

Massachusetts Statewide Freight Plan

Freight Advisory Committee
Meeting 2

presented to
Freight Advisory
Committee

presented by
Massachusetts Department of
Transportation

Agenda

➤ Introductions

Highway Administrator Thomas Tinlin
Massachusetts Department of Transportation (MassDOT) and
Gabe Sherman, MassDOT

➤ What We Heard Last Time

Highway Administrator Thomas Tinlin (MassDOT)

➤ What Might Happen

John Kaliski and Nathan Higgins, Cambridge Systematics (CS)

➤ Group Exercise

➤ What's Next

Gabe Sherman

➤ Adjourn

A photograph of a Bentley University campus. In the background is a large, multi-story brick building with several tall, narrow windows. A sign on the building reads "LAFAN CENTER THE CONFERENCE CENTER". In the foreground, there is a paved plaza made of red bricks. To the right, a stone wall features a plaque that says "BENTLEY UNIVERSITY". Next to the wall is a large, dark-colored planter box filled with yellow and orange flowers. Several green trees are scattered throughout the scene, and a clear blue sky with some clouds is visible above. The word "INTRODUCTIONS" is written in large, white, italicized capital letters across the center of the image.

INTRODUCTIONS

The freight planning team



- » Highway Division Administrator
Tom Tinlin
 - Chair, Freight Advisory Committee (FAC)



- » Gabe Sherman
 - Project Manager
 - Gabriel.Sherman@dot.ma.state.us



- » Trey Wadsworth
 - Manager of Capital Planning

P O R T S C A P E I N C

Our objectives

- Fulfill all **federal requirements** for State Freight Plans
- Articulate a **vision** for the freight system
- **Raise awareness** of freight's role in the economy
- Use **scenario planning** to address an **uncertain future** and develop **robust strategies**

What we are doing

Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul

Synthesize 30+ reports
Analyze freight data
4 Agency Round Tables
25+ industry interviews

**4 FAC Meetings and
Open Houses**
Scenario planning to
articulate vision, goals,
objectives, and robust
strategies.

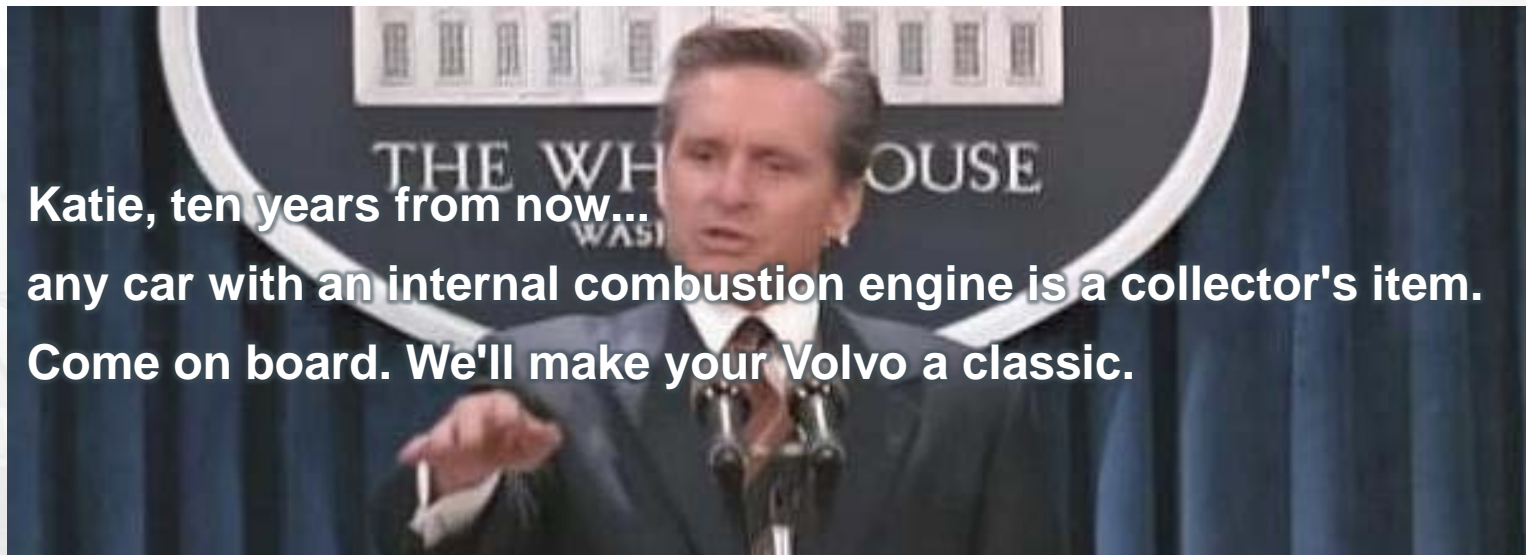
**2017
Freight
Plan**

What we heard last time

- Improve urban freight delivery
- Build modern infrastructure
- Streamline freight policies
- Educate more truck drivers
- Add sufficient truck parking
- Communicate the value of freight

WHAT MIGHT HAPPEN

The future is hard to predict

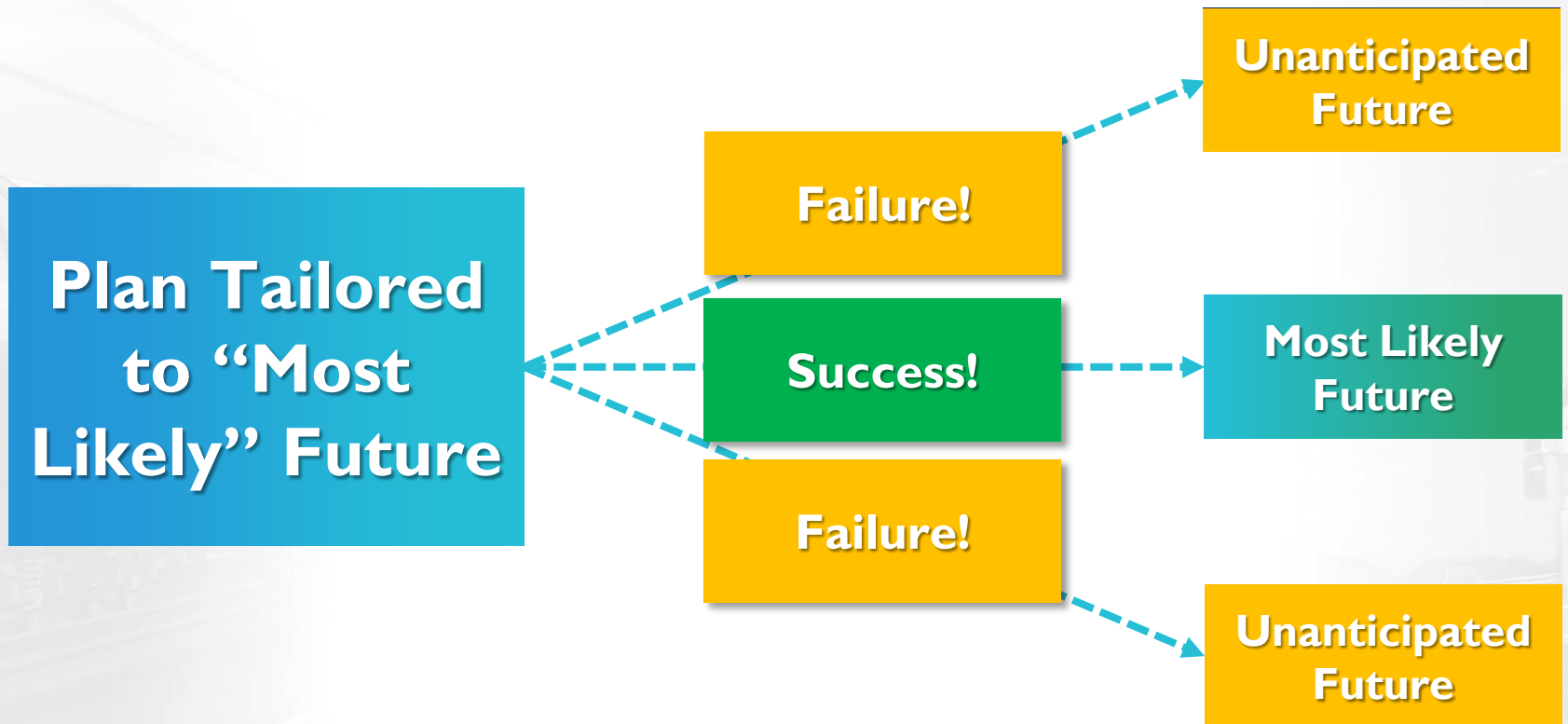


The American President, 1995

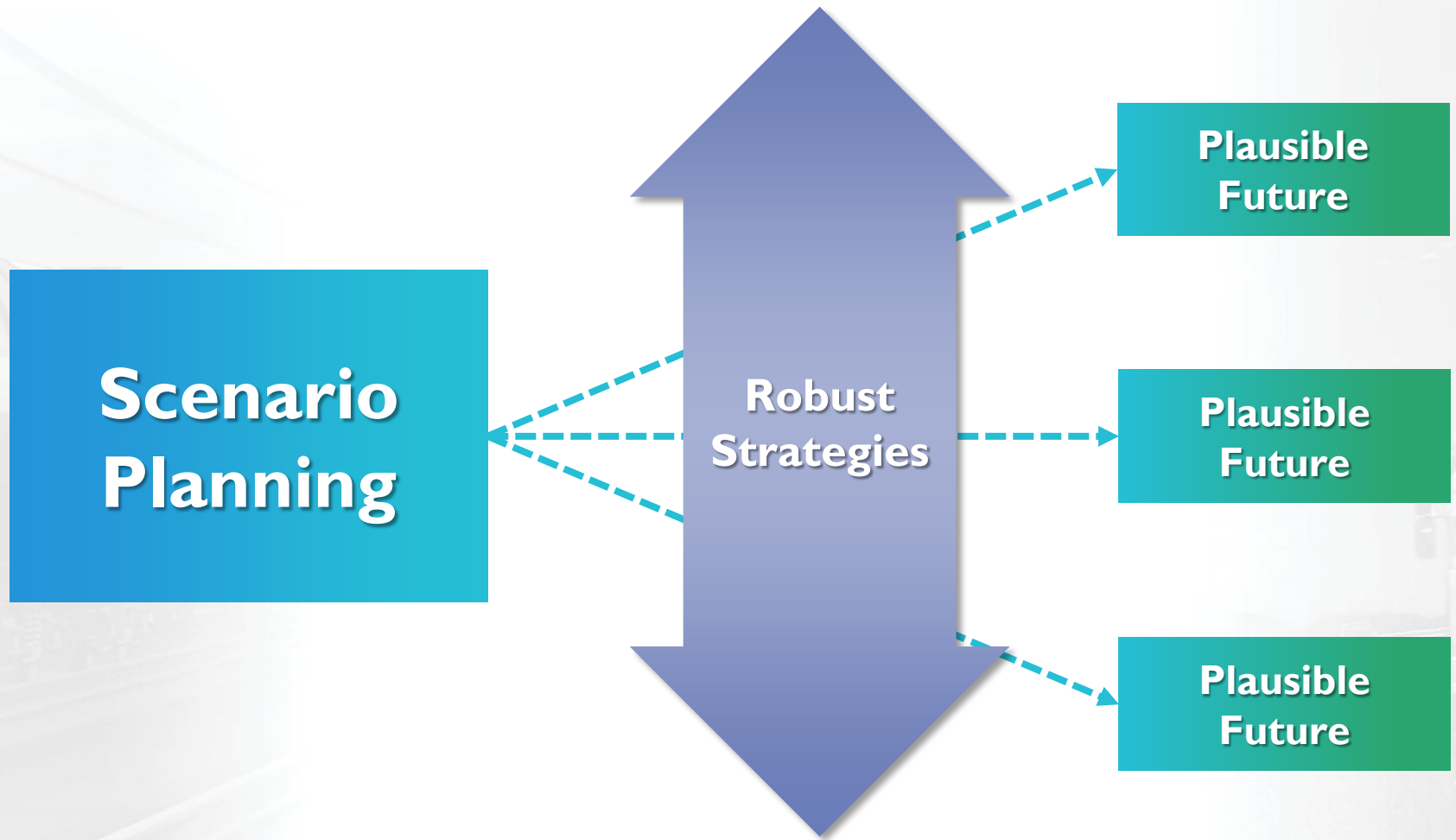


Will 2040 be any more unrecognizable than 1995?

Traditional planning



Scenario planning



The process

➤ **Step 1:** Develop Plausible Futures

Base on reported trends and uncertainties

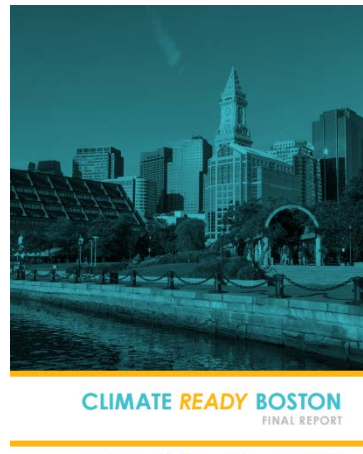
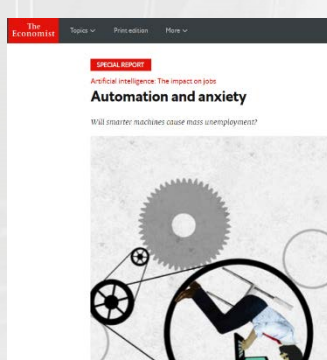
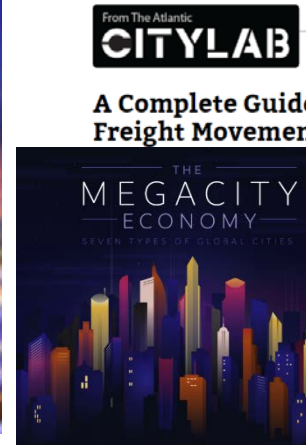
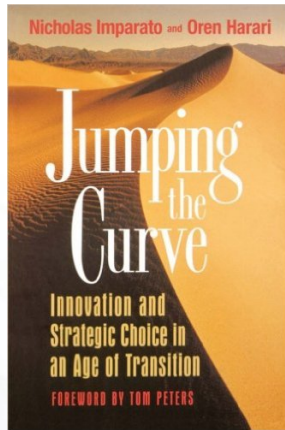
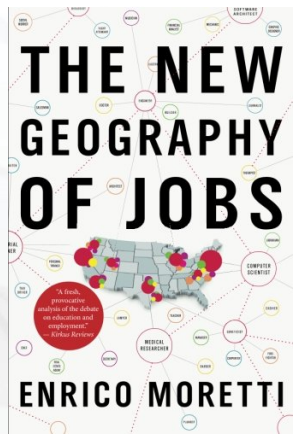
➤ **Step 2:** Develop Menu of Strategies

Collect from interviews, research

➤ **Step 3:** Test Strategies

Homework

Sources

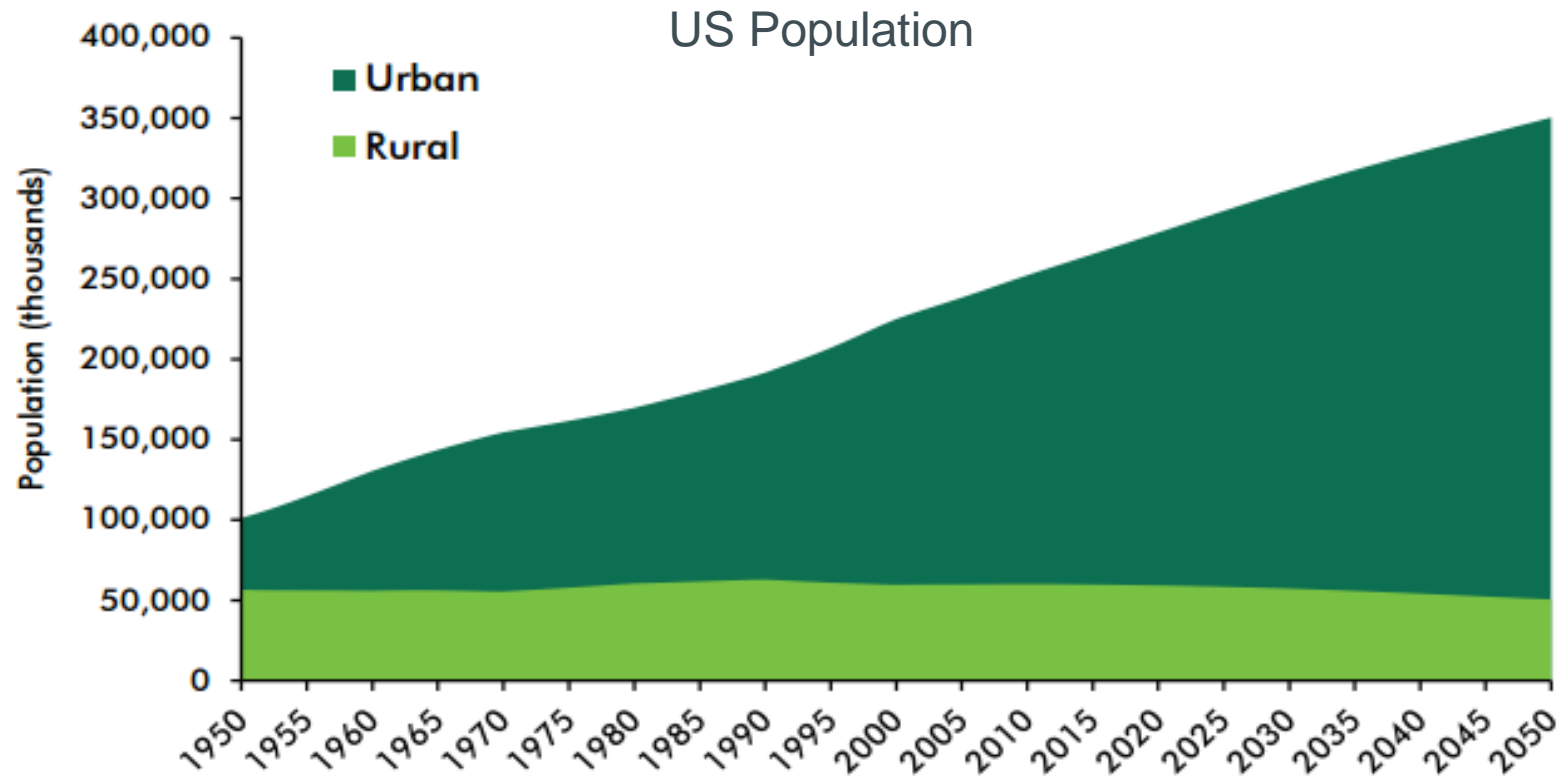


Drivers



Urbanization

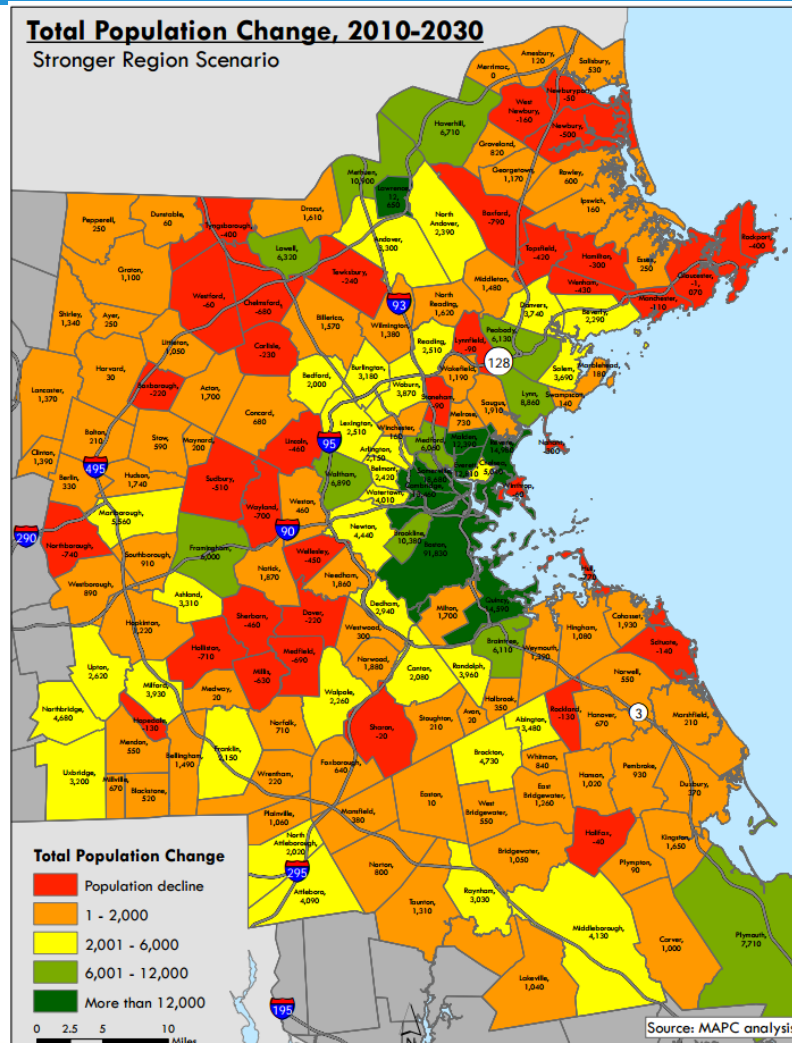
Population is growing...



Source: United Nations

Urbanization

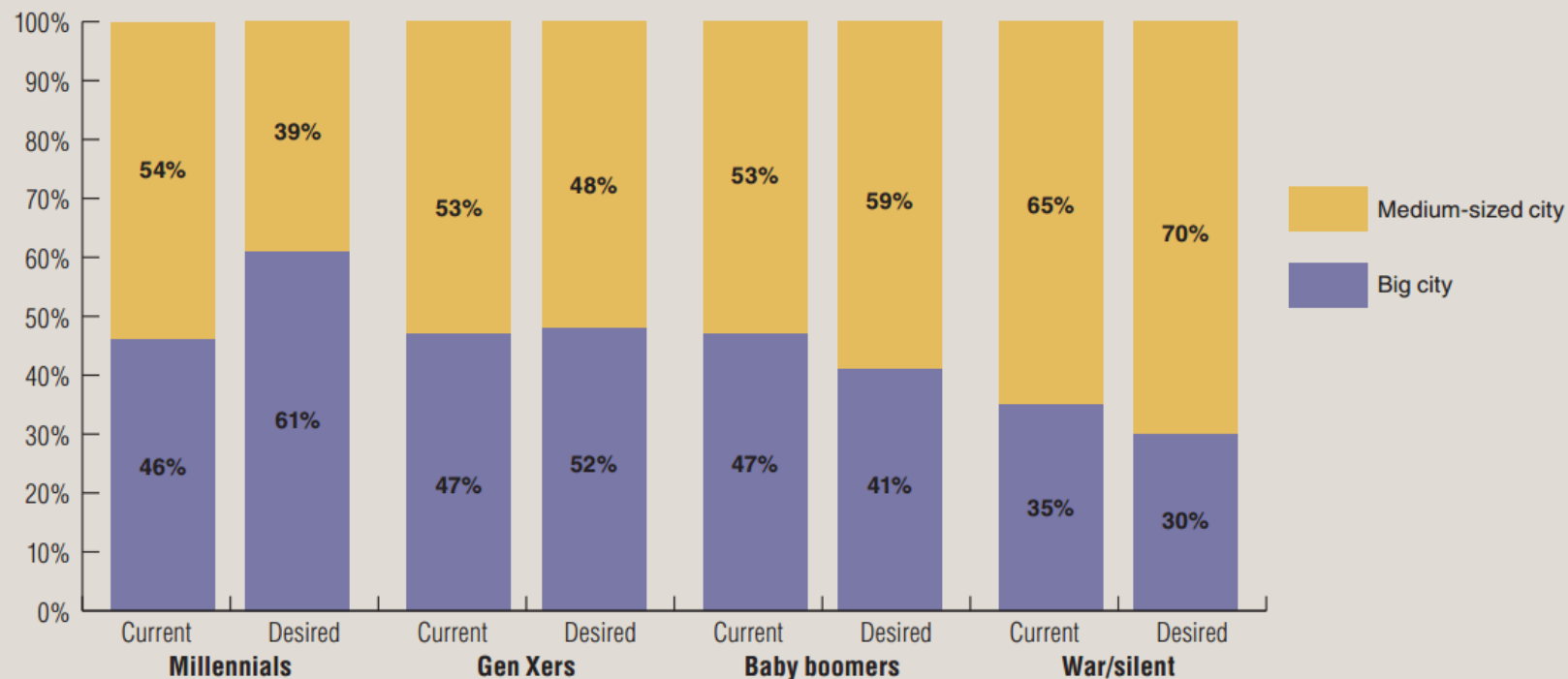
...potentially in existing city centers



Urbanization

Location preferences are shifting

Exhibit 1-9 Detail of Current and Desired City Location—Medium-Sized vs. Big City, by Generation



Source: Urban Land Institute: *America in 2015: A ULI Survey of Views on Housing, Transportation, and Community*, 2015.

Note: Drawn from response to *America in 2015* survey question: "If you could live anywhere in the next five years, would it be a rural area, a small town, a medium-sized city, a big city, a suburb within a 20-minute drive of a city, a suburb farther than a 20-minute drive to a city, or something else?"

The range of urbanization futures

Continued urban growth. People and jobs flow into smart city centers. Population in suburban and rural areas declines.

Slowing urban growth. Urban living plateaus as millennials age and empty-nesters “depart.” Suburban and rural populations increase.

more

same

less

There will be a confluence of changes...



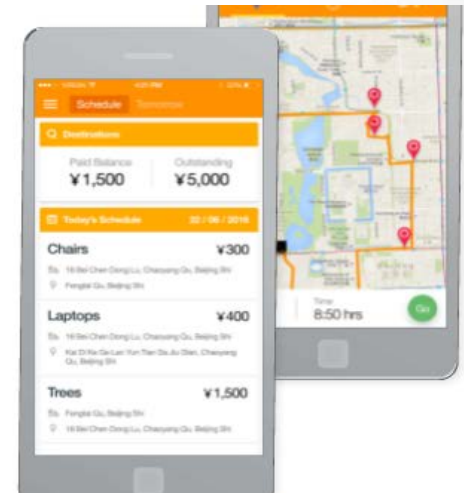
Technology

... that could change the supply chain

Automated Trucks



Uber for Freight



Personal Robots



Gizmodo

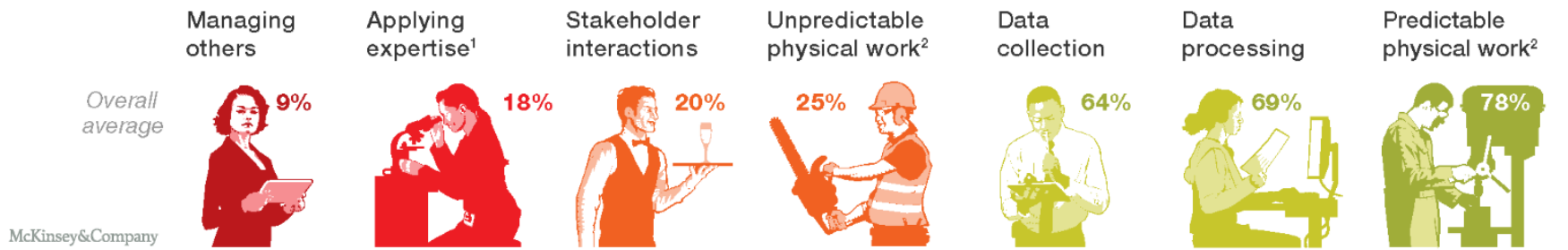
Technology

... and the workforce

The technical potential for automation in the US

Many types of activities in industry sectors have the technical potential to be automated, but that potential varies significantly across activities.

Technical feasibility: % of time spent on activities that can be automated by adapting currently demonstrated technology



The range of technology futures

Ubiquitous technology. Automation leads to replacement of workers but creates new industries and business models. 3D printing makes it possible to make things inside of the urban core. Trucks move in automated platoons and new devices handle last mile deliveries.

Narrow use of technology. Automation and 3D printing is only used in specialized situations and trucks still need truck drivers

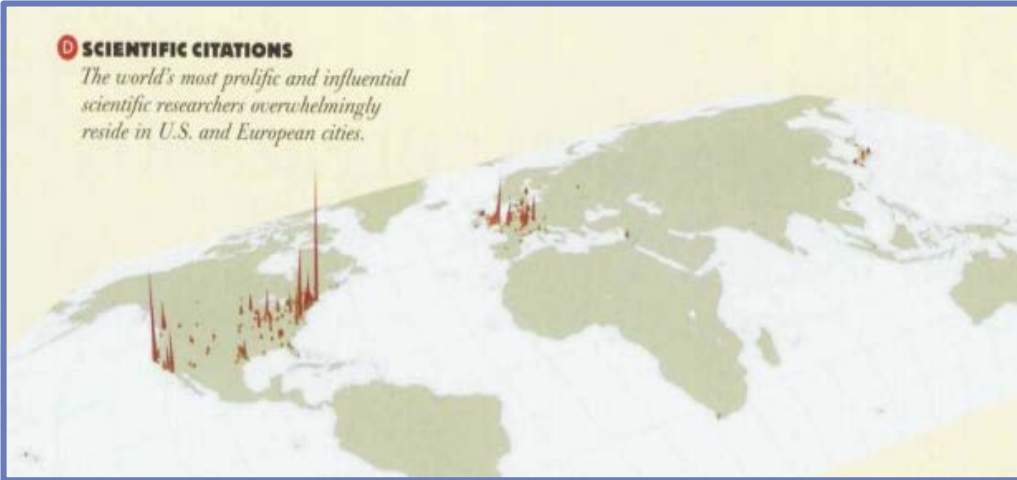


Knowledge

Is spiky and becoming more important

D SCIENTIFIC CITATIONS

The world's most prolific and influential scientific researchers overwhelmingly reside in U.S. and European cities.



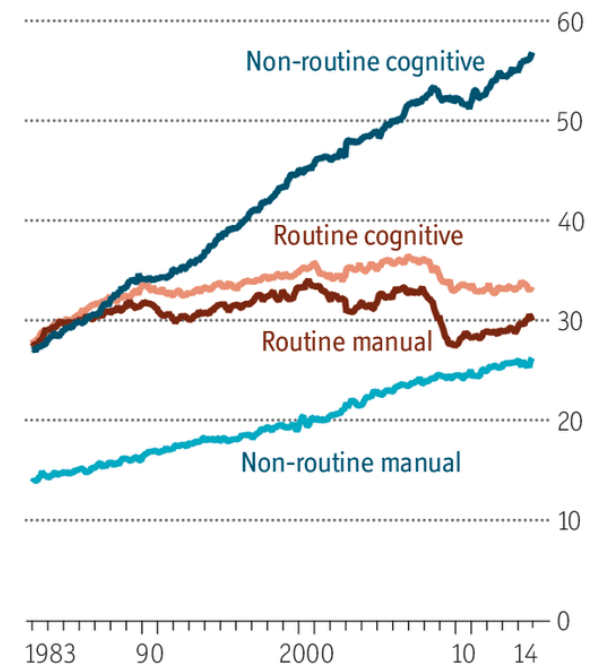
C PATENTS

Just a few places produce most of the world's innovations. Innovation remains difficult without a critical mass of financiers, entrepreneurs, and scientists, often nourished by world-class universities and flexible corporations.



Think

United States employment, by type of work, m



Sources: US Population Survey; Federal Reserve Bank of St. Louis

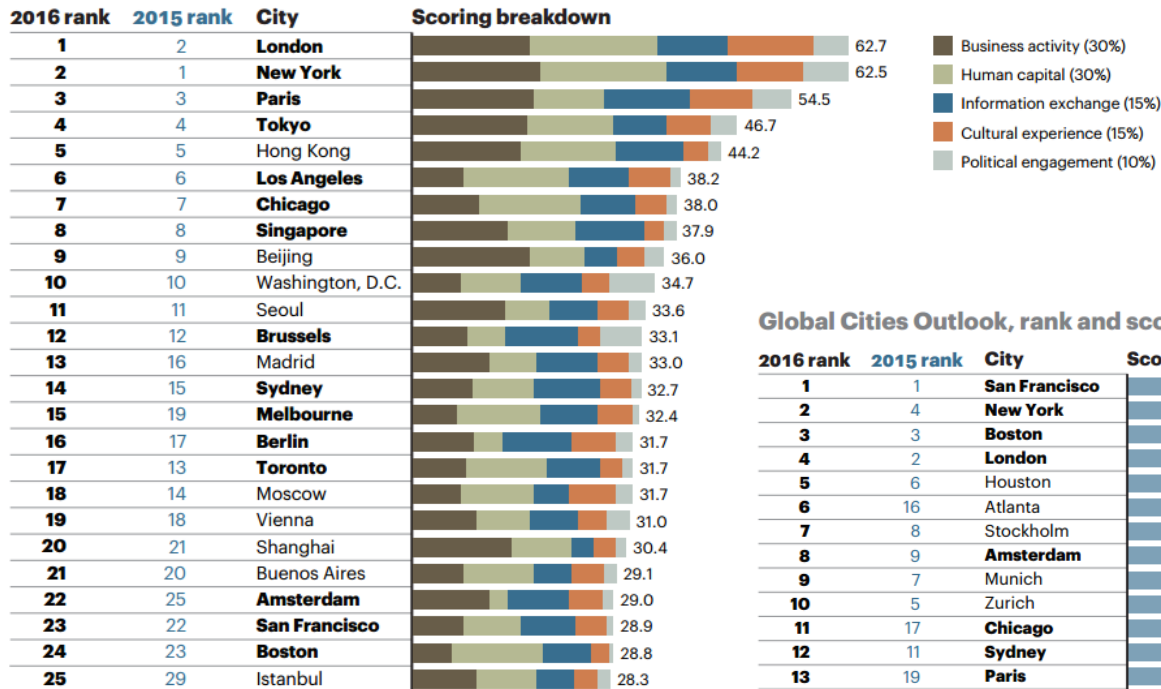
Economist.com

Source: Richard Florida, 2005

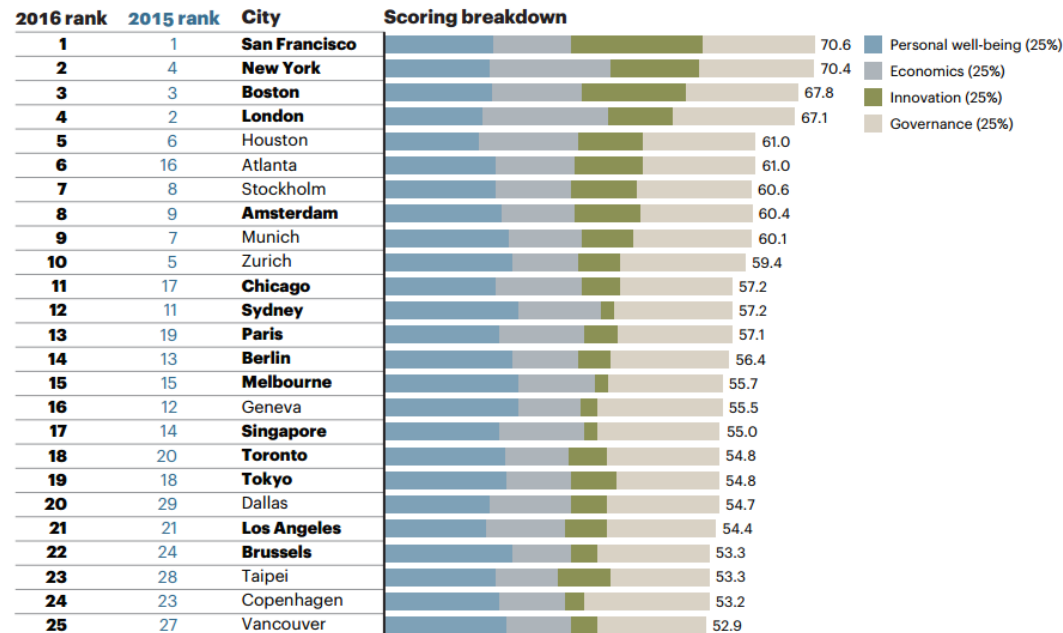
Knowledge

The stock in knowledge-work is growing

Global Cities Index, rank and score



Global Cities Outlook, rank and score



The range of knowledge futures

The knowledge workforce grows and there is a shortage in mid-skill and service workers

The knowledge workforce is automated and commoditized and the **service industry grows**

more

same

less

Globalization

The world currently is globalized

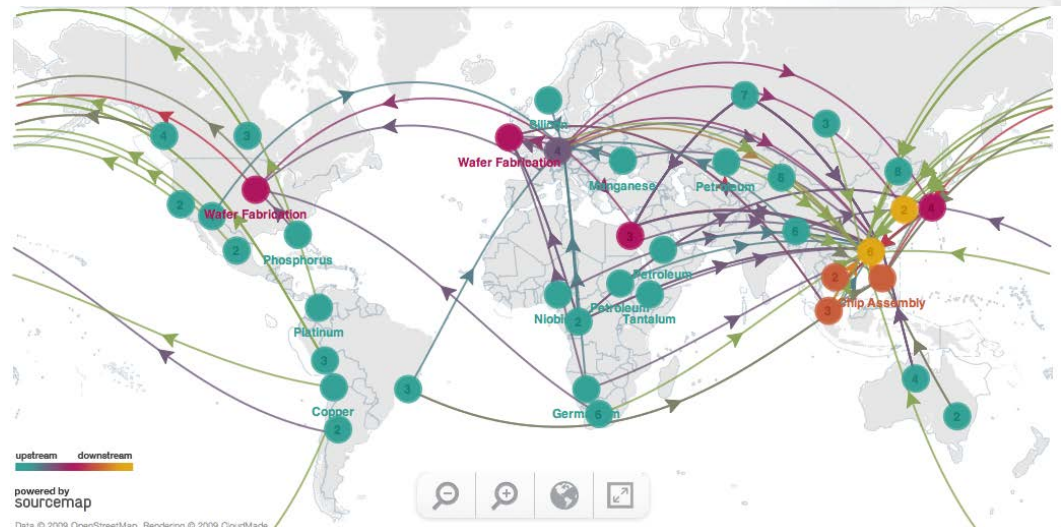
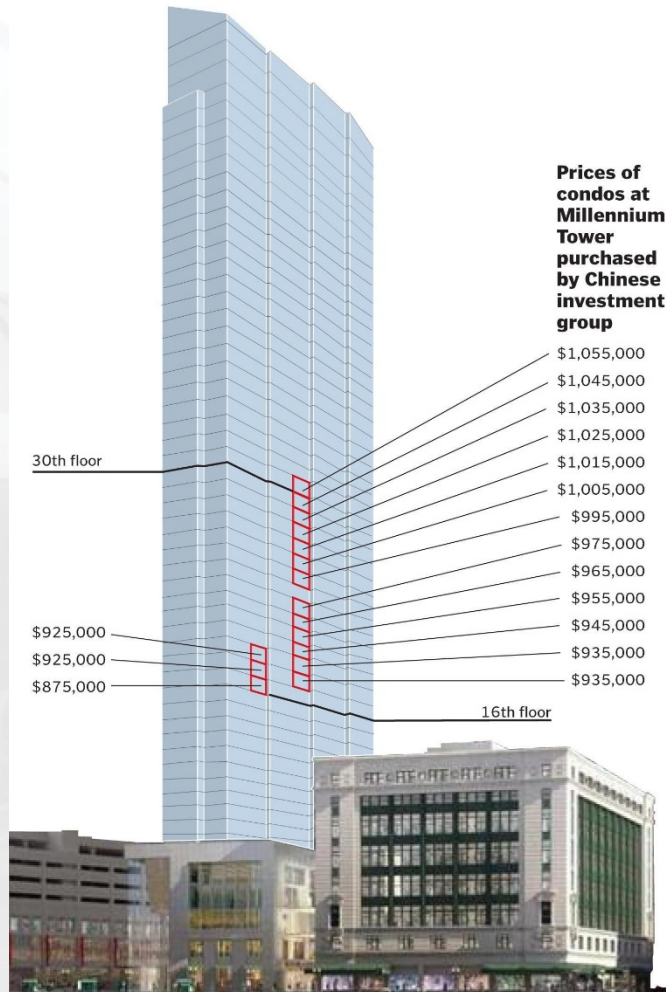
MERGERS AND ACQUISITIONS

FINANCE | BANKS | INVESTING | WALL STREET | HEDGE FUNDS | M&A | INSURANCE | VENTURE CAPITAL

Allergan CEO: Merger with Pfizer was targeted by US government

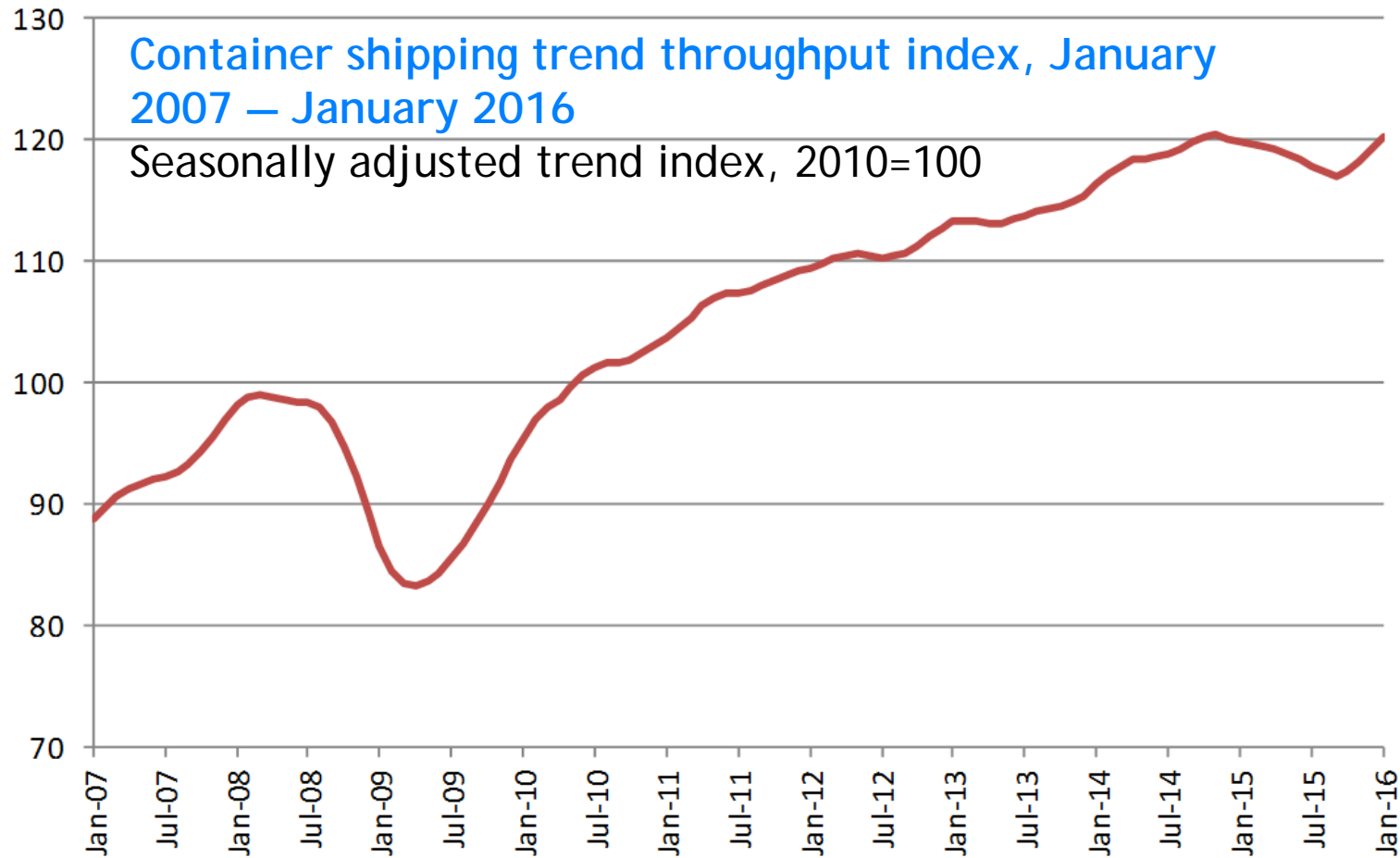
Tom DiChristopher | David Faber

Wednesday, 6 Apr 2016 | 10:11 AM ET



Globalization

But may be reaching its peak



Source: Institute for Shipping Economic and Logistics

Globalization

Globalization continues to increase and dominate trade patterns. International investments influence our economy

Globalization declines and supply chains begin to regionalize as automation erodes the global labor advantage

more

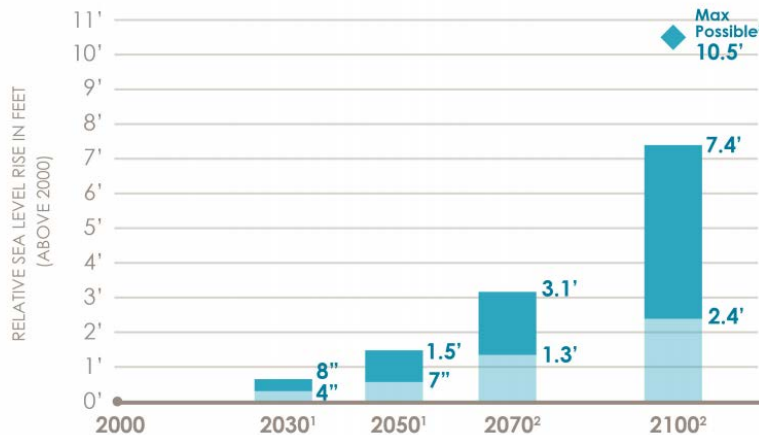
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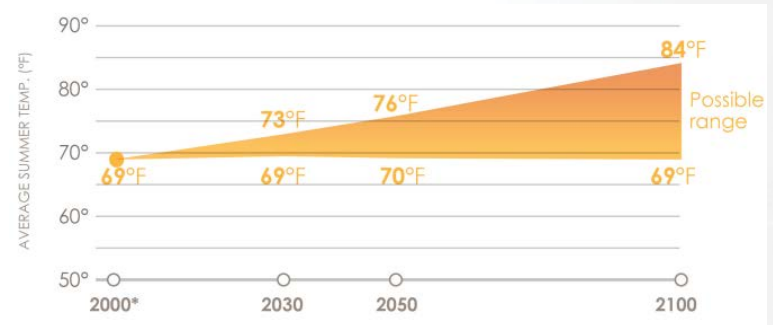
Climate

Climate change will have an impact

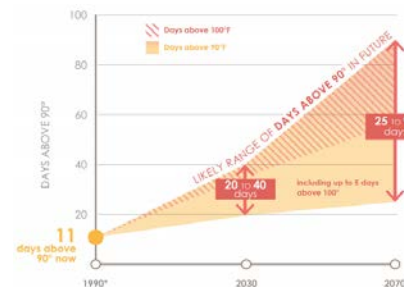
Sea levels in Boston will continue to increase



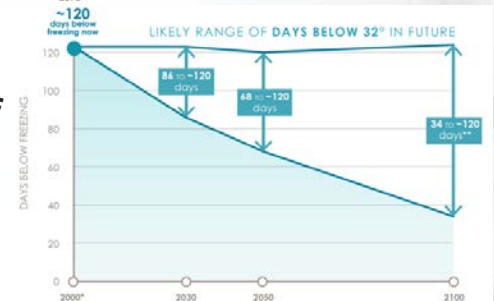
Average summer temperature will increase



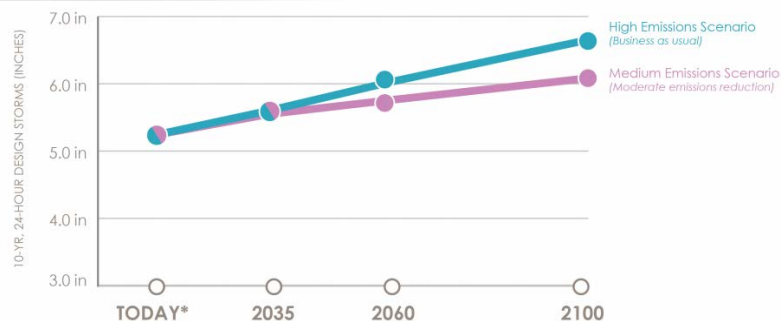
The number of very hot days will increase



The number of very cold days will decrease



Rainfall from storms will increase



Source: Climate Ready Boston

Climate

We will need to adapt

ADAPTING TO CLIMATE CHANGE



PROTECTED SHORES



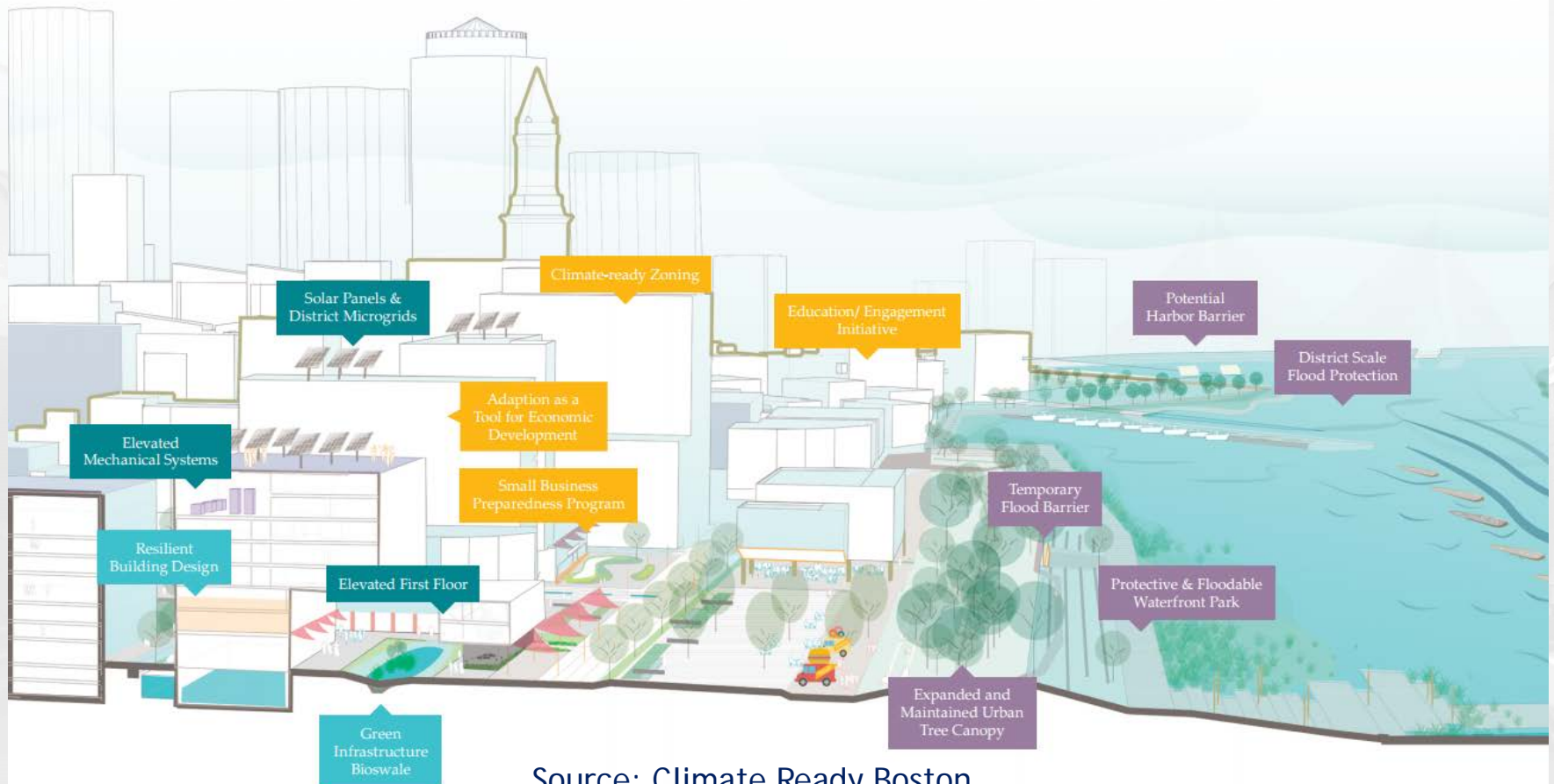
PREPARED AND CONNECTED COMMUNITIES



RESILIENT INFRASTRUCTURE



ADAPTED BUILDINGS

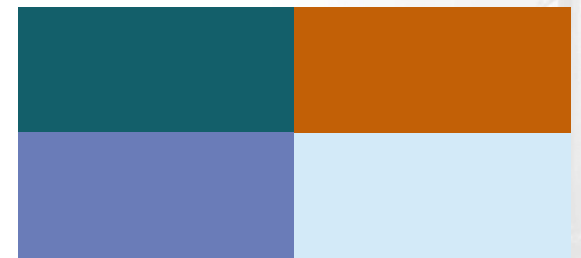
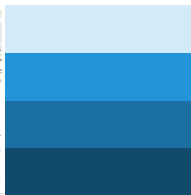
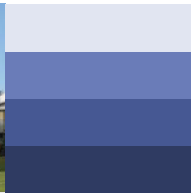
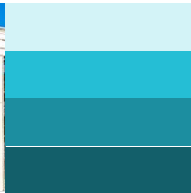


Source: Climate Ready Boston

Climate

Climate change impacts materialize by 2040 bringing more extreme storms, temperature increases, and flooding. This threatens low-lying infrastructure and land uses.

Scenario development



Keep in mind...

- We have not suggested a “good” or a “bad” future
- Climate change is included in every scenario
- These drivers all can happen together
- The goal is for strategies to work for all futures

Scenario 1: Commonwealth Comfort

Strengthening the current state



Urbanization



- » People and jobs flow into smart city centers
- » Population in suburban and rural areas stays strong

Technology



- » New tech adopted fills important but niche markets
- » 3D printing for some products and automation for controlled environments

Knowledge



- » MA universities continue to educate a talented workforce with a focus on white collar jobs

Globalization



- » MA continues to attract international students and workforce
- » Globalization plateaus but exports remain strong and some hi-tech manufacturing comes back to the US

Scenario 2: Economic Dream

Accelerating toward an innovation future

One plausible future...

Urbanization



- » People and jobs flow into smart city centers
- » Population in suburban and rural areas declines

Technology



- » New tech adopted rapidly and becomes ubiquitous
- » 3D printing dominates, supply chain and the routine tasks are increasingly automated

Knowledge



- » MA universities continue to educate a talented workforce with a focus on white collar jobs
- » There is a strong cluster service industries that crop up

Globalization



- » Global trade dominates manufacturing patterns

Scenario 3: Return to Rural Roots

A change from the current direction in every way



One plausible future...

Urbanization



- » Urban living plateaus as millennials age and empty-nesters “depart”
- » Rural and suburban populations increase

Technology



- » The technology revolution doesn't materialize
- » 3D printing and automation remain ‘cool’ ideas for the wealthy and curious

Knowledge



- » MA continues focus on white collar jobs but increases focus on community colleges to develop a strong mid-level and service workforce

Globalization



- » Manufacturing returns to the US in full force

GROUP EXERCISE

Ground rules

- Remain at your tables – this is your group
- Designate
 - » One note taker
 - » One reporter
- Consider
 - » How will freight change in each future?
 - » How will your business change in each future?
 - » What should our goals and objectives be?
- Report-out

30 min

3 min/table

WHAT'S NEXT

And now...

- **Stick around to talk to the team**
 - » Questions about scenarios and strategies
 - » Questions about Technical Memorandum 2
 - » Questions about the FAC
- **Public open house from 4:00 – 5:30 PM**

Coming soon...

Meeting	Scenario Planning	Vision, Goals, Objectives
Homework	Propose strategies Test for robustness	
April 24 – Springfield	Agree on no-brainer strategies and those to throw out Discuss hedging, shaping	Review vision, goals, and objectives
May 24 – New Bedford		Discuss the Freight Plan

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