



New England Peering Forum

Building New England Resilience & Strength for the Digital Economy

Data and Trends Impacting The Connected World in New England

Open Invite for Peering Community to Attend Customer Summit :

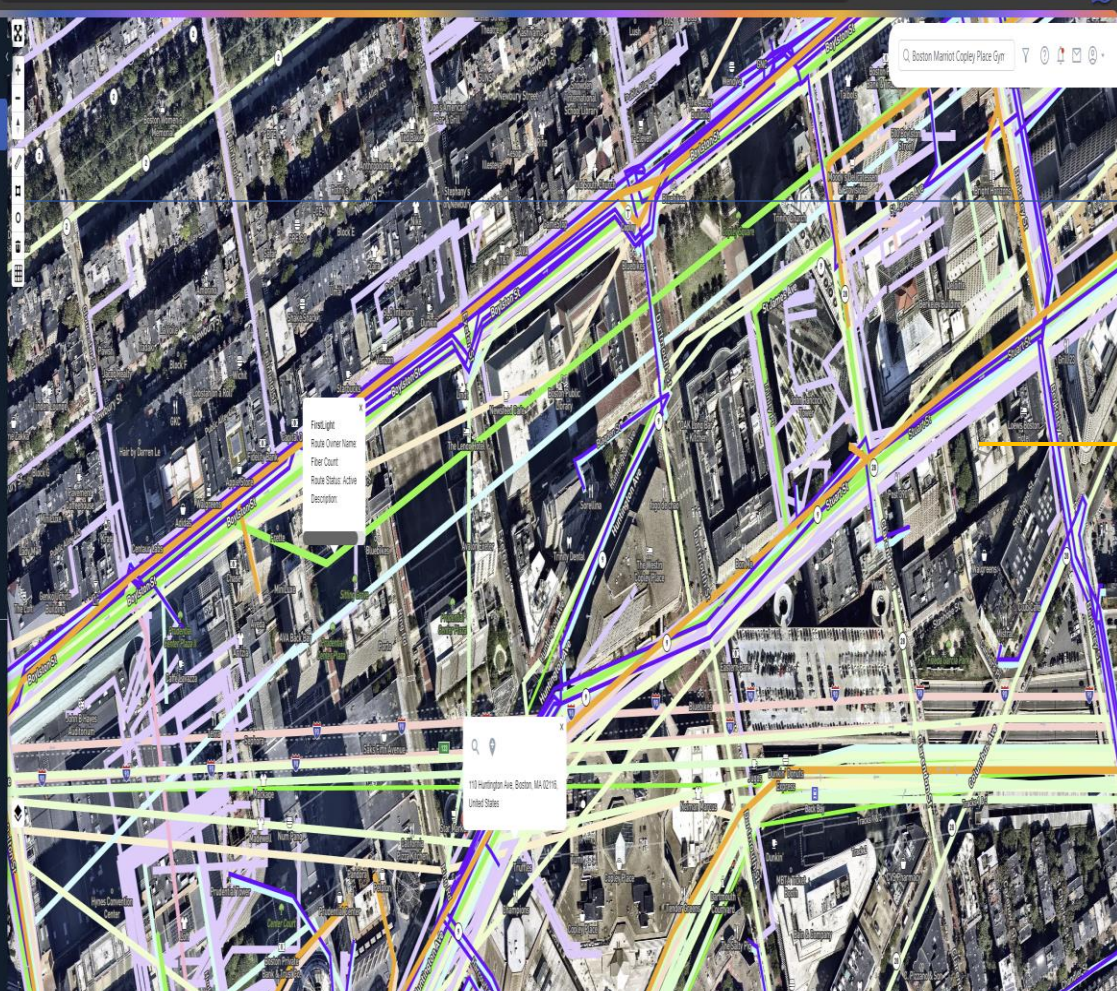
Marriott Copley • Boston, Massachusetts • October 30th to November 1, 2022

42.346810 , -71.078930

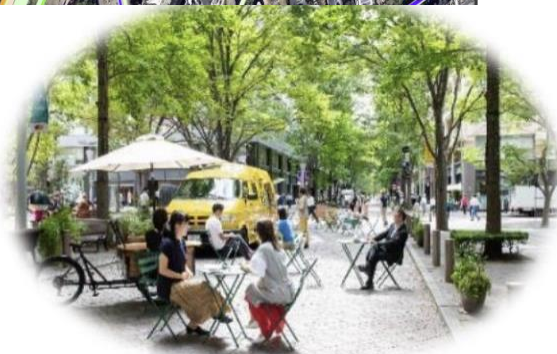


Peering Forum Agenda

- **Welcome & Introduction**
- New England Connected World
- Data Gravity for New England
- Trends Driving Change in Ecosystem



Preparations for power and communications outages, etc.



Creating a city that is also highly prepared for infectious diseases



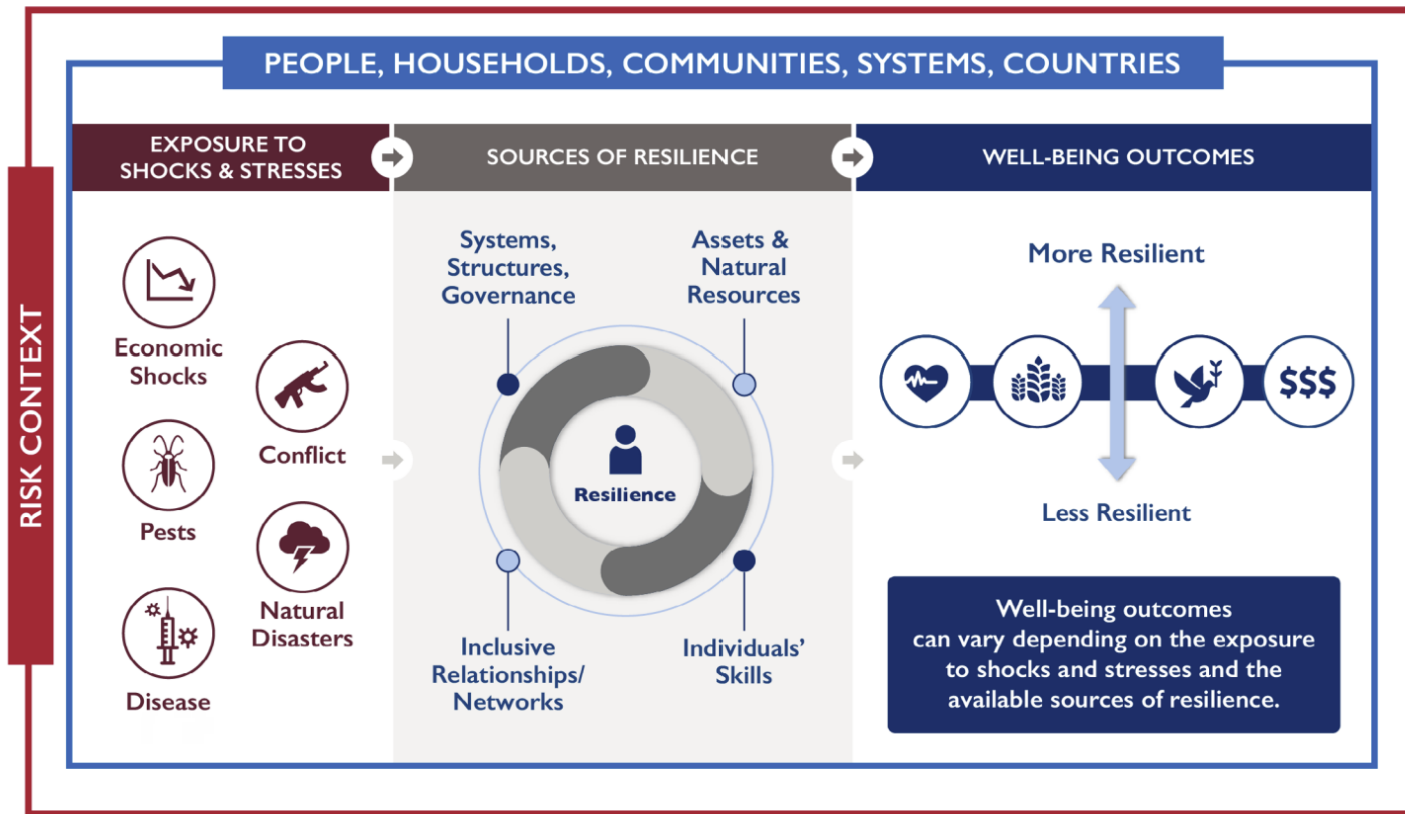
Preparations for floods and storms



Preparations for earthquakes

Traditional Resilience Framework Appended to Digital Economy

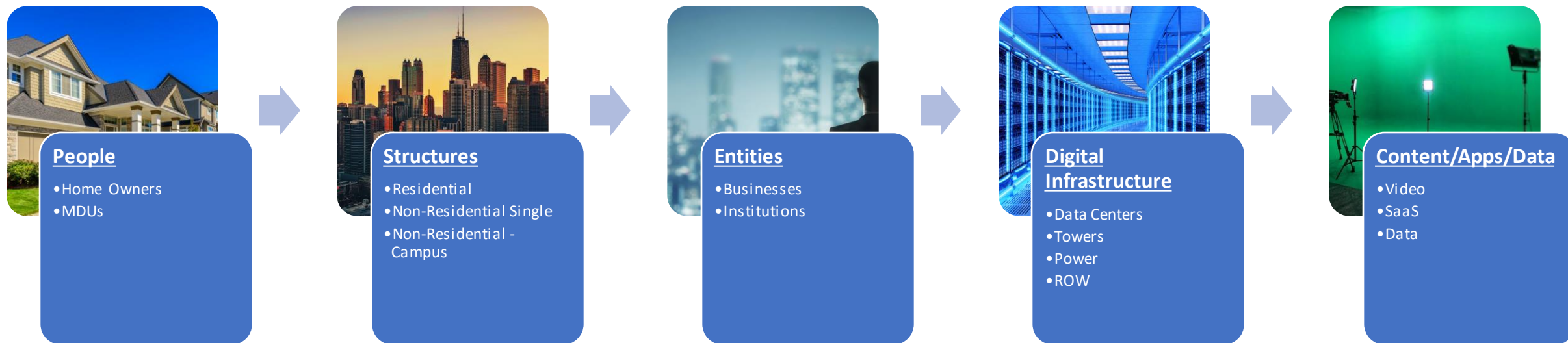
Resilience Conceptual Framework



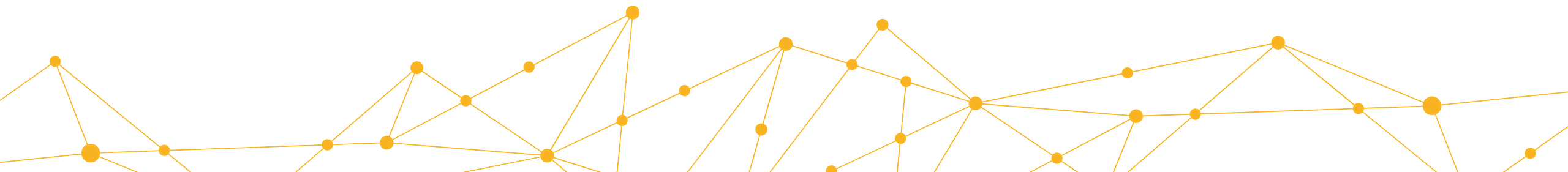
Digital Economy Sources of Resilience

- **Consumption** : Growth, Scope, Value
- **Content** : Source and Accessibility
- **Peering Fabric** : Density, Destinations, Proximity, Points
- **Network** : LM, MM, Peering, LH
- **Power** : Cost, Availability, Sustainable
- **Infrastructure** : DC and Towers
- **Policy** : Infrastructure, Tax, Jobs, Data, Privacy
- **Economy** : Knowledge, Growth, WFM
- **Education** : Higher Ed density, REN, K12

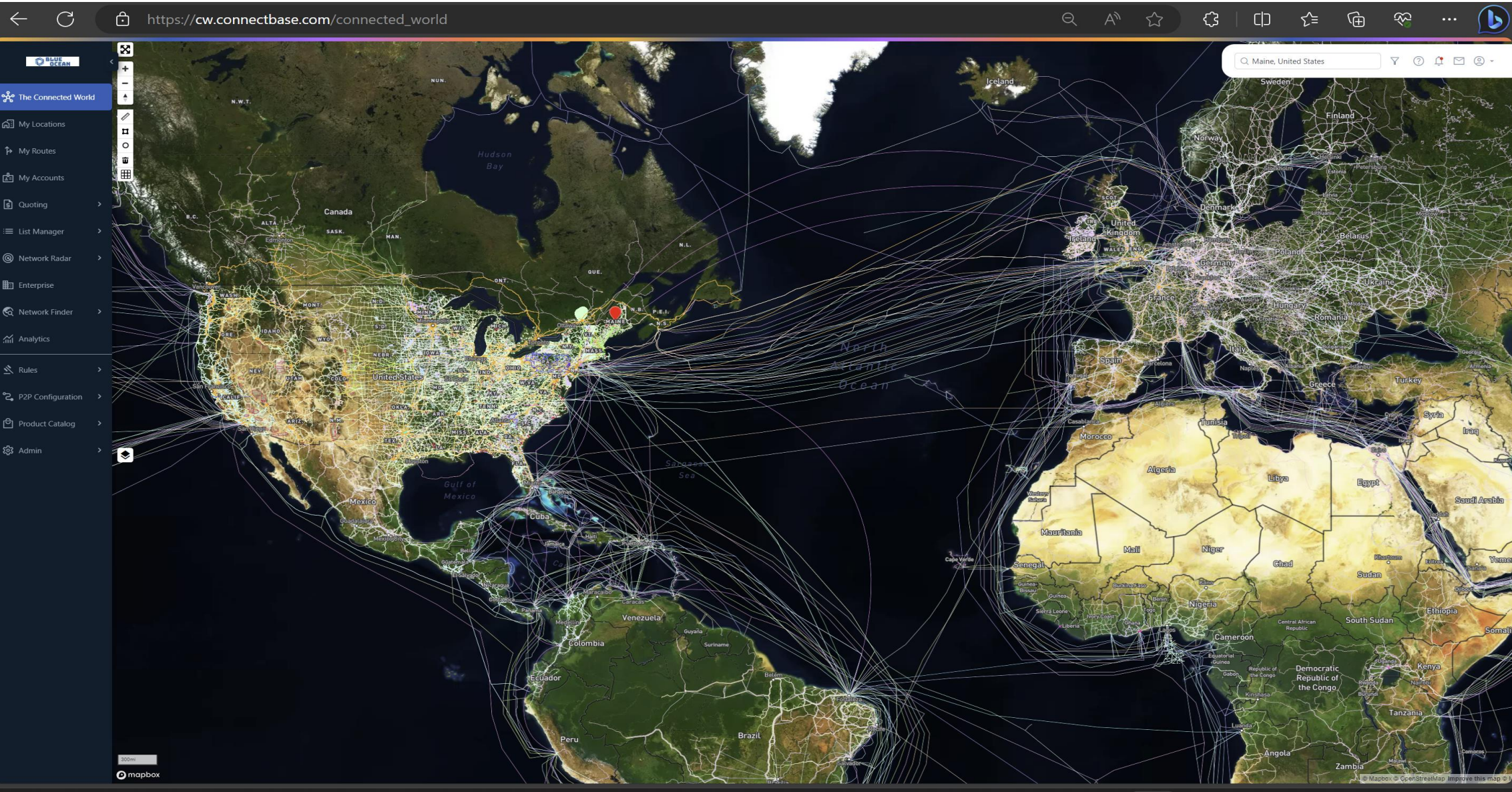
The Connected World of New England *More Than 0's and 1's*



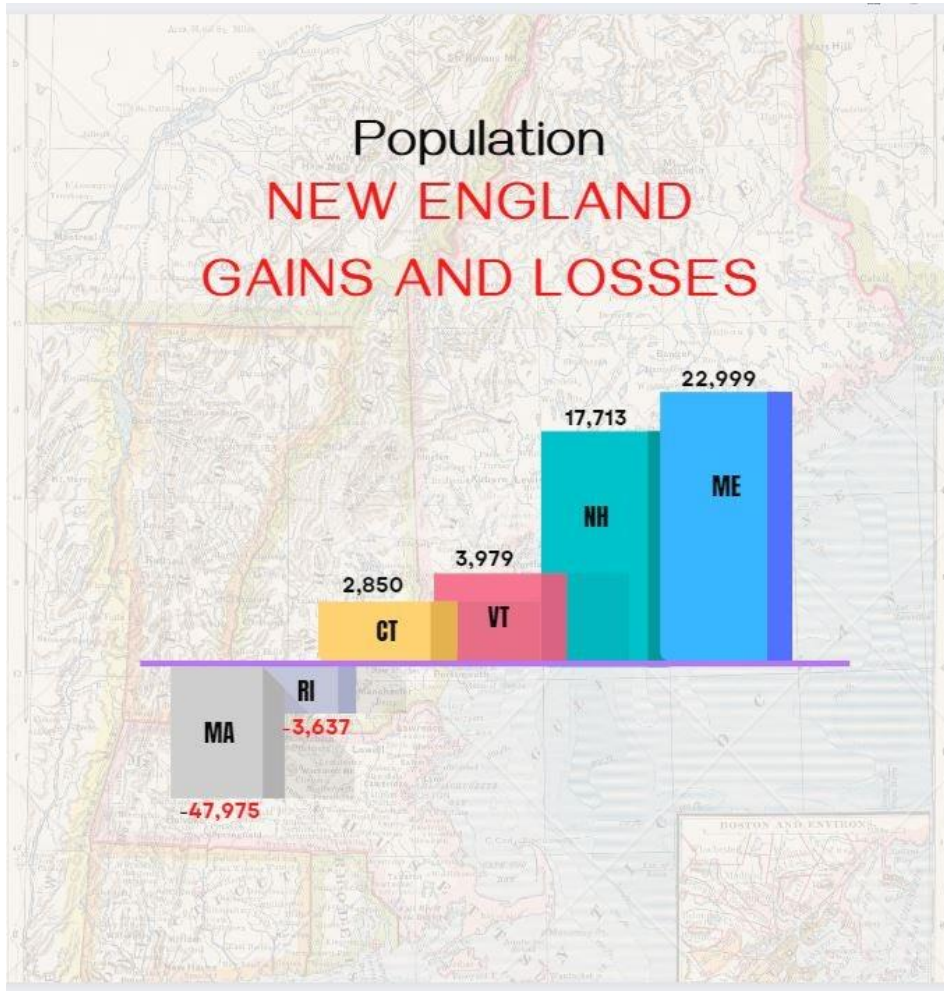
In terms of area, the region is only slightly larger than England or the state of Washington. The state of Maine makes up nearly one-half of the region's total area, while the remaining states are some of the smallest in the US, including Rhode Island, which holds the distinction of being the smallest of all 50 states.



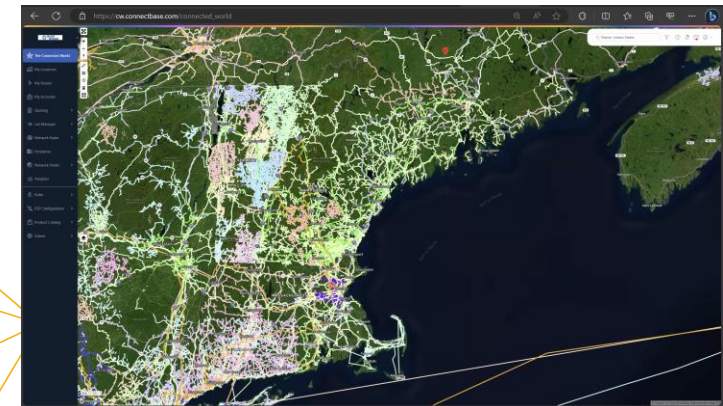
The Connected World



People : Population Growth & Decline, Net Neutral



- 15,129,548 People
- Less than 1% population growth annually
- The population density as a whole is nearly 235 people per square mile on average, significantly higher than the national population of 79.56 people per square mile
- 1061 people per square mile for the densest state in NE, Rhode Island, followed by Massachusetts with 901 people per square mile.
- 44 people per square mile for the least dense state, Maine, followed by 69 people per square mile in Vermont.
- 6,802,109 housing units
 - 2.224244 average people per housing unit
 - In Massachusetts, 84.9% of people have access to 1G broadband, ranking 10th among all states.
 - \$59.95 to \$104.95 for Broadband MRC, if 84.9% all took 1 gig at average \$104.95, that is \$7.2 Billion a Year in Broadband Residential Spend
- What impact does that Broadband have on Peering fabric moving 1 Gig vs legacy DSL and CableCo speeds and network structure?



Structures : Location Truth

- 6,802,109 housing units in New England
- 5,300,815 unique residential structures
- 399,626 employer establishments
- 1,209,976 non employer establishments
- 38,905 Building Permits Last Year in NE
- 62,694 sq miles Covered
- 13390 Government Facilities
- 7725 School Facilities

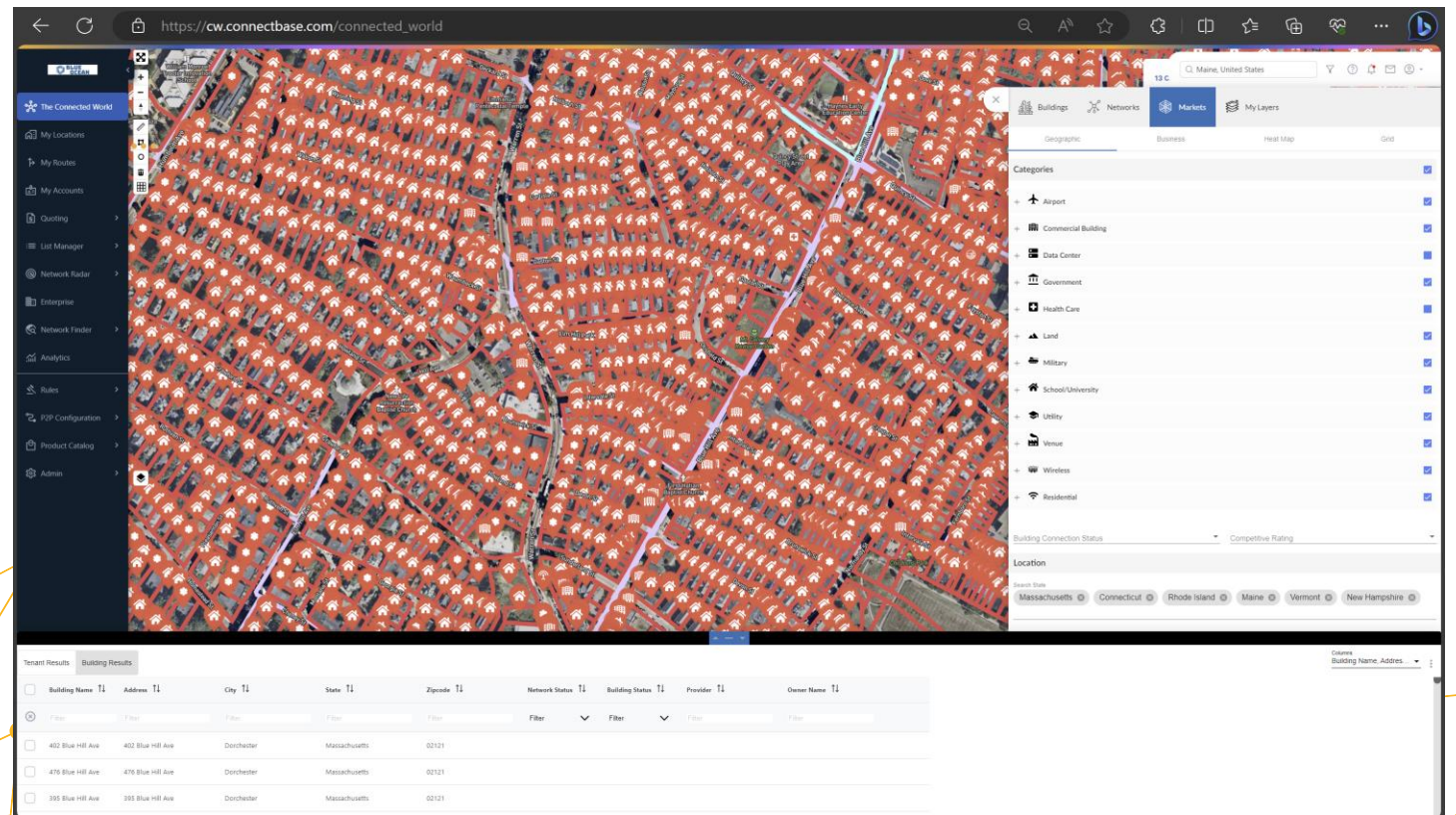
12 Primary Location Categories : 37 Subcategories

6663 Venue's

193 Military Sites

57,095 Health Care Facilities

136 Airports



Entities : Commercial, Education and Government Traffic Connectbase

- 399,626 employer establishments, with 6,361,841 employees
 - Just over 15 employees per establishment on average
 - With 10 to 15 Mbps per employee , that is 238 Mbps per establishment
 - Average Public IP spend is just over \$400 per month or \$1.9 Billion

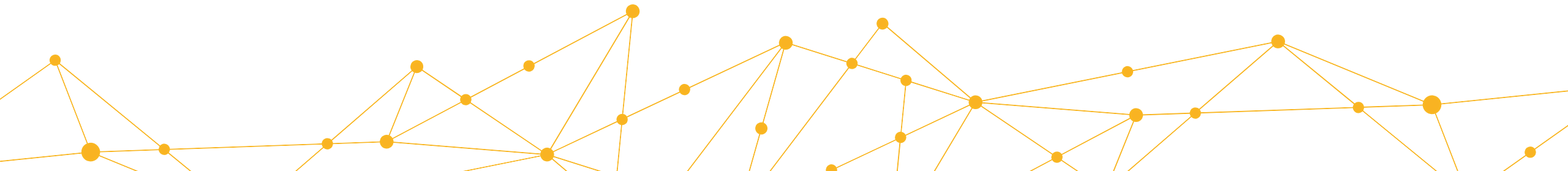
68 Entities with HQ in NE and 10k employees or more

75 Entities with HQ in NE and 5k to 10k employees

514 Entities with HQ in NE and 1 to 5k employees

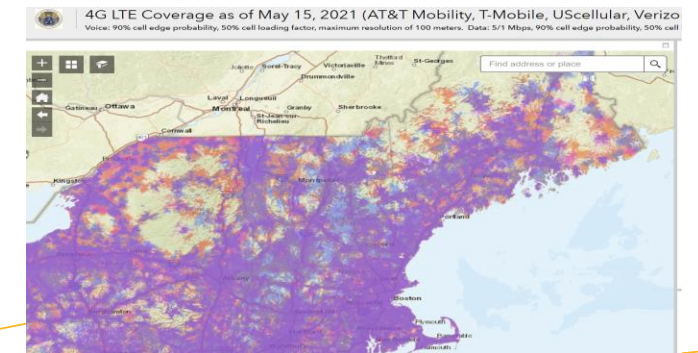
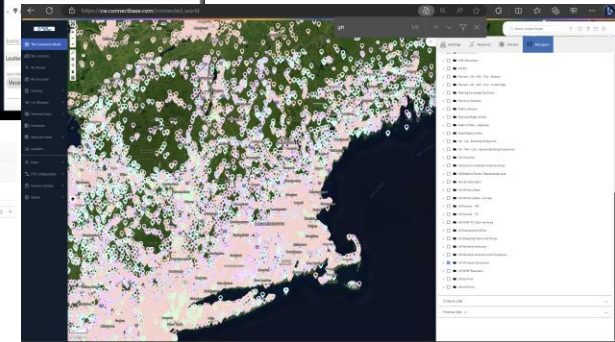
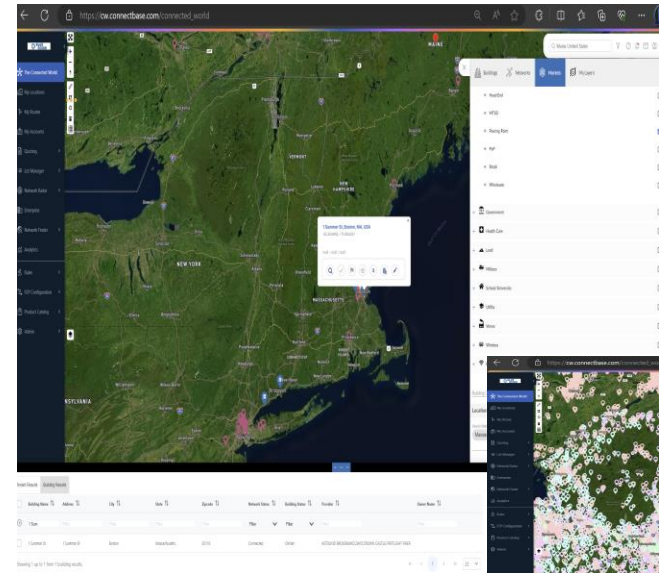
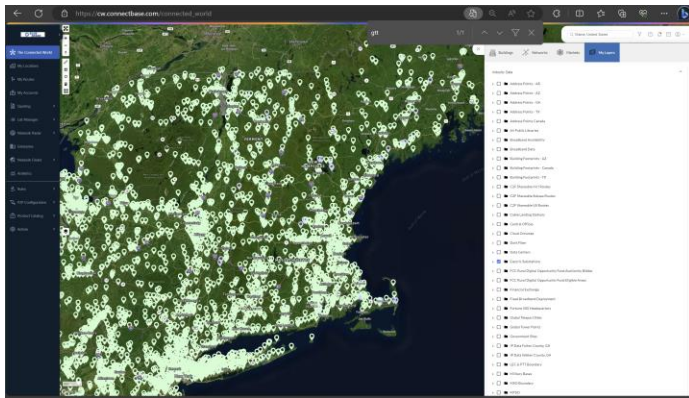
606 Entities with HQ in NE and 500 to 1k employees

Over 390k entities with less than 500 employees



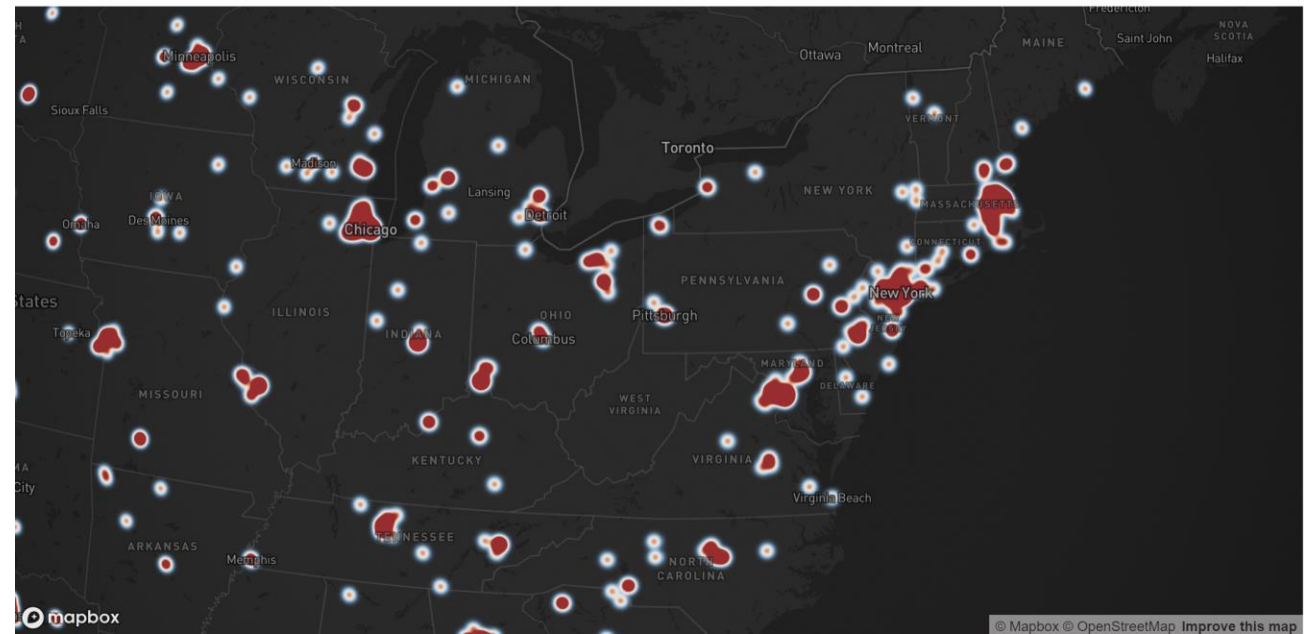
Digital Infrastructure in New England

- 1032 Data Centers
- 12508 Wireless Macro Structures
- 3945 Utility Sites , Substation and Power Plants



- 31,303 ASNs HQ in the US,
- 1,541,244,672 IP Addresses
- 6,142,768 live Shopify Stores Globally
 - 2,831,742 in US
 - 32,721 from New England

Heatmap of the top sites in the United States



- Data Gravity Flow

Traffic to NYC and VA

- Wireless Provider Traffic Flow Challenges



New England Power : Expensive and...



OVERVIEW ELECTRICITY NATURAL GAS PETROLEUM COMMENTARY [Print dashboards](#) [Take a Tour](#)



Normal

Current grid status
as of 9/22/23, 5:27 a.m.



-- MW

Today's forecasted peak
demand
, hour ending



16,858 MW

Available capacity
9/21/23



-- \$/MWh

Day-ahead price
-

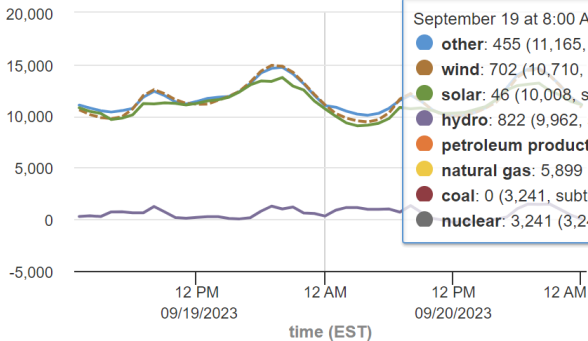
2 DAYS 2 WEEKS 1 YEAR

2 Days



Hourly electricity demand, net generation, and net imports for New England

megawatthours (MWh)



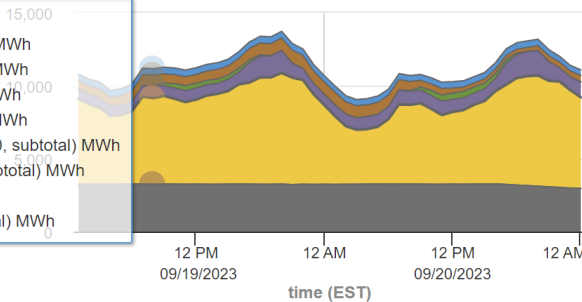
— demand — forecast demand
— net generation — net imports

2 Days



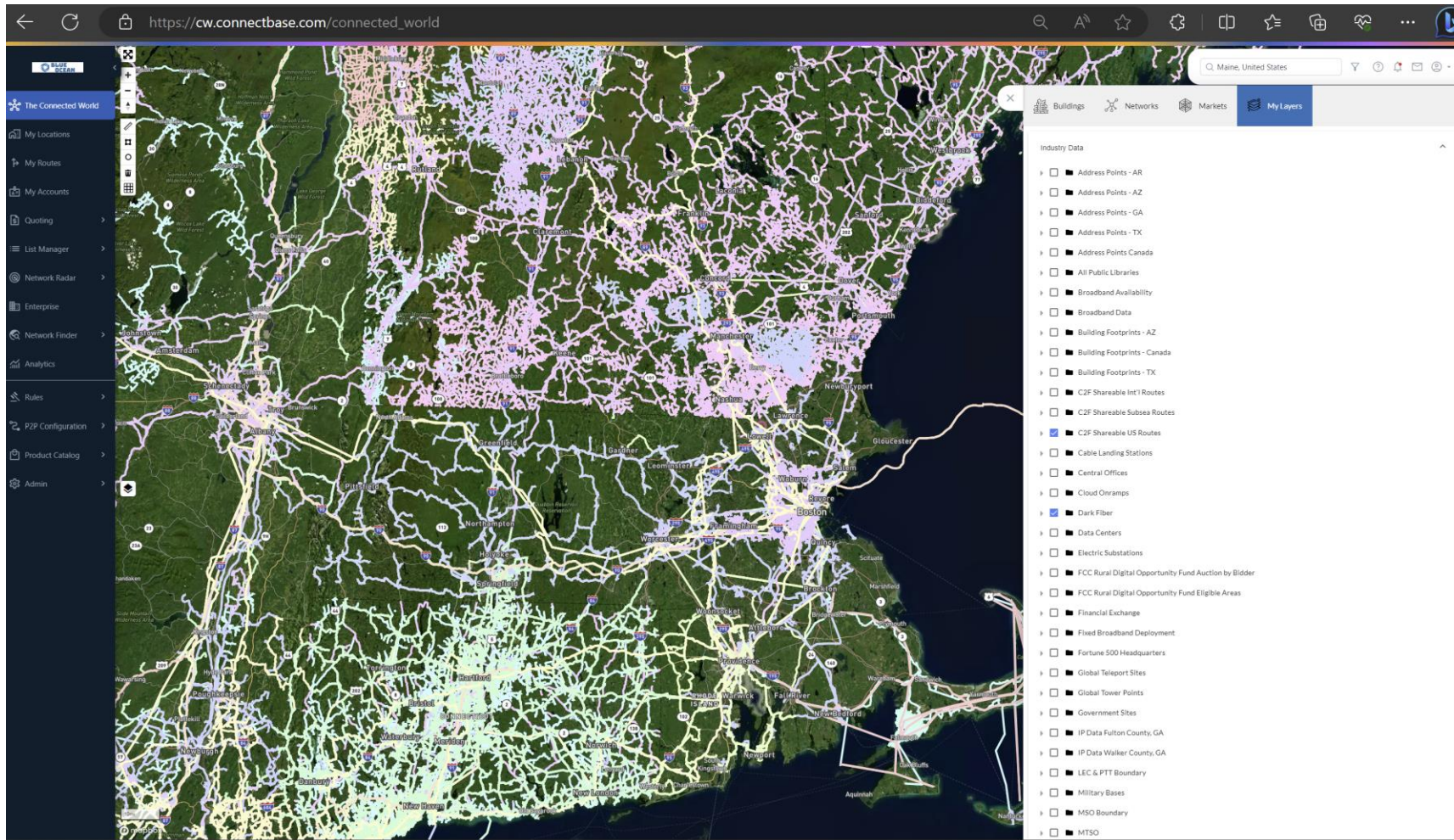
Hourly net generation by energy source in New England

megawatthours (MWh)



other wind
solar hydro
petroleum products natural gas
coal nuclear

Denser Fiber Reaching to Homes, Schools & Business



Bead Funding :

ME : \$272 Million

VT : \$229 Million

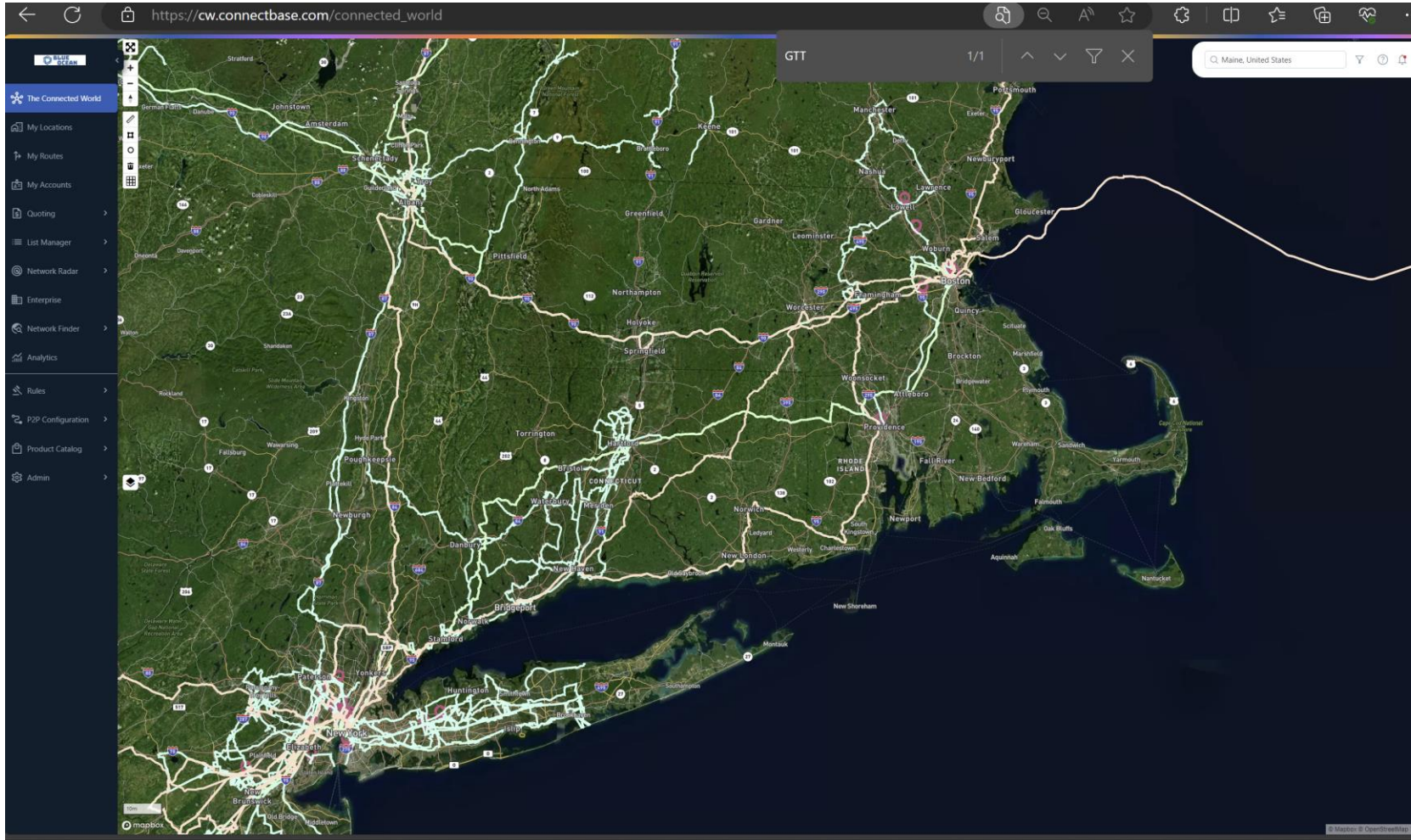
NH : \$196 Million

MA : \$147 Million

CT : \$144 Million

RI : \$108.7 Million

Long Haul : Connecting NE to World



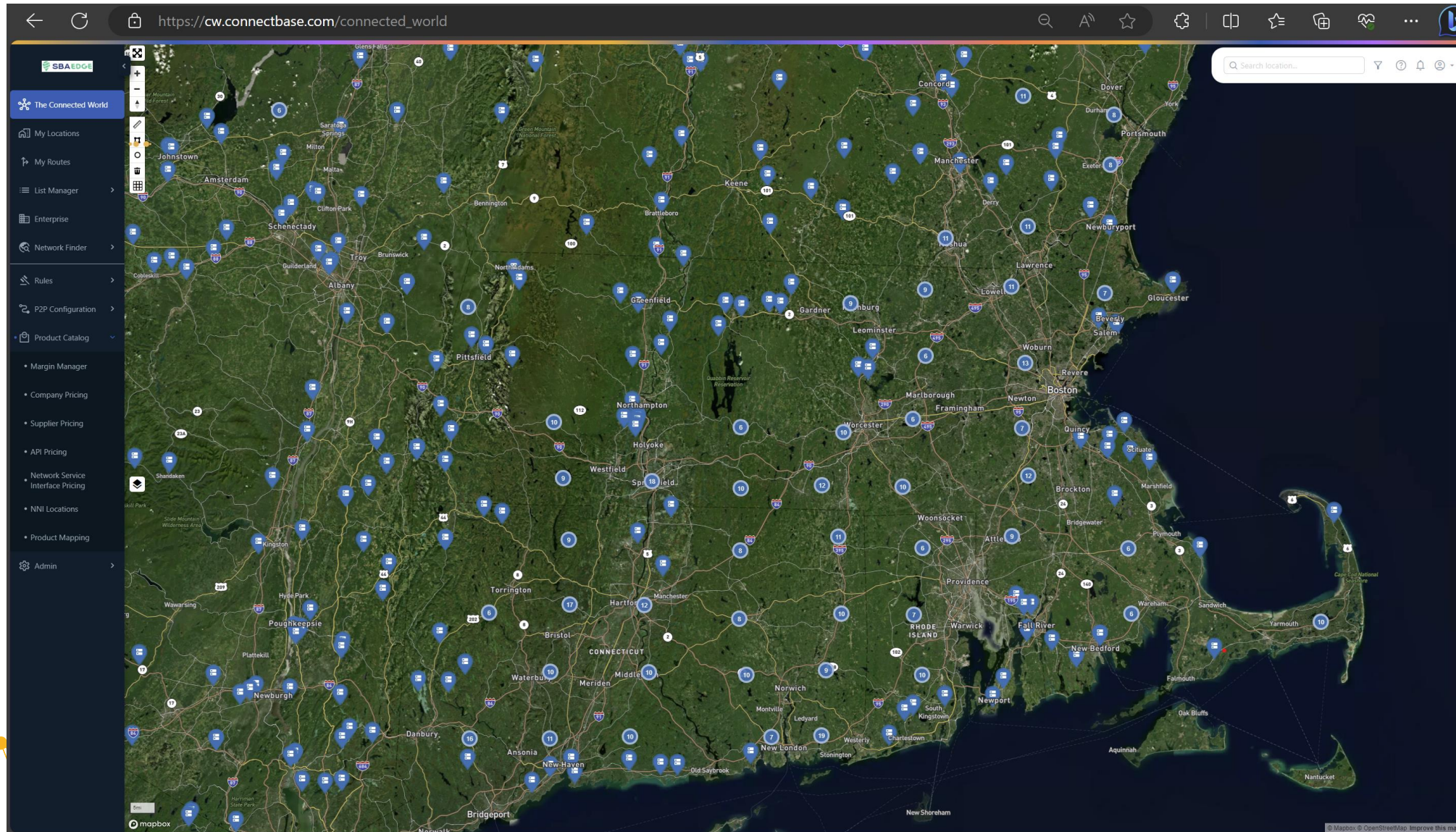
Subsea Out of
Lynn

Cross Border to
Canada through
VT, ME and NH

Biggest
Destination is
NYC Metro

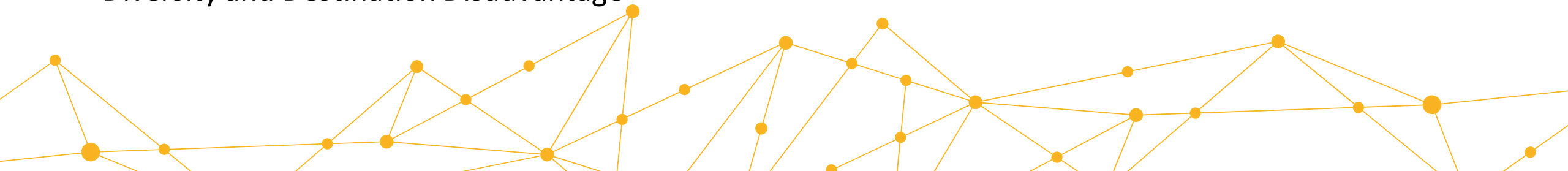
Cloud Backhaul
to VA

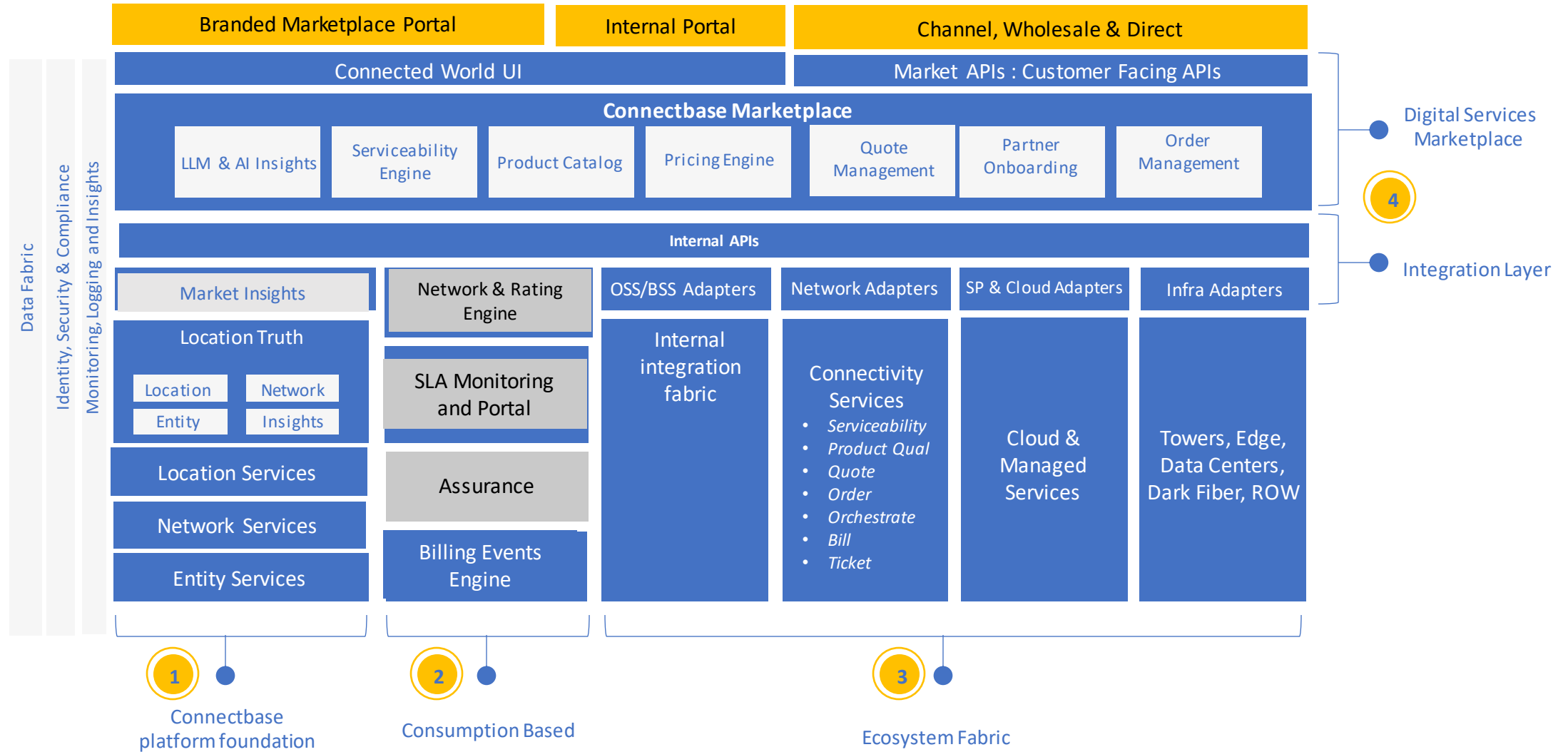
SBA Edge in New England



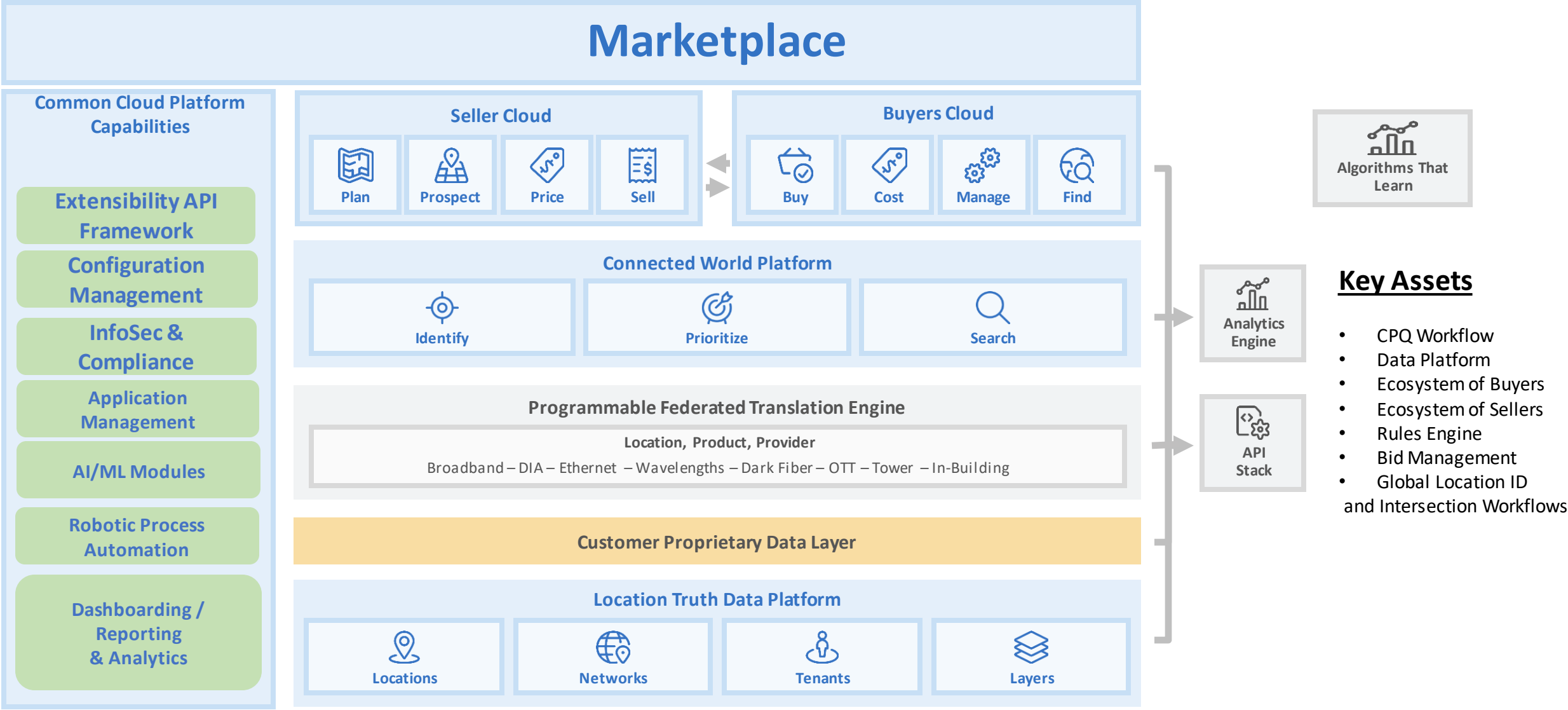
Key Conclusions to Think About

- Connectivity Consumption on Broadband Wired and Wireless Are Increasing Through Both Availability of Highest Speed Access Mediums and More Interactive Video Content
- Peering fabric for wireless traffic vs wireline and shifting traffic local first to optimize latency, performance and risk
- Move to Edge to Process Workloads for AI Drives Need for Local Peering
- Data Sovereignty
- Tax Collection and Remit
- Market Advantage
- Power Disadvantage : Policy and Action around renewables to mitigate power disadvantage
- Land and RE Disadvantage and Advantage
- Content, App, Data Disadvantage
- Density of Demand and Fiber / Wireless Advantage
- Economic Output Advantage
- Diversity and Destination Disadvantage





Connectbase, Creating the Industry's First Platform





Come Build a Connectivity Marketplace with Us!

