

**Retail + Freight + Robots =
land use revolution**

Our land use tells us about our society...

CLEVELAND'S SMART MILE TRACK

Randall Park





Randall Park Mall at opening - 1976



Fulfillment center at Randall Park Mall site - 2018





Euclid Square Mall rendering – 197x



Euclid Square Mall interior rendering and photo



Fulfillment center at Euclid Square Mall site - 2018



The 1940s = **JOBS**

The 1970s = **RETAIL**

The 2010s = **FREIGHT**

The 2040s = **???**



The 1940s = JOBS

The 1970s = **RETAIL**

The 2010s = FREIGHT

The 2040s = ???



The 1940s = JOBS

The 1970s = RETAIL

The 2010s = **FREIGHT**

The 2040s = ???



The 1940s = JOBS

The 1970s = RETAIL

The 2010s = FREIGHT

The 2040s = ???

Assumptions:

- **Automation will be a primary driving force in shaping the immediate future**
- **Land use and economics will be at the center of those near-term impacts for cities**

01

Retail

02

Freight

03

Jobs

04

What to do about it

Introductions

**YOUR
PRESENTERS**



Jason Sudy

National Lead, Transportation
Technology Planning
HDR



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AV/CV Transportation Planner
HDR



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Principal
Urban Decision Group

Here in Spirit

Retail changes = land use revolution

01

Questions:

- **What percentage of goods do you believe are currently purchased online?**
- **What is the difference in land use between shopping centers and fulfillment centers?**

Our definition of **retail** for today's discussion:

Our definition of **retail for today's discussion:**

The sale of goods to the public in relatively small quantities for use or consumption rather than for resale.



amazon
 ***Prime***

prime now



WHOLE
FOODS[®]

M A R K E T



GRUBHUB

Overbuilt Retail

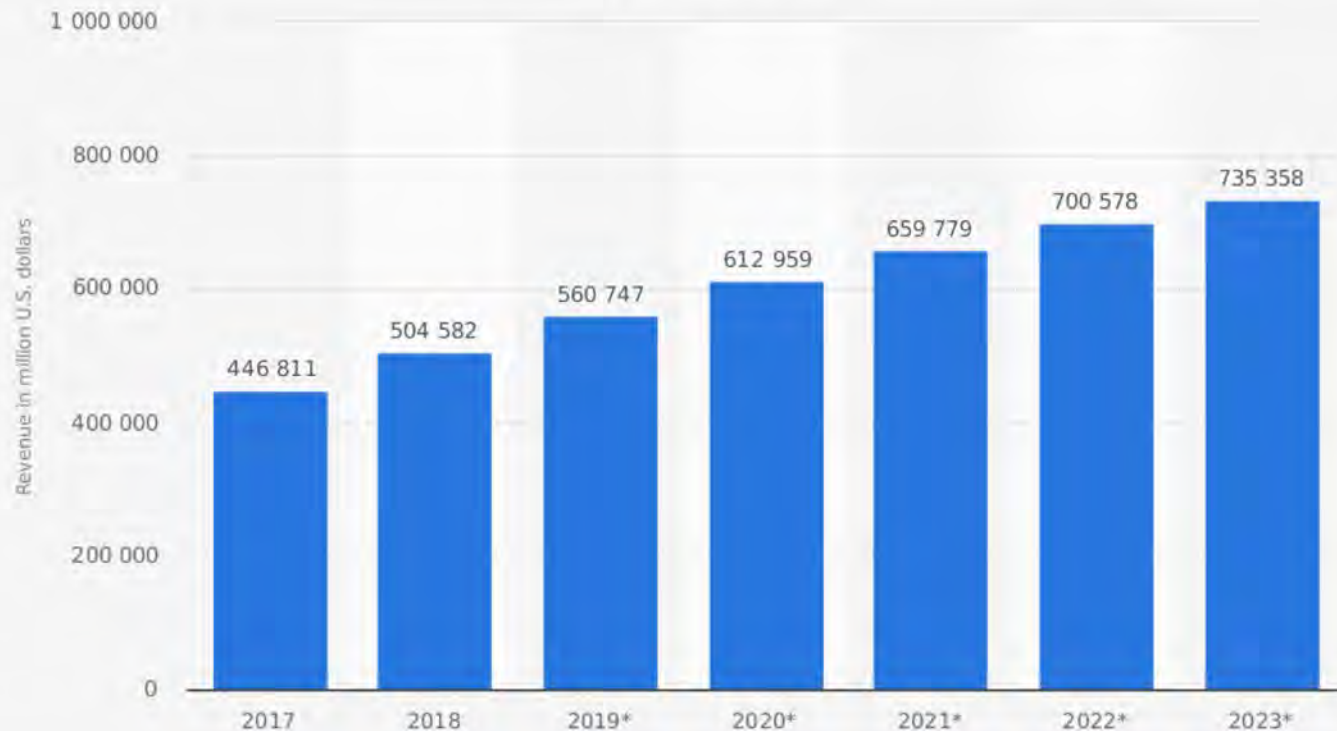
**Changing Retail
Business Model**

Technology

e-commerce

A system for the buying and selling of goods and services using the Internet as the main means of exchange.

Retail e-commerce sales in the United States from 2017 to 2023 (in million U.S. dollars)



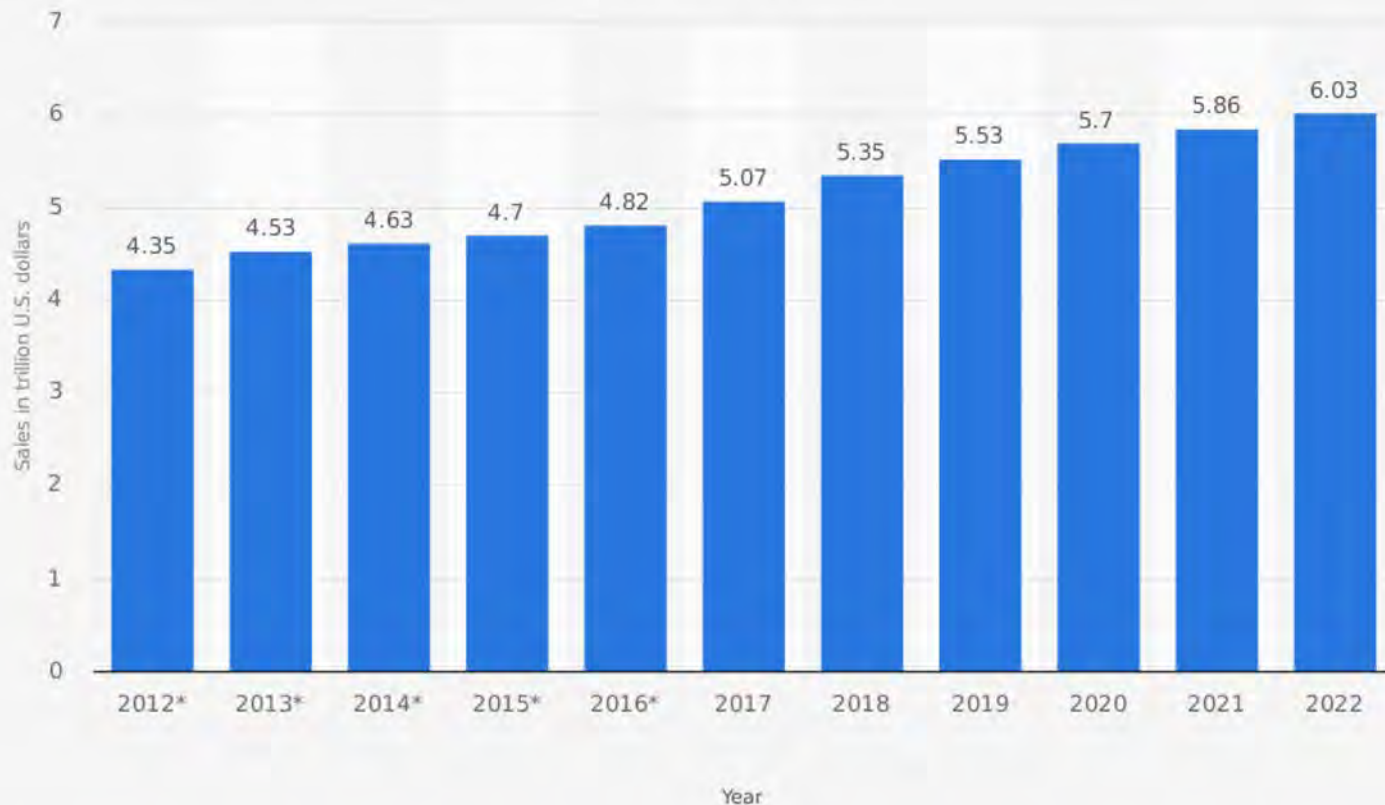
Sources

Statista DMO; Statista
© Statista 2019

Additional Information:

United States; Statista DMO; 2017 to 2018

Total retail sales in the United States from 2012 to 2022 (in trillion U.S. dollars)



Sources

eMarketer; US Department of Commerce
© Statista 2019

Additional information:

United States; US Department of Commerce; 2012 to 2019; excludes travel and event tickets





Guthrie

P.M. LIQUOR
J&M MARKET

YUM & YUM
DONUTS
OPEN 24 HOURS

MATTRESS STOP
PAYDAY ADVANCE

Putney's
MATTRESS
(510) 837-8378



PIZZA

PA

P.M. LIQUOR MARKET



MATTRESS STOP
PAYDAY ADVANCE

GIANT EAGLE

FOOD & DRUG

THE PARKING LOT IS
EXCLUSIVELY FOR THE
CUSTOMERS OF THIS STORE
ALL OTHERS WILL BE TOWED
AT OWNER'S EXPENSE
PULLIVE PROPERTY
No Trespassing


PARKING

ENTRANCE

REST CASH (NOT RESTRICTED)
MORE PERKS.
MORE BUYING

EXIT

STOP



 Huntley

THE SMARTER WAY TO WATCH
reelbox
NEW RELEASE
Movies & TV Shows







- **Neighborhood Center**
- **Community Center**
- **Regional and Super-Regional Mall**

omni-channel sales

A multichannel approach to sales that seeks to provide customers with a seamless shopping experience, whether they're shopping online from a desktop or mobile device, by telephone, or in a brick-and-mortar store.



KOHL'S



WAL★MART

SATISFACTION GUARANTEED

PHARI

ENTER



WHOLE FOODS MARKET

12150

NEW OPEN

WELCOME

Welcome to



CVS/pharmacy

**1 Hour
Photo**





GREEN
BIN



Fire exit

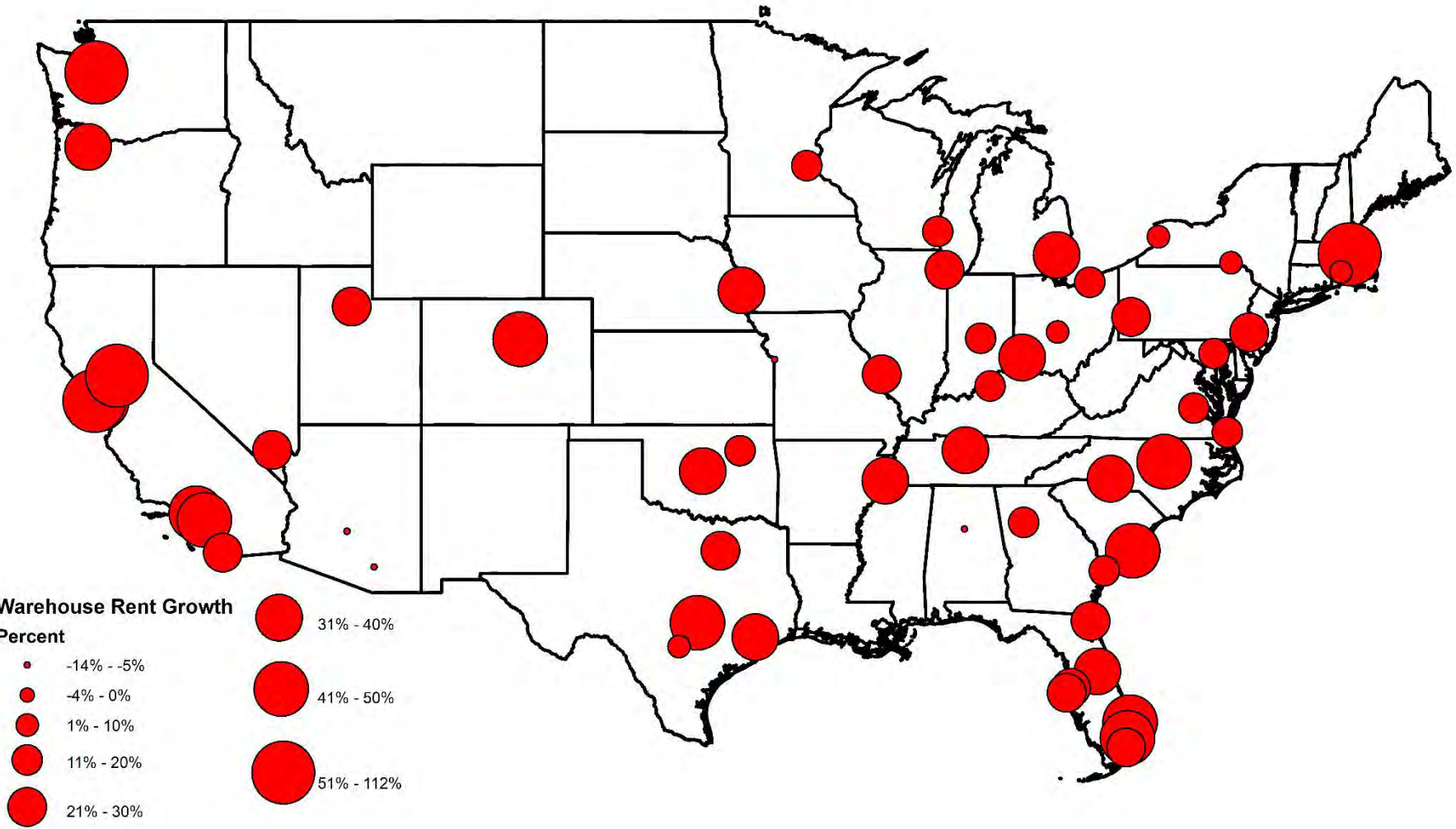
A diagram showing a rectangular floor plan divided into two sections. The left section is a vertical pink rectangle labeled 'STORAGE/ OFFICE'. The right section is a larger horizontal blue rectangle labeled 'FLOOR SPACE'.

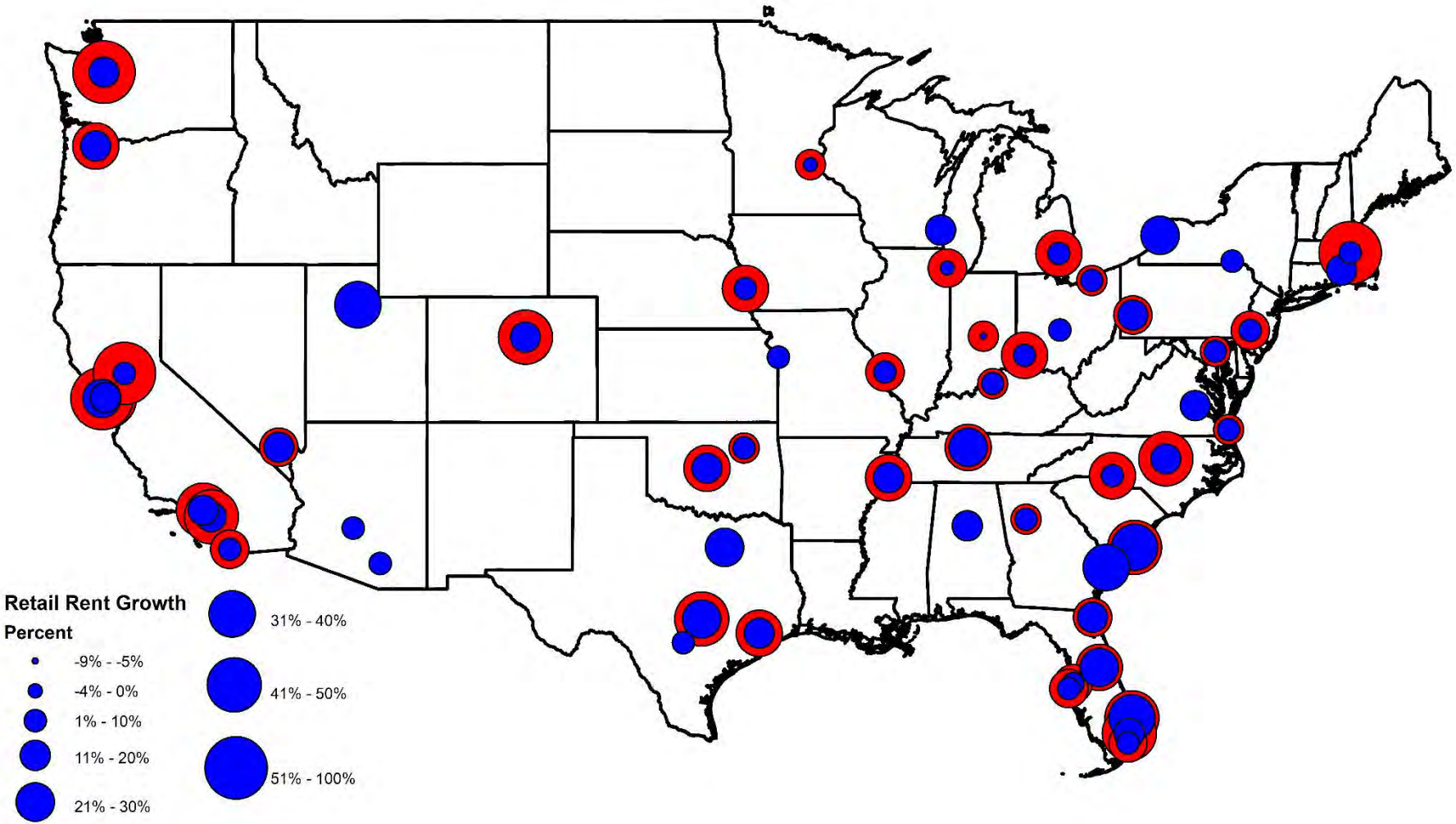
STORAGE/
OFFICE

FLOOR SPACE

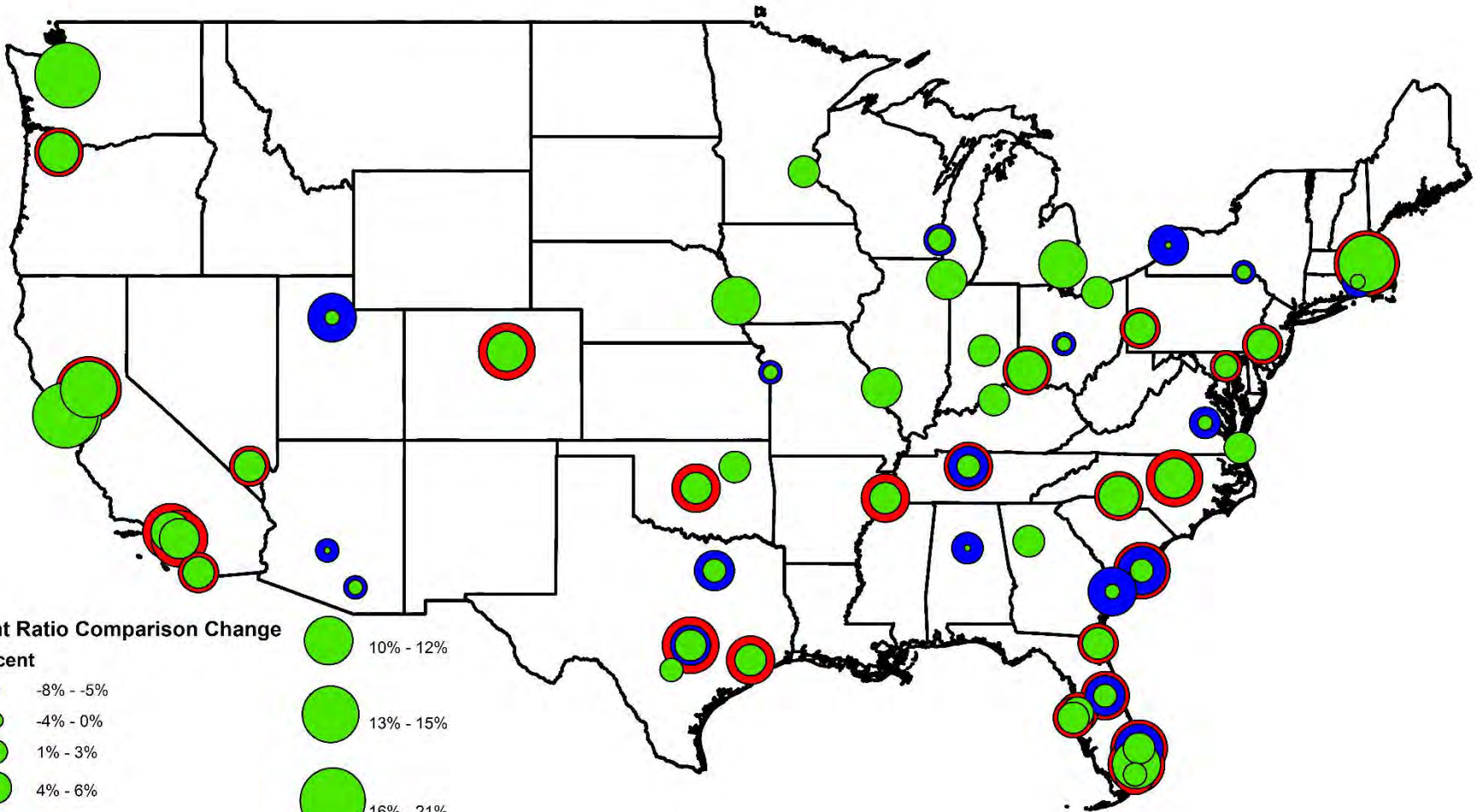
STORAGE/
OFFICE

FLOOR SPACE





	Warehouse Rent				Retail Rent				Warehouse/Retail Ratio		
MARKET	2013	2018	\$ Change	% Change	2013	2018	\$ Change	% Change	2013	2018	Change
Oakland	4.82	10.21	5.39	111.8%	20.73	23.09	2.36	11.4%	0.23	0.44	0.21
Seattle	4.87	9.12	4.25	87.3%	18.15	20.63	2.48	13.7%	0.27	0.44	0.17
San Francisco	6.52	12.00	5.48	84.0%	19.90	25.00	5.10	25.6%	0.33	0.48	0.15
Sacramento	4.44	6.86	2.42	54.5%	16.60	16.97	0.37	2.2%	0.27	0.40	0.14
Boston	5.53	8.41	2.88	52.1%	17.76	19.25	1.49	8.4%	0.31	0.44	0.13
Detroit	4.08	5.62	1.54	37.7%	12.67	13.04	0.37	2.9%	0.32	0.43	0.11
Omaha	4.08	5.62	1.54	37.7%	11.84	12.42	0.58	4.9%	0.34	0.45	0.11
Ft. Lauderdale	6.53	9.18	2.65	40.6%	18.37	20.26	1.89	10.3%	0.36	0.45	0.10
Los Angeles	6.47	9.62	3.15	48.7%	23.40	26.27	2.87	12.3%	0.28	0.37	0.09
Orange County	7.07	10.47	3.40	48.1%	22.52	25.94	3.42	15.2%	0.31	0.40	0.09



**Rent Ratio Comparison Change
Percent**

- -8% - -5%
- -4% - 0%
- 1% - 3%
- 4% - 6%
- 7% - 9%

- 10% - 12%
- 13% - 15%
- 16% - 21%





NURO

Kroger

ClickList

Order your groceries online.

Kroger

ClickList

Order your groceries online.



I am robotics

I am SUBJECT

ALL
vitamin
vitamin
vitamin

ALL
vitamin
vitamin
vitamin

ALL
vitamin
vitamin
vitamin

ALL
vitamin
vitamin
vitamin

ALL
vitamin
vitamin
vitamin

ALL
vitamin
vitamin
vitamin

01
Campbell's
Chicken
Soup

02
Campbell's
Chicken
Soup

03
Fruit
Flavored
Snacks

04
Post
Cereals

05
Campbell's
Tomato
Soup

06
Gratin
Real
Pancakes

07
Crisco
Crisco
Crisco

08
Crisco
Crisco
Crisco

09
Crisco
Crisco
Crisco

LAND USE IMPACTS...

LAND USE

- CHALLENGE: Can you retrofit around a fulfillment center the same way you can retrofit obsolete retail?
- Can you even engage in land use planning for commercial and light industrial uses?



LAND USE

- OPPORTUNITY: If we are overbuilt by as much as 50% AND a significant amount of retail is moving towards omnichannel sales (and deliveries) there is likely to be a significant amount of land available for redevelopment.
- Redevelopment opportunities with lower land cost?
- Redevelopment opportunities will be more widespread than new green field development from this point forward.



Freight changes = land use revolution

02

Questions:

- **How often do you have a package delivered to your residence?**
- **What is your expectation in terms of time for delivery of... basic goods, food, specialty items?**

Our definition of **freight for today's discussion:**

One traditional definition of freight :

Goods transported in bulk by truck, train, ship, or aircraft

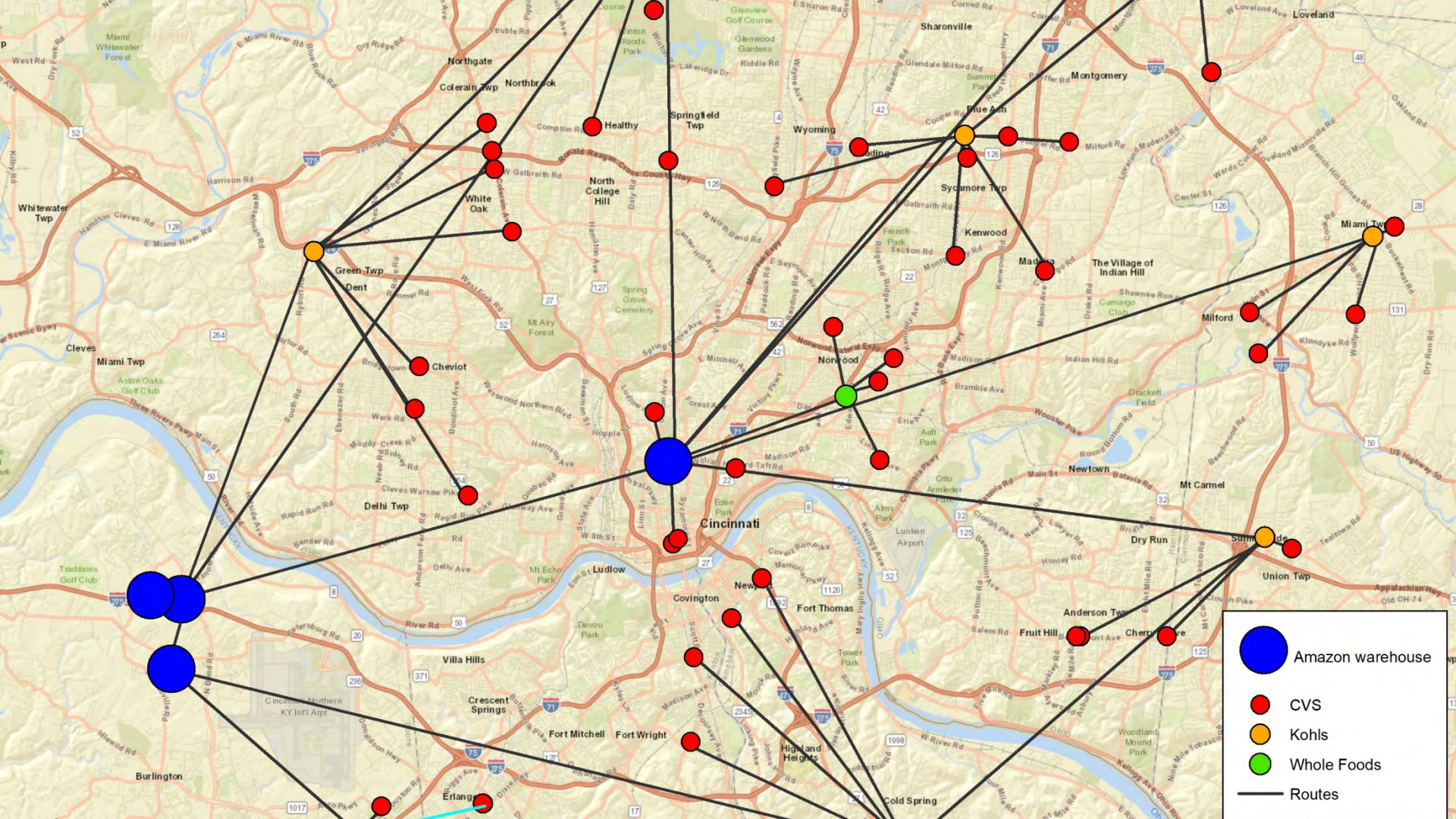
Our definition of **freight** for today's discussion:

Goods transported in bulk* by ~~truck, train, ship, or aircraft~~ devices we might have only recently seen or haven't even thought of yet, in ways we can only hope to predict

** And we need to discuss what "bulk" means in today's context as well*



Last Mile Delivery





Source: maps.cuyahogacounty.us

CITY-SCALE DISTRIBUTION

Finding Opportunities for “instant” network

- Sears
- Macy's

IMPACTS FOR NEIGHBORHOODS:

- Impede large site redevelopment
- Place freight uses in commercial corridor



NEIGHBORHOOD-SCALE DISTRIBUTION

BUILDING/SITE USAGE:

- Flip the percentage of retail floor compared to storage

IMPACTS FOR NEIGHBORHOODS:

- Impede multi-story infill
- Create “truck”-dominated site – loading areas access

POTENTIAL DELIVERY IMPACTS

MAGNITUDE OF INCREASE:

- Could be much greater than anticipated

USC METTRANS Transportation Center:

- Ongoing study – sheds light n intensity
- A 300-unit apartment complex in NJ
- In 2016 there were ???? Parcels delivered



Source: brg.com

POTENTIAL DELIVERY IMPACTS

23,613 PARCELS!

- 65 deliveries/day
- 1.5 deliveries/apartment per week
- From Jan 2015 to Jan 2017, annual growth of 17%
- Most deliveries on weekdays

CLEAR IMPACTS

- If uncontrolled, huge increase in individual trips
- Distribution network changes?



Source: geekwire.com

Freight is no longer behind the scenes in daily life





Weltweite Dienstleistungen

e-drive



02541





Last “Yard”



1737

ORSON'S BELLY →

← ORSON'S BELLY →

CAUTION
WET FLOOR

11/2 MAX
SENT SEP 10/14 7 3/4 1/2 1/2



ring



LAND USE IMPACTS...

LAND USE

CHALLENGE:

- Sites rapidly shifting to new set of uses – impacts on communities
- Intrusion of local freight into neighborhood fabric
- New set of trade-offs



LAND USE

OPPORTUNITY:

- More opportunities for mixed use environments that planners aspire to achieve
- Chance to reimagine typical approach to receiving goods
- Interrelationship to new curb management approaches with autonomy is vital
- New set of trade-offs



LAND USE IMPACTS...

What does this mean for land use and planning?

- 1. The direct land use correlated with these areas may change dramatically.**
- 2. New uses may emerge that we do not yet know or understand**
- 3. The effects on secondary uses such as housing could be large**

LAND USE

- OPPORTUNITY: Potential increases in land productivity. We will need less land to do more.



LAND USE

- CHALLENGE: The location of disruption. How do we as planners use the tools at our disposal to pave the way for future industries?
- How can we ease the transition of new employment and industries into our communities?



Jobs changes = land use revolution

03

We should start with a few assumptions.

- 1. We will always be under pressure to find better ways to be more productive.**
- 2. Technology will continue to advance, and do so at an ever-quickenning pace**
- 3. These technologies will be applied to an expanding group of tasks to increase productivity and efficiency**

**The history of employment in America
is one of change.**



In 1850, 60% of the United States workforce was employed in agriculture.

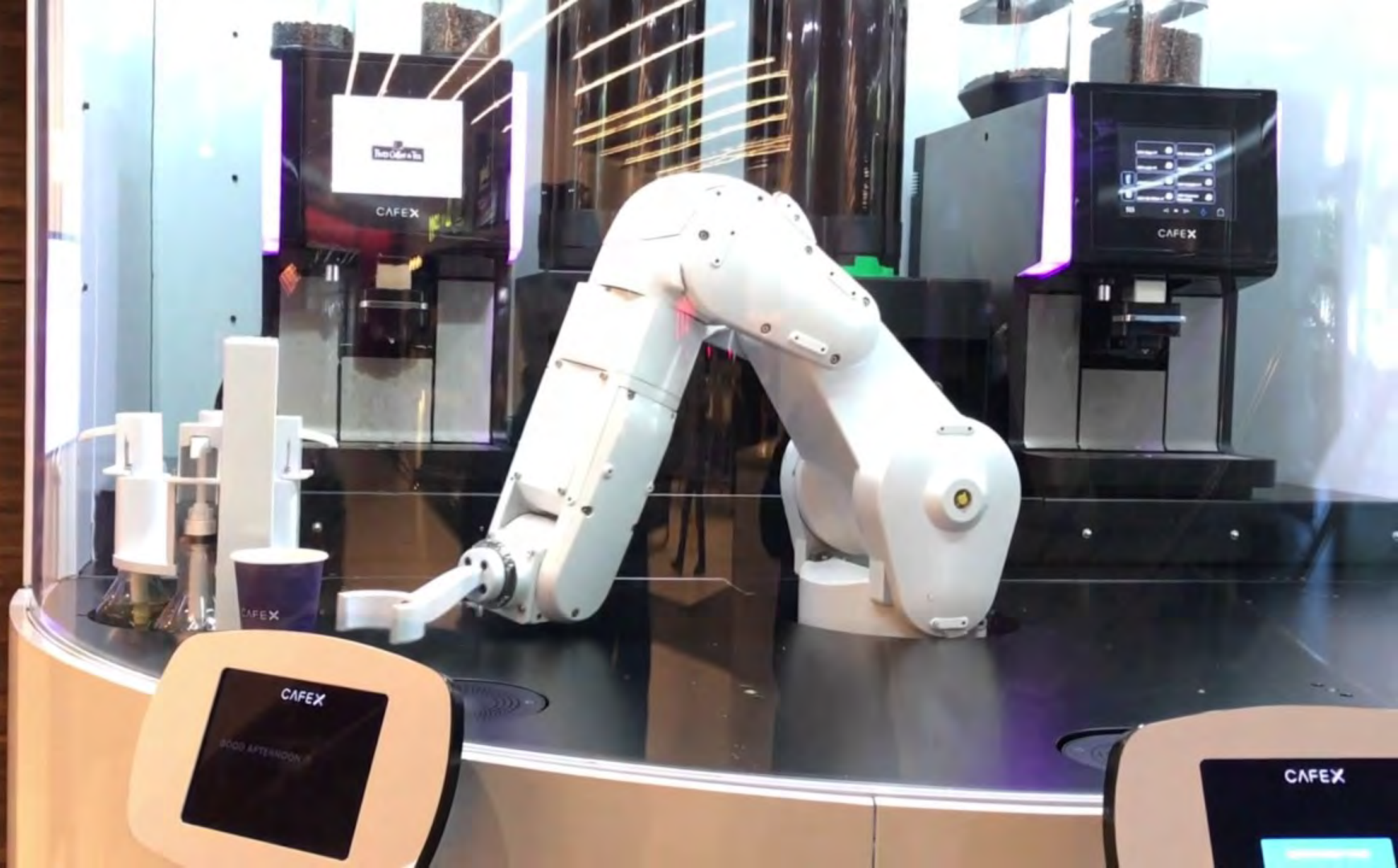


Today that number is 3%



Today that number is 3%
And productivity is 12x higher than in 1950





CAFEX

CAFEX

CAFEX

CAFEX

GOOD AFTERNOON

CAFEX



CHOOSE 2
YOGURTS

+

PICK 2
TOPPING

YOGURT

ENIR

OGHIL

HOLD

your 4
layers of
freshness

enjoy!
a robot
prepare it
for you

\$5.00

Don't
root
your



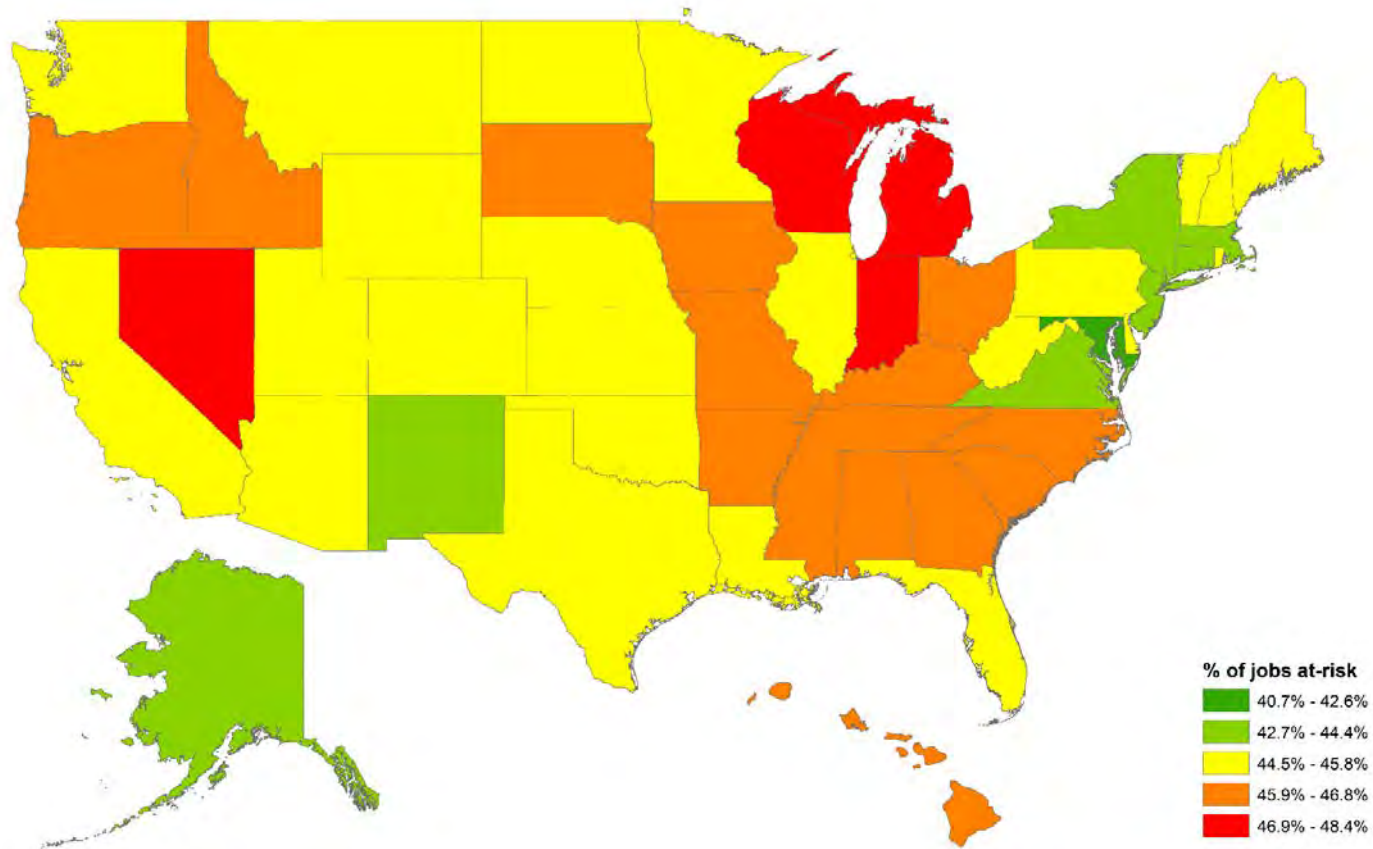
The geography of disruption.

Technical potential for automation of basic labor activities

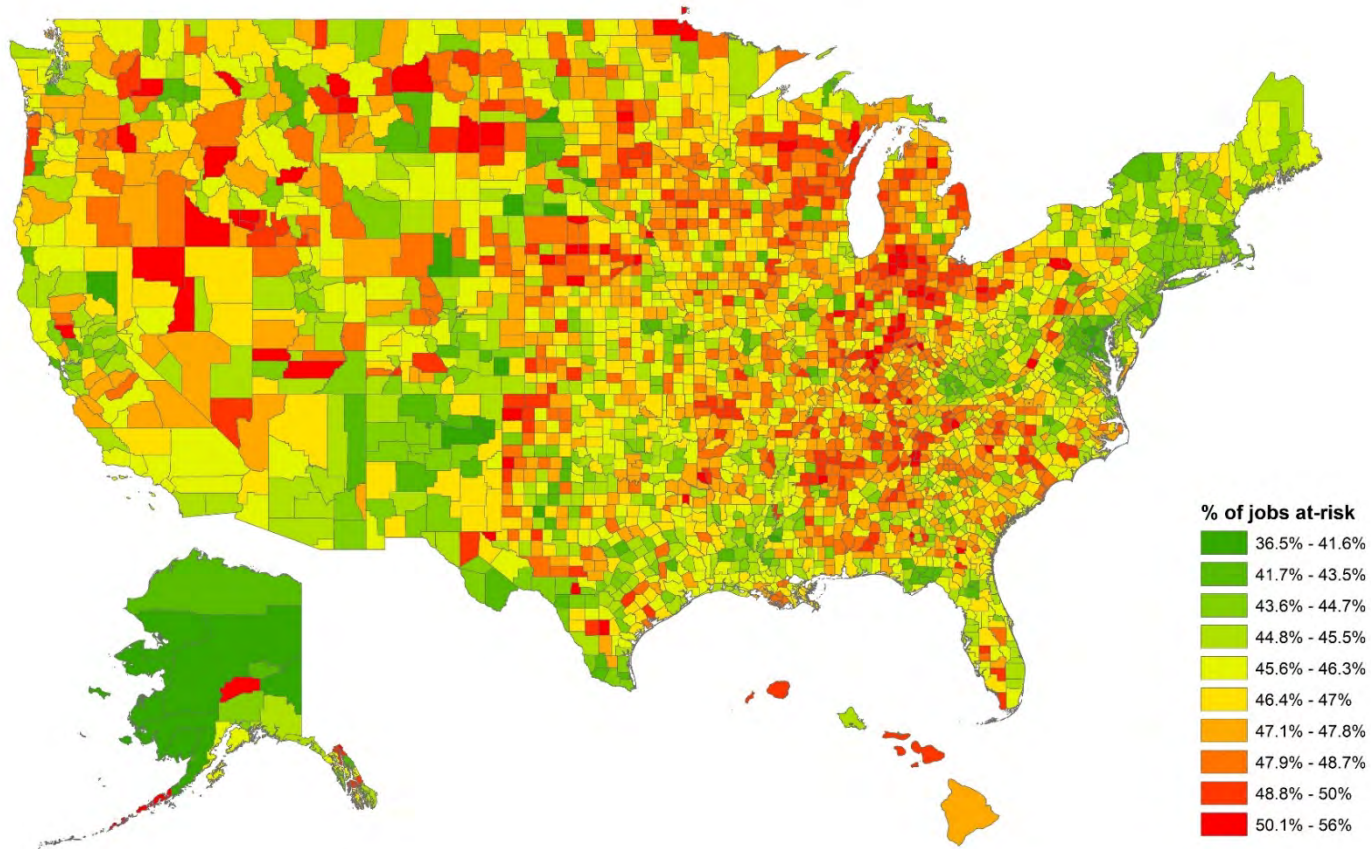
- Predictable physical work (78%)
- Data processing (69%)
- Data collection (64%)
- Unpredictable physical work (25%)
- Stakeholder interactions (20%)
- Applying expertise (18%)
- Managing others (9%)



Percentage of jobs at risk for automation by state



Percentage of jobs at risk for automation by county



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What now?

04

Land Value Impacts

- **Retail** – volume, type and location
(how and where we shop)
- **Freight** – long and short distance fulfillment
(how and where we work and shop)

What Now?

Impacts

- Identify the new set of trade-offs in your community

Advocate

- Make the impacts of these coming changes clear

Act

- Consider new trade-offs in evaluating new development
- Shape regulatory and revenue opportunities

THE REVOLUTION...

- If **commerce** changes the way some predict... will **land use** even matter in the future?