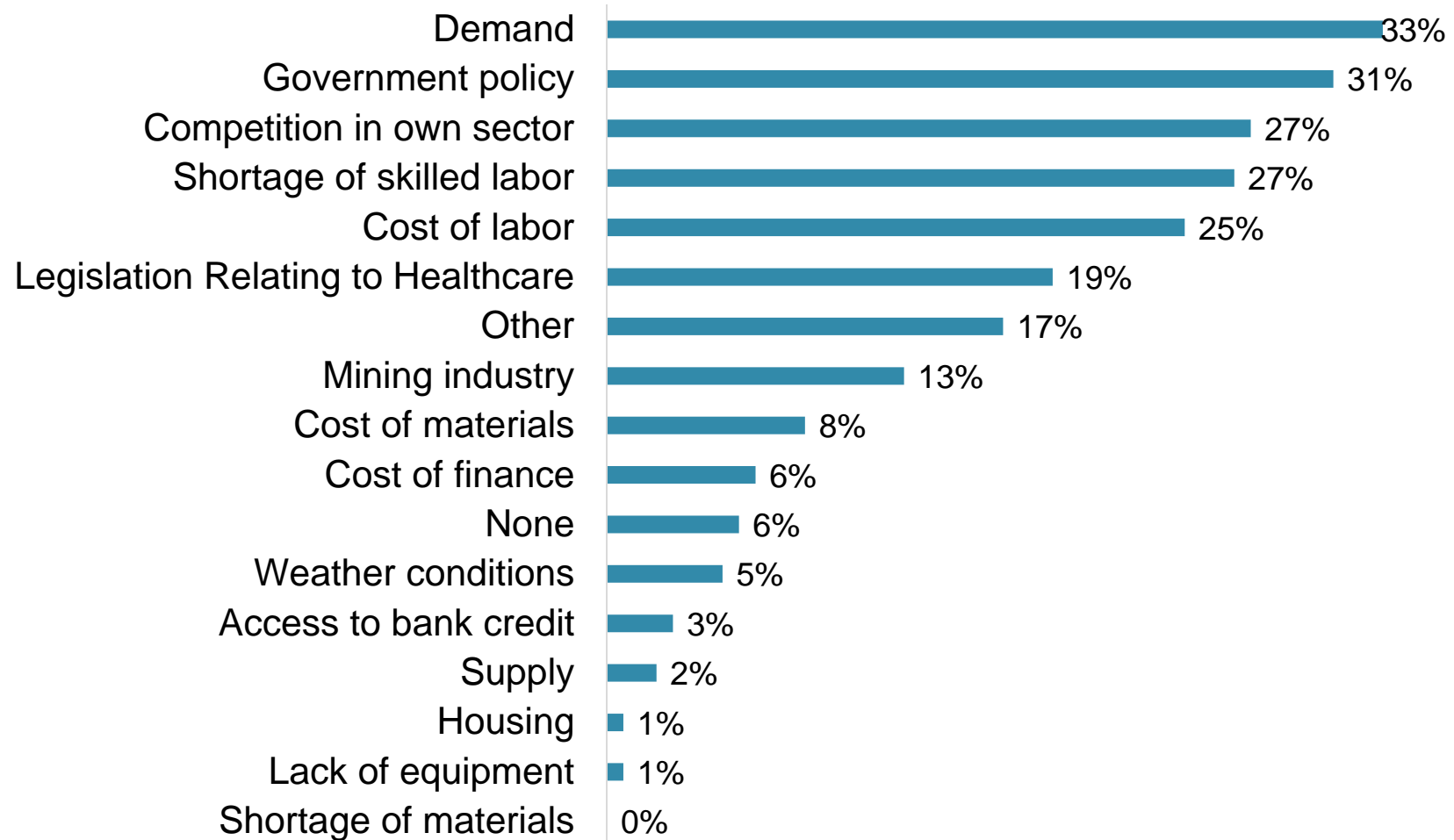
Last 6 Months

- Sales Revenue
 - 34% saw an increase in sales revenue.
 - 31% experienced an overall decrease.
- Profits
 - 39% experienced a decline in profits.
 - 26% saw an overall increase.

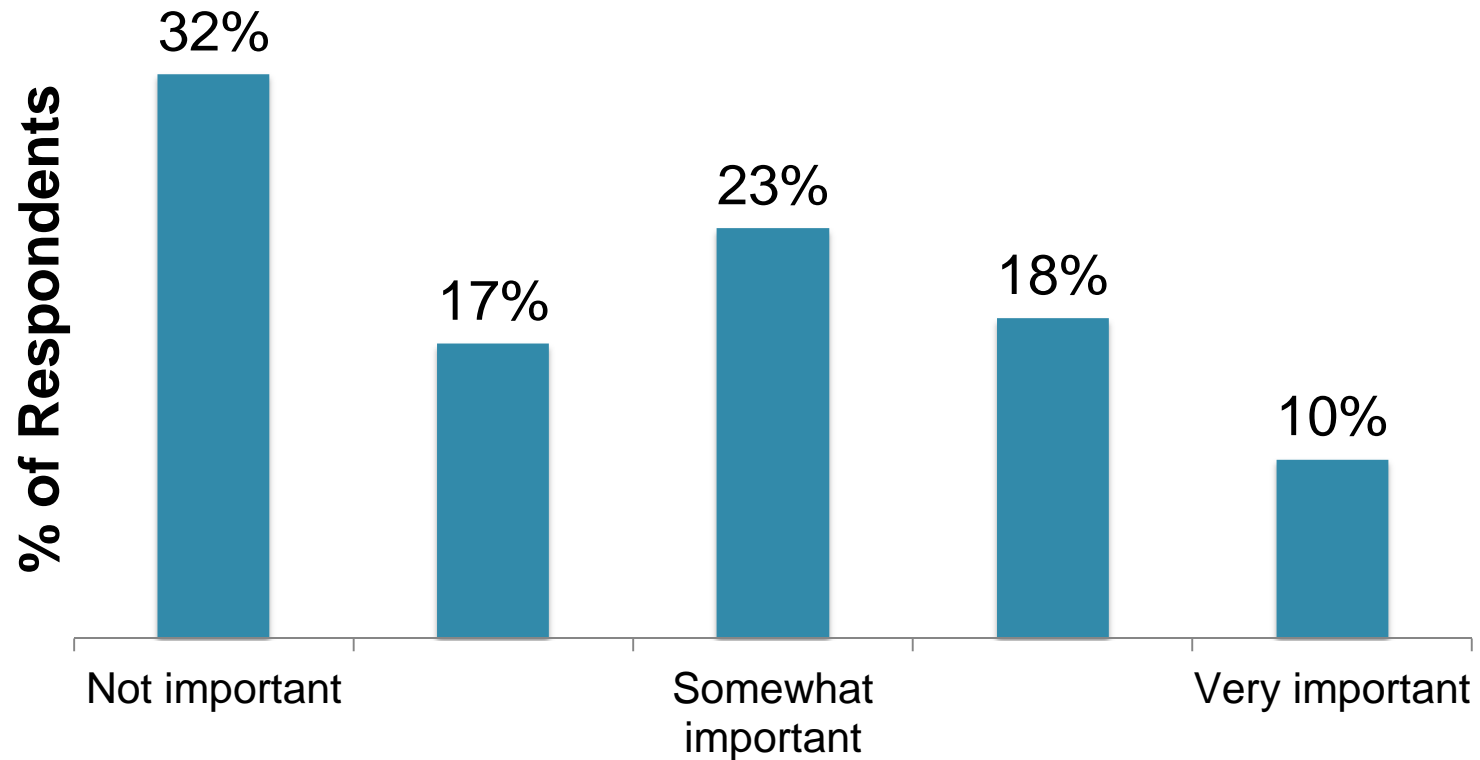
Next 6 Months

- Sales Revenue
 - 34% anticipate an increase in sales revenue.
 - 20% expect a decrease in sales revenue.
- Profits
 - 29% anticipate an increase in profits.
 - 23% expect a decline in profits.

FACTORS LIMITING BUSINESS ACTIVITY



TRANSPORTATION INFLUENCE ON BUSINESS ACTIVITY



TRANSPORTATION DECISION PROCESS

Most Important

- Reliability of service
- Final customer satisfaction

Least Important

- Claims/Damage history
- Access to multiple transportation modes

SUMMARY OF FINDINGS

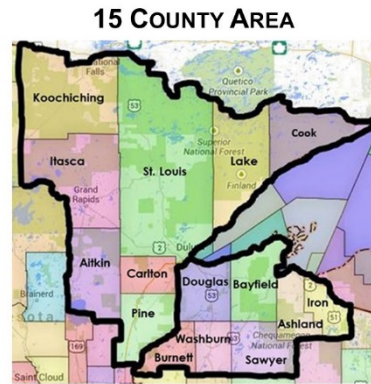
- Overall business confidence still remains positive
- Many respondents are projecting further growth in the next 6 months
- Businesses feel uncertainty due to upcoming presidential election

SUMMARY OF STUDENT PRESENTATIONS

- Overall economic conditions mixed, recent gains in transportation industry
- Consumer confidence mixed
- Regional stocks are slightly over-performing
- Business confidence remains high

Regional Economic Indicator Forum

November 1, 2016



Our Transportation and Logistics Cluster: The Region's Great Asset

Richard D. Stewart, Ph.D. CTL





We Have Tremendous Transportation Infrastructure

- **Marine** – Commercial and recreational
 - Commercial - Duluth Superior, Ashland, Two Harbors, Silver Bay,
 - Recreational - Port Wing, Washburn, Bayfield, Grand Marais and others in the region
- **Rail** – Commercial and Tourist
 - Four Class 1 railroads (BNSF, CN, CP, UP), six shortline railroads
- **Air** – Commercial, Military and Recreational
 - Scheduled Passenger service to and from DLH, HIB, INL, GPZ.
 - Numerous small airports including sea plane bases
- **Highway** – Four lane Highways I-35, US-53,
 - Two Lane US Highways, 8, 63, 169, and 71.
 - Thousands of miles of state and local roads
- **Pipelines**
 - Crude Oil, Product lines, Natural Gas, tank farms, Refinery, Natural Gas Liquefaction plant
- **Customs ports of entry:** International Falls, Duluth Superior, Grand Portage

We Have Exceptional Human Talent

- Logistics and Supply Chain Managers, freight forwarders, terminal operators
- Trucking Companies and drivers
- Ship line headquarters and shipyard workers
- Airplane and jet manufacturing and repairing
- Pipeline and refinery operators
- Rail car and locomotive repair facilities
- Transportation planners and government agencies
- University, Technical and Community College programs in: Transportation and Logistics, Supply Chain Management, Aviation, truck driving, Aircraft Maintenance and Geographic Information Systems

Drivers of Change in Transportation

**“It's tough to make
predictions,
especially about the
future.”** *Yogi Berra*



Drivers of Change in Transportation

- Supply Chain Management
- Technology
- Changing automobile use
- Demographics
- Congestion and new corridors
- Energy
- Environmental Impacts of transportation
- Intermodal Freight
- Revenue for Infrastructure needs



Supply Chain Management (SCM)

“SCM is the active management of supply chain activities to maximize customer value and achieve a sustainable competitive advantage.

Supply chain activities cover everything from product development, sourcing and production to logistics, as well as the information systems needed to coordinate these activities.”*

The organizations that make up the supply chain are “linked” together through physical flows and information flows, forming partnerships.



*The Council of Supply Chain Management Professionals (CSCMP)

Technology: Platoon Trucks and Driverless Cars and Trucks

- In April 2016 Wirelessly connected platoons drove through Sweden, Germany, Belgium and the Netherlands <http://newatlas.com/eu-truck-platooning-challenge-success/42714/>
- Ford Announces release of fully autonomous vehicle in 2021. <http://newatlas.com/eu-truck-platooning-challenge-success/42714/>
- Federal Driverless Vehicle Guidelines were released September 20, 2016
- Select states have guidelines for testing automated trucks.
 - Arizona, California, North Dakota, Florida, Michigan, DC

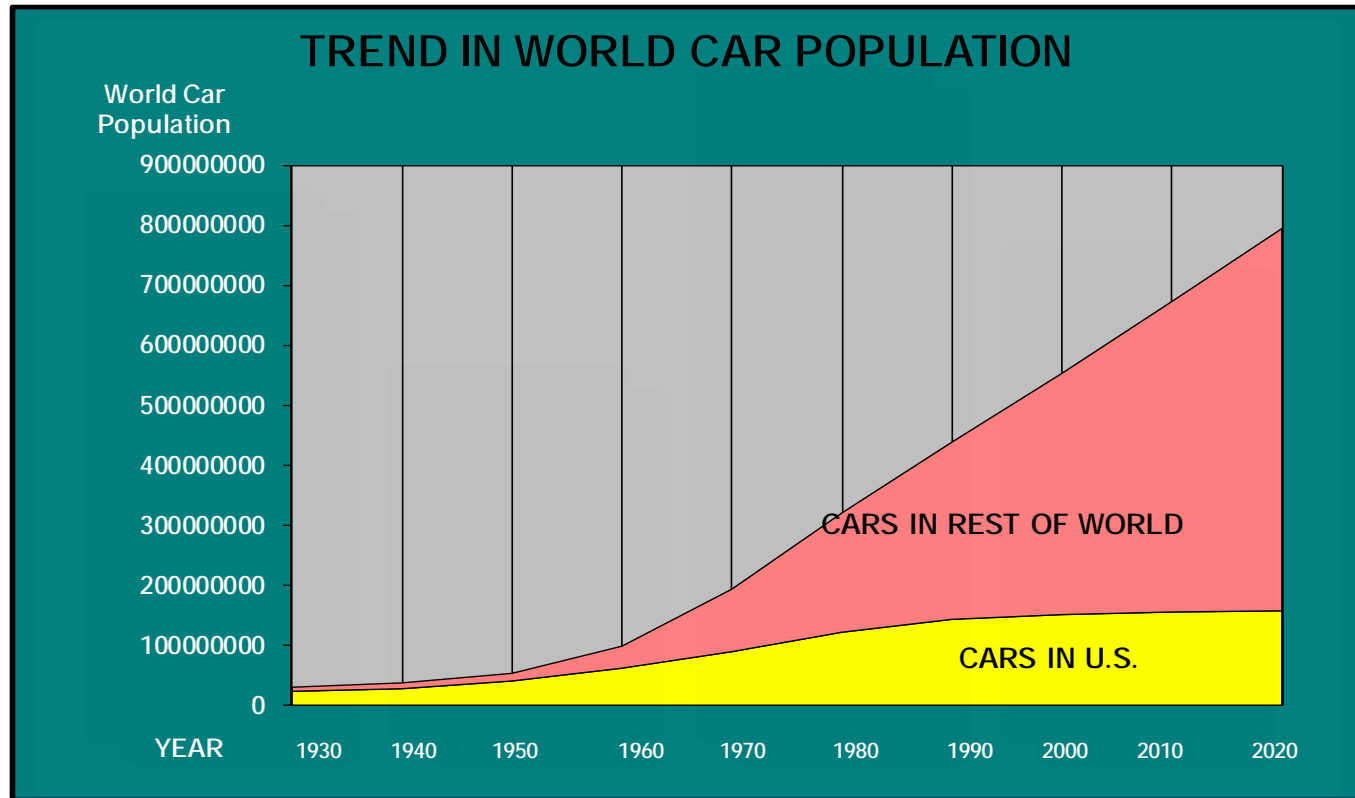
- **“Robots could replace 1.7 million truck drivers in the next decade”** (Transport Topics October 3, 2016)





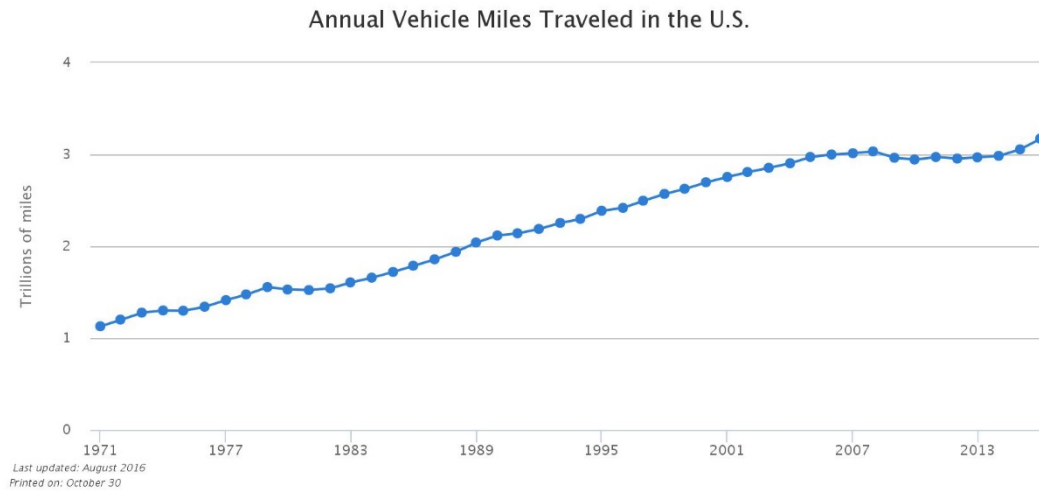
World Car Population

Developing World = 300% Increase Between 1995 & 2020



Our Auto Use is Changing

- **Energy Costs impact Vehicle Miles Traveled (VMT)**



We are using more fuel efficient cars = less gas tax revenue

Vehicle Type	1980	1993	2014	2040
Passenger car	24.3 MPG	28.4 MPG	36.4 MPG	?
Light truck	18.5 MPG	21.0 MPG	26.3 MPG	?

Changing Demographics

- **The US population will grow by another 129 million people by 2050.** <https://www.census.gov/prod/2010pubs/p25-1138.pdf>
 - That is equal to almost 60 new Twin Cities Metropolitan areas
 - We may be unable to build enough roads if we continue suburban sprawl. Increased efficiency will help to minimize gridlock.
- **The U.S. population is aging.**
 - More baby boomers will have transportation accessibility needs
- **Millennials are seeking out quality urban living options**
 - Not wanting to be car dependent, access to transit, the outdoors and cultural diversity.



US Department of Transportation
Federal Highway Administration
Office of Freight Management and Operations
Freight Analysis Framework

Estimated Average Annual Daily Truck Traffic

(2020)

Truck Volume Scale



Energy and the Environment

- **There will be constant pressure to reduce the environmental footprint of all modes of transportation.**
 - Increase petroleum fuel efficiency (higher MPG)
 - Reduce congestion – traffic timing, More HOV lanes, tolls for single passenger cars
 - Alternative fuels – electric, natural gas, bio-fuels
 - Ride sharing – Uber...????...
 - Increased use of improved transit systems
 - Corporate and public rewarding of “green transporters”
- **Global Warming Impacts on Transportation**
 - More frequent and powerful storms damaging infrastructure
 - Great Lakes water levels may be impacted (Three options)
 - Reduction in the use of Coal for electrical energy production



Intermodal Growth Measured in

Second Quarter Totals

	2015	2016	Change
Trailers	407,558	291,065	-28.6%
Domestic Containers	1,767,806	1,827,851	3.4%
All Domestic Equipment	2,175,364	2,118,916	-2.6%
ISO Containers	2,371,924	2,152,246	-9.3%
Total	4,547,288	4,271,162	-6.1%



Source: IANA Intermodal Market Trends & Statistics Report

Lots of Infrastructure = Lots of Upkeep Costs

- Statewide, 42 percent of Wisconsin's major locally and state-maintained roads and highways are in mediocre to poor condition, while 39 percent are in fair condition and 19 percent are in good to excellent condition.*
- Driving on deficient roads costs Wisconsin motorists a total of \$6 billion annually in the form of additional vehicle operating costs (VOC), congestion-related delays and traffic crashes.*

Location	VOC	Congestion	Safety	TOTAL
Madison	\$974	\$911	\$187	\$2,072
Milwaukee	\$861	\$987	\$212	\$2,060
Wisconsin	\$3.2 Billion	\$1.7 Billion	\$1.1 Billion	\$6 Billion

Revenue for infrastructure upkeep and improvements

7/27/2016, Milwaukee Journal Sentinel – The state faces a nearly \$1 billion gap over two years on transportation funding. <http://archive.jsonline.com/news/statepolitics/wisconsin-faces-nearly-1-billion-shortfall-on-roads-b99769145z1-388390361.html>

Fees based on use – Motor fuel taxes, tolls, tire excise taxes

Fees based on existence: registration

Federal cost share from federal taxes

Costs now exceed income from these revenue sources.

Other Funding Options

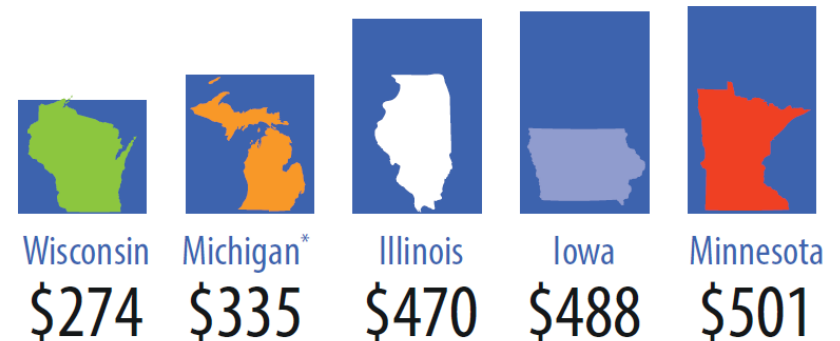
Mileage tax – tracking vehicle use

State Bonds

Use of General Revenue Funds

ANNUAL COST TO DRIVE Compared to Our Neighbors

Registration Fees and Motor Fuel Taxes



Source: Wisconsin Department of Transportation

*An estimated \$404/year in 2017. Michigan passed a funding package in November 2015 which increases the gas tax by 7.3 cents per gallon and the registration fee by 20% in 2017.

Predictions

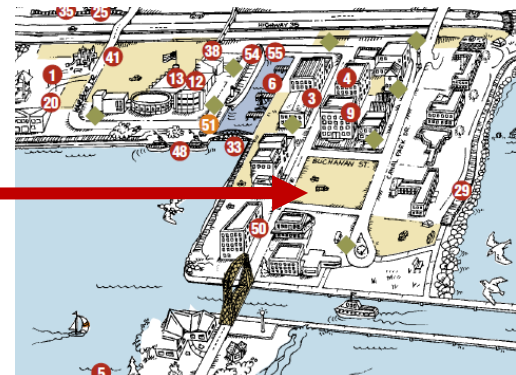
- Supply chain management will increasingly be adopted.
- Urban populations will grow and the demand for transit will increase.
- Congestion will increase especially if suburban sprawl continues.
- The use of truck platooning and “automated” vehicles will grow.
- Fuel efficiency and alternative fuel use will increase for highway vehicles.
- Intermodal transportation will continue to grow and regions that have access to it will have a competitive advantage.
- Expanded use of marine transportation will occur where cost-effective.
- We citizens will need to exert the political will to find funding options to maintain and improve our transportation infrastructure if we are to continue to have a high quality of life and be globally competitive.

Concepts for Transportation Improvement Opportunities in Our Region

- **Highway**
 - Platooning
 - Commuting
 - Tourism
- **Transit**
 - Technology
 - Appeal
- **Air**
 - Costing Protocols
 - Shuttle Service
- **Marine**
 - Extended Service
 - Cruising
 - Water taxi
- **Pipeline**
 - Pipeline monitoring
 - Risk Management
- **Rail**
 - Passenger
 - Intermodal

Highways

- **Consider developing regional truck platooning corridors.**
 - I-35 and U.S. Highway 53
- **Continue to explore options for ridesharing.**
 - Development of apps to connect regional users
 - Ride share parking lots
- **Encourage the use of bus transportation and other high occupancy vehicles for tourist events to reduce congestion and extend the life of infrastructure.**
 - Premium parking locations for HOVs
 - Tour bus parking locations during peak events – Tall Ships



- Increase

- A
lo

- C
b



at bus

nfort

Solar Powered Bus Stop in Florence Italy

The city of Florence, Italy has the EyeStop interactive, solar-powered bus stop.

The bus stop was developed by MIT's SENSEable City Lab.

The bus stop will have a touch sensitive eINK and screens that can deliver information including bus trips, interactive maps, surf the web, and use mobile devices as an interface with the bus shelter.



<http://www.greenlaunches.com/architecture/interactive-solarpowered-bus-stop-design-for-florence.php>

Air

- Our scheduled airline service is essential to attracting business to the region – We need to expand use of the airports to retain them.
 - Consider having regional transit (Arrowhead) buses stop at airports
 - Create regional APPS that allow potential riders to find rides to airports
 - Adopt cost-comparison protocols for businesses – do not assume MSP is less expensive when all costs are considered

Travel options from Superior, WI	Shuttle fare round trip	hours Travel Time @ \$25 per Hours	2 hours Airport line wait Time @ \$25 per Hours	Roundtrip miles at \$.45 per mile	Parking 4 days Lindberg General or Duluth airport	Total Cost
Shuttle to MSP	\$78	8 hours = \$200	2- \$50	20 miles = \$9		\$337
Driving To MSP		7 hours = \$175	2- \$50	350 miles = \$157	\$110	\$492
Driving to DLH		1 hour = \$25	1 - \$25	40 miles = \$18	\$52	\$120

Marine & Pipelines

Global Warming is resulting in longer shipping seasons

New supply chain options

Container movement

Cruise vessels: Great Lakes voted in top three cruise locations

Terminals to serve a variety of vessels

Community partnerships to support cruises

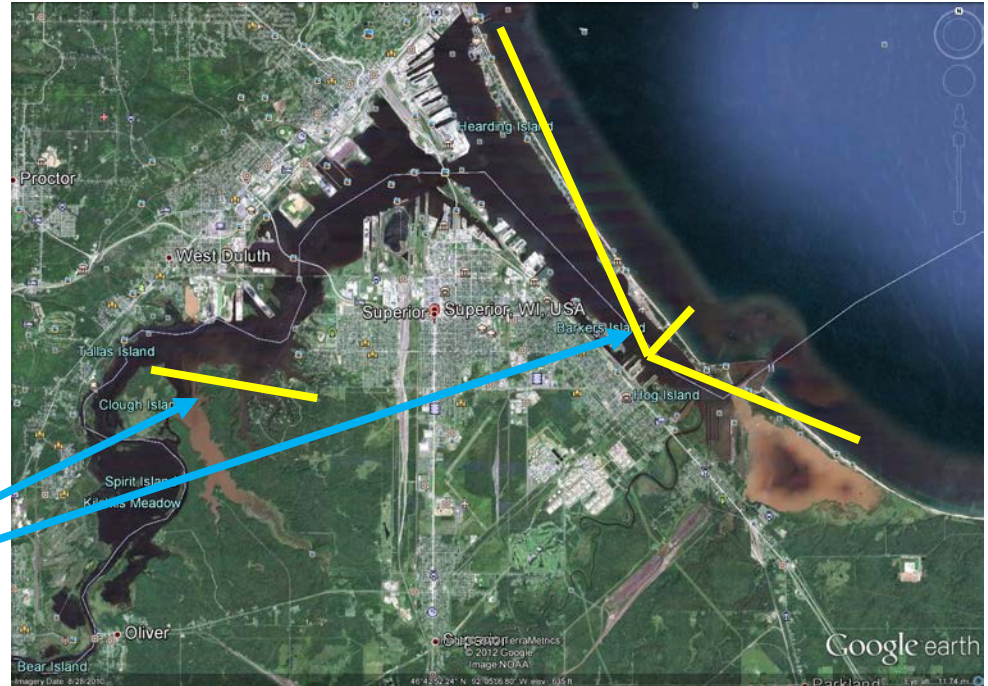
Water Taxis

Linking bike trails in the region

Pipelines

Drones to monitor pipelines

Software integrating data for risk management



Rail

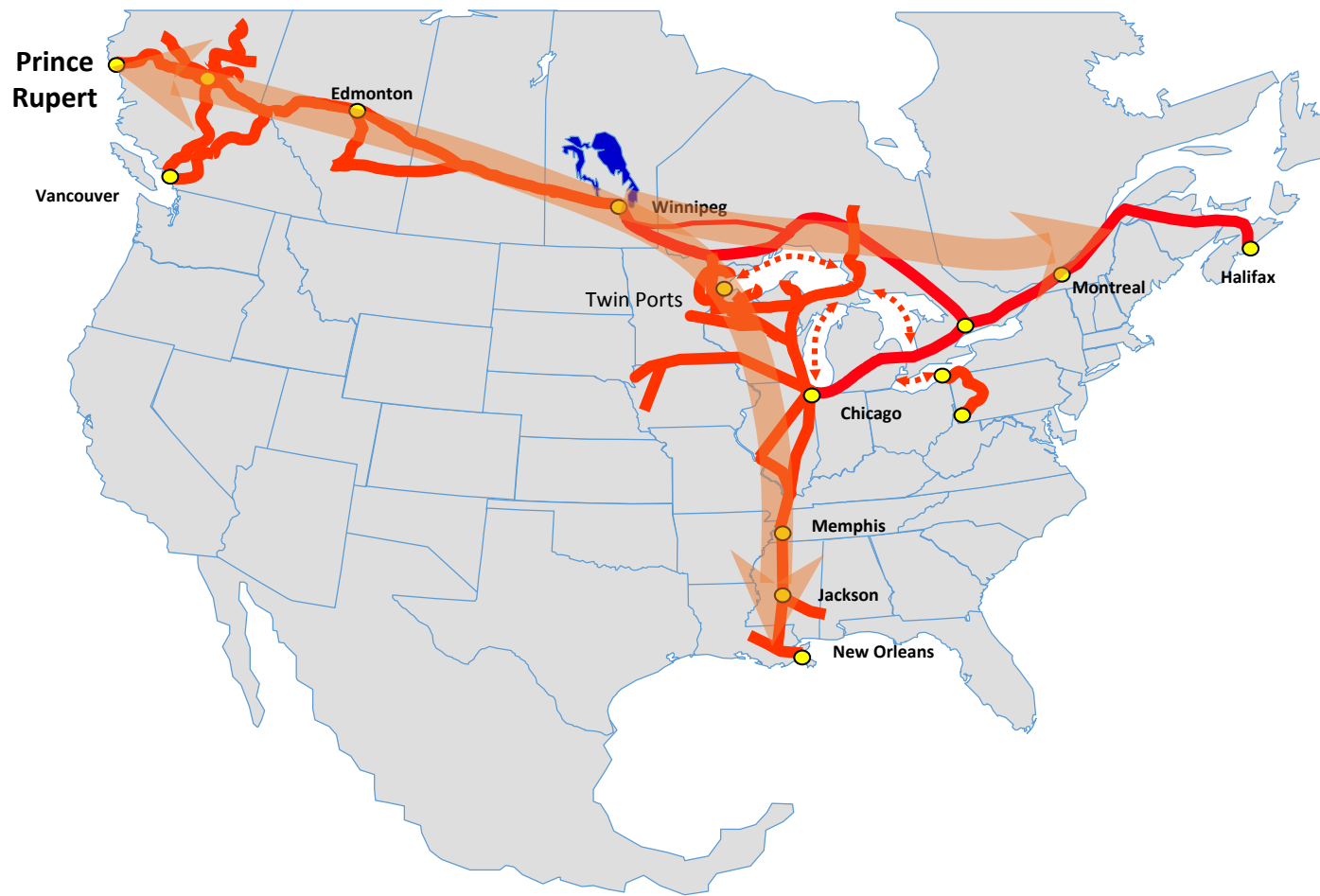
- **Passenger**

- Northern Lights Service (NLX) service: Twin Ports and Twin Cities with stops in Hinckley
- Plan for modal interchange with transit, rideshare, taxis, hotel shuttles and bikes.
- Consider stowage space for carrying bikes on the train.
- Explore options to reduce construction cost, increase overall speed and increase frequency of service with the same locomotive and car assets by stopping in Superior and not going to Duluth.

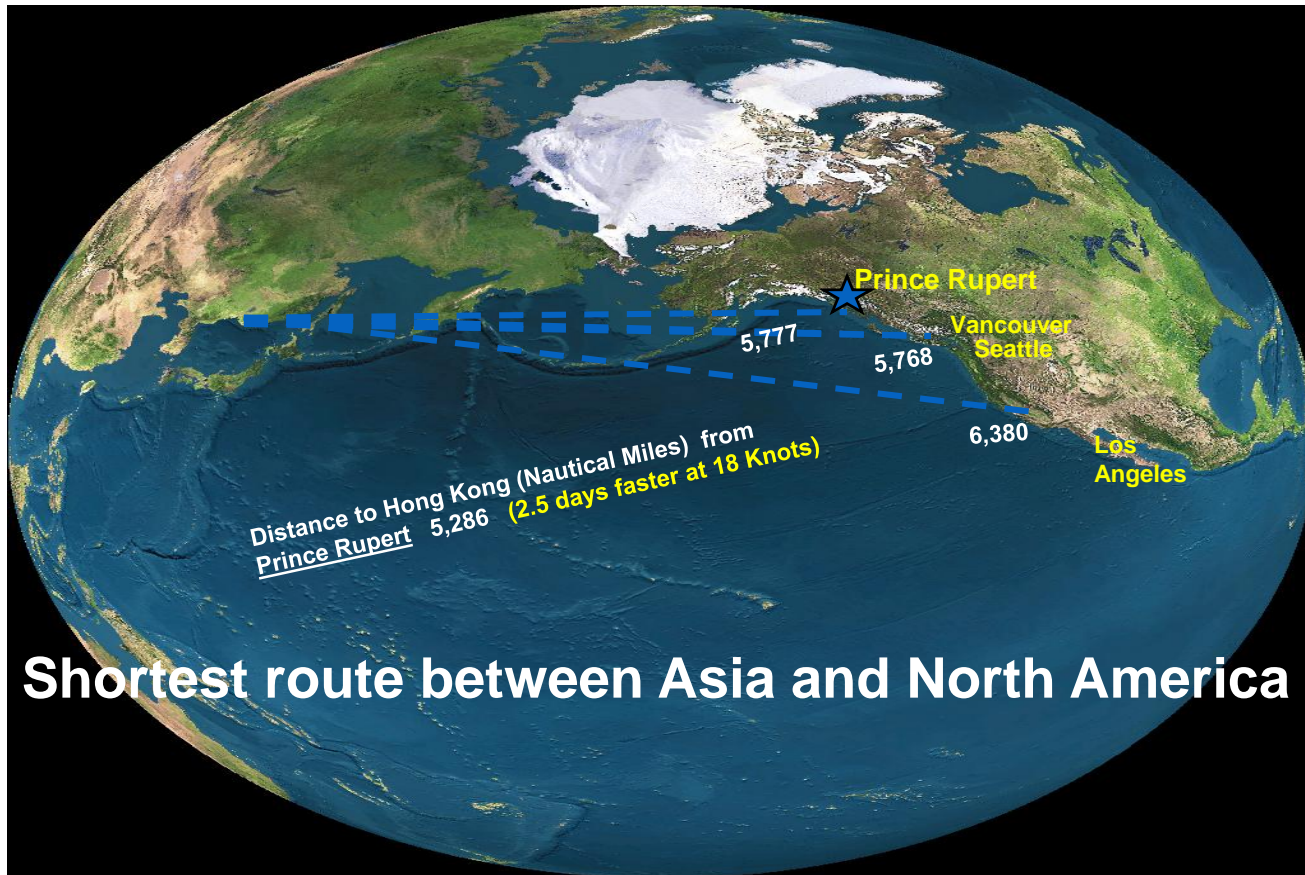
- **Intermodal**

- Our region straddles CN's main line between New Orleans and Canadian gateways of Vancouver, Halifax and Prince Rupert. CN intermodal trains now operate on this route.
- Linking into this intermodal route would provide a competitive advantage in trading with Asian markets.

THE REGION HAS DIRECT RAIL SERVICE TO PRINCE RUPERT, CANADA VIA CN RAIL



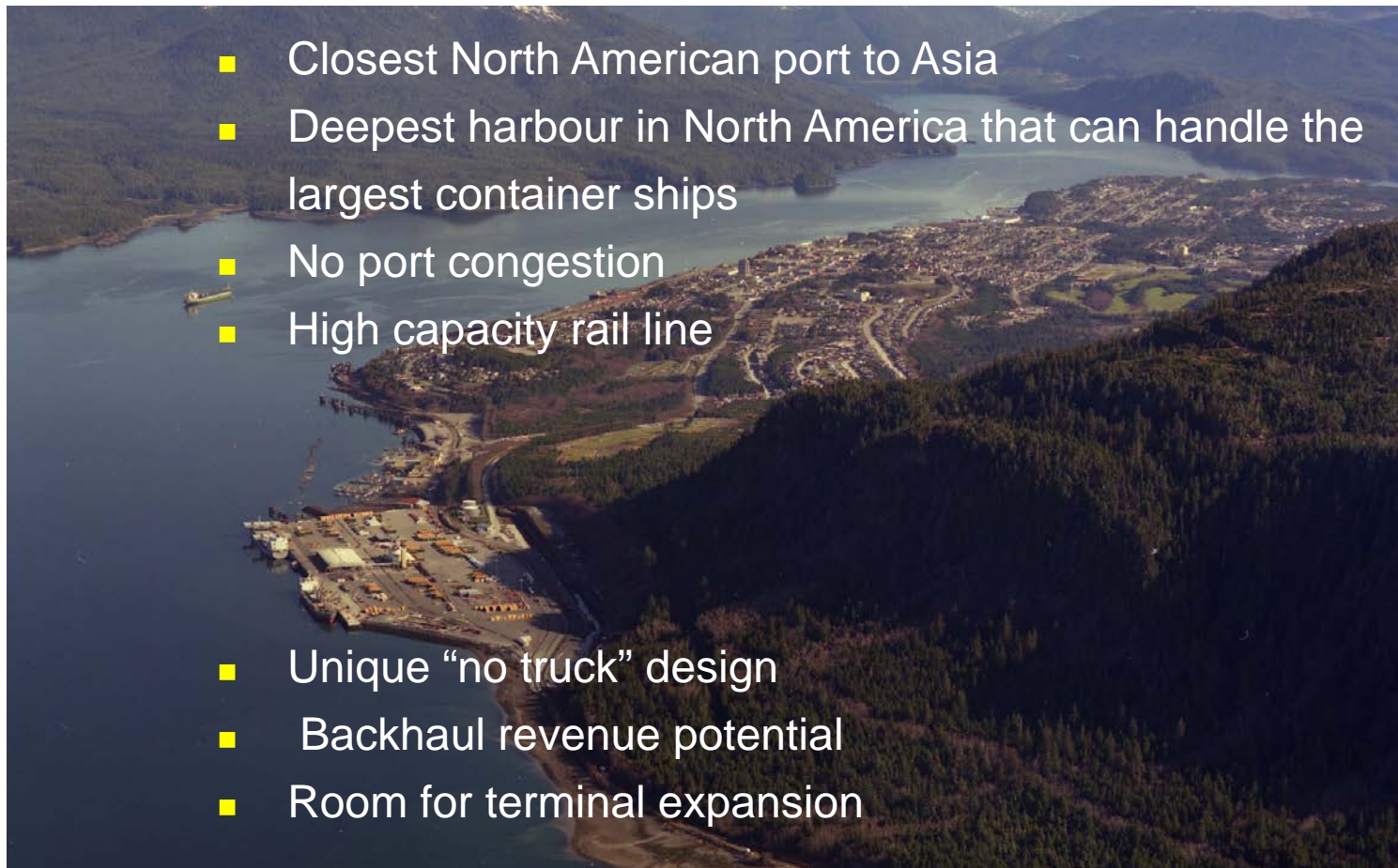
THE PORT OF PRINCE RUPERT'S GEOGRAPHIC ADVANTAGE



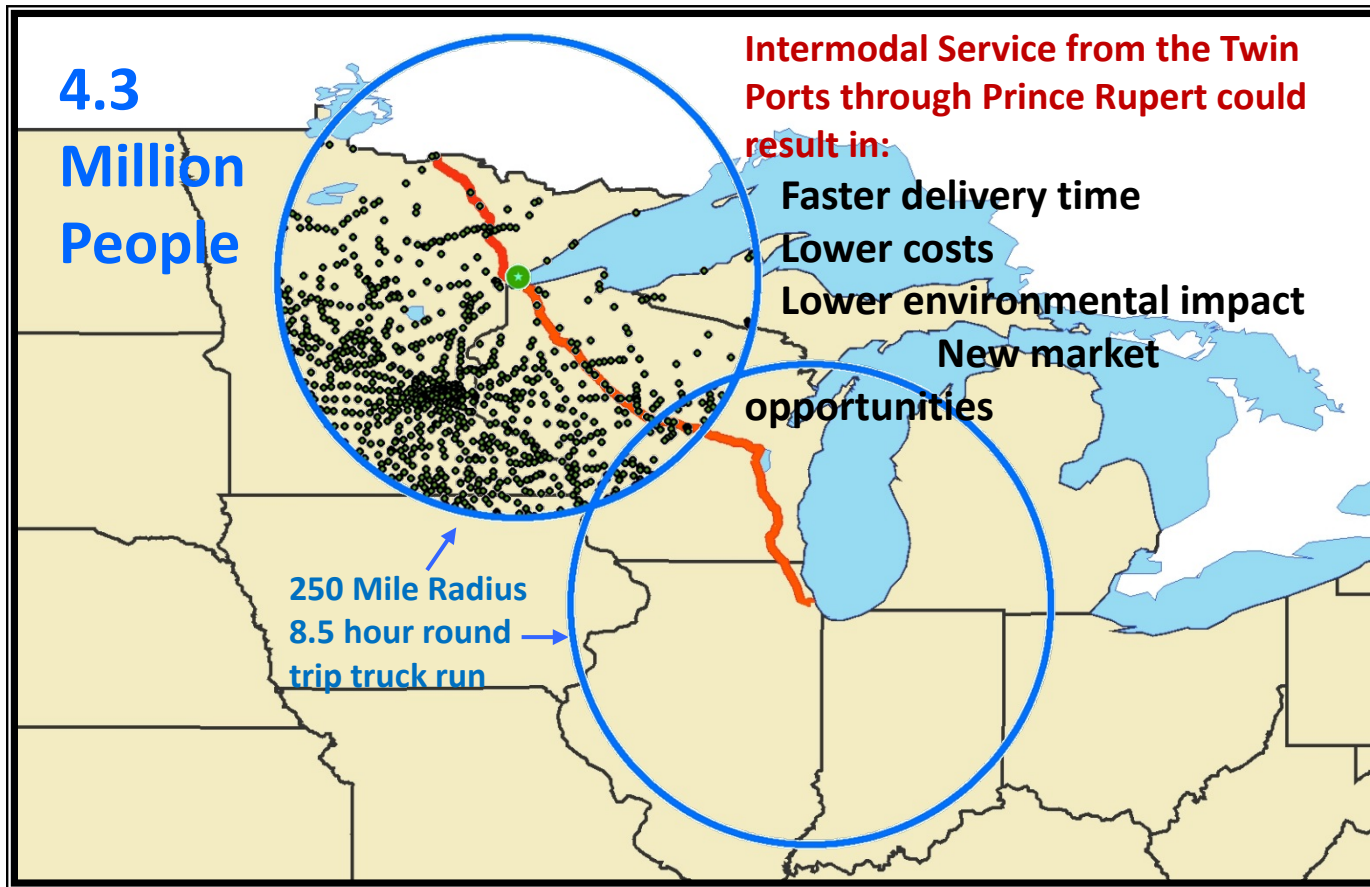


Twin Ports Intermodal Cargo to Asia via Prince Rupert

- Closest North American port to Asia
 - Deepest harbour in North America that can handle the largest container ships
 - No port congestion
 - High capacity rail line
-
- Unique “no truck” design
 - Backhaul revenue potential
 - Room for terminal expansion



Twin Port Intermodal Terminal Marketing Region



Is There a New Market Opportunity for Our Region in China?



Processed Cheese slices in Beijing, China 10/2014 \$8.30 per pound



1.5 % UHT Milk in Beijing, China 10/2014 \$11.67 per gallon

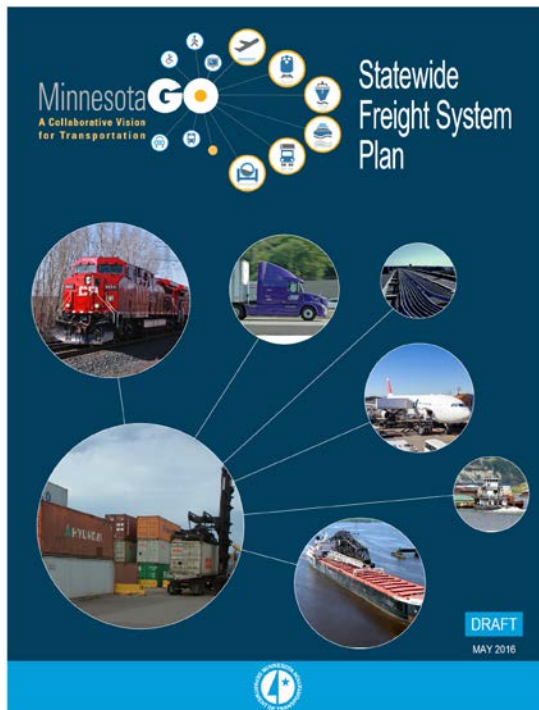
Operating a Sustainable Food Service Cluster

- **Bring in prepared foods and raw materials from our region to be loaded for export at an intermodal terminal**
 - Process raw materials in an environmentally sound manner including packaging designed for China market.
 - Transload where needed from 53 foot trailers, store, consolidate and load into ISO containers.
 - Export to China market via Prince Rupert and export select container cargo to Europe and Africa via Seaway.
- **Import finished or semi-finished products**
 - Store and provide value added processing where needed.
 - When possible transload directly from ISO container to 53 foot trailers.
 - Ship to Twin Cities and other US markets.

Transportation Goals for The Region

- 1. Improve the transportation systems for our existing businesses.**
- 2. Become a model of transportation (Supply Chain) efficiency.**
- 3. Enhance and develop transportation systems that are a magnet for new businesses and people.**
- 4. Become a respected source of transportation professionals, education and research.**
- 5. Protect our precious natural resources as we make rational transportation decisions.**
- 6. Talk about transportation at clubs, associations and groups.**

We Are Planning for the Future of Transportation



[http://www.dsmic.org/documentstore/PlansandStudies\(LongRange\)/2040LRTPUpdate/Connections2040_LRTP_FINAL.pdf](http://www.dsmic.org/documentstore/PlansandStudies(LongRange)/2040LRTPUpdate/Connections2040_LRTP_FINAL.pdf)



<http://wisconsindot.gov/Pages/projects/sfp/chapters.aspx>

<http://www.dot.state.mn.us/planning/freightplan/pdf/mn-statewide-freight-system-plan.pdf>



Thank you
Questions? www.uwsuper.edu

Photo by Chris J. Benson

The Transportation Simulation Experience

IANA

Midwest Energy Resources
A DTE Energy Company

UNIVERSITY of WISCONSIN
Superior

The University of Wisconsin - Superior Transportation and Logistics Research Center is holding a day of transportation simulation. Attendees will be shown four modes of transportation on the simulator, learn about intermodal transportation and supply chain, and learn about using drones in inspections. There will be drones to test out as well!

For: 12 High School Students - Space is very limited!

Cost: \$10 non-refundable fee

When: Saturday, December 3rd, 2016

Time: 9am until 4pm - Lunch is provided!

Where: Erlanson 106

Please register here:

www.uwsuper.edu/tlresearchcenter

Call Cassie Roemhildt at (715) 394-8372 with any questions
or e-mail trn@uwsuper.edu.



TEXT YOUR QUESTIONS
at any time during this presentation to

218.721.8318

PARTICIPATE

To participate in the next round of surveys, please complete the form on your table and leave it on the registration table as you leave.



We are seeking business principals to participate in on-going, future business confidence survey collection efforts.

If you are willing to help out the student research team and provide less than 5 minutes of your time, please fill out this form and return it to a REIF Steering Committee Member before you leave today.

Name: _____

Position: _____

Organization/Company: _____

Email: _____

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Midwestern Chapter

SAVE THE DATE

THE NEXT REGIONAL ECONOMIC INDICATORS FORUM

Tuesday, March 28, 2017

Lake Superior Ballroom, DECC

Special Topic – Tourism Marketing and Promotion

