

February 8, 2023

Bay Area Supply Chain Resilience Seminar Series
**Public Sector Supply Chains (Pushing
Relief Supplies, Commodity Logistics,
Situational Awareness)**



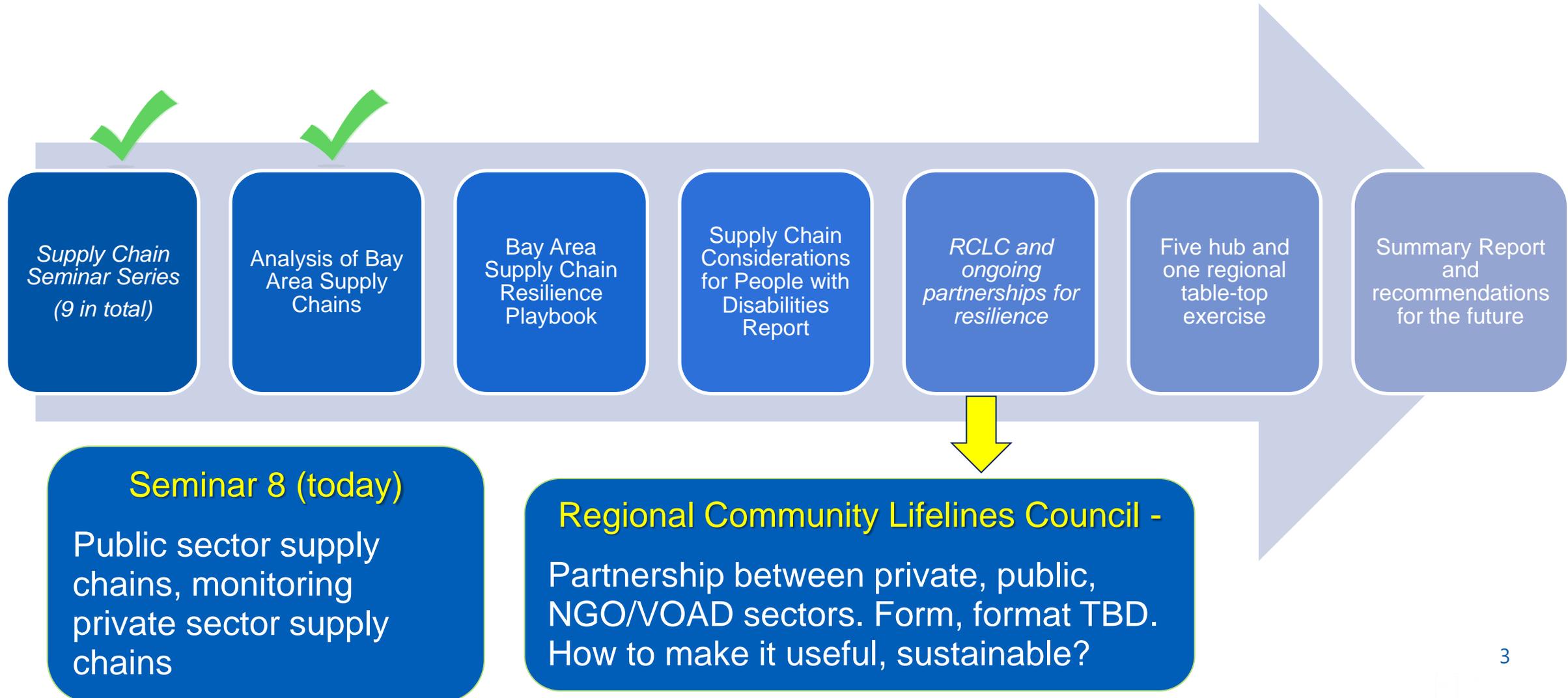
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<http://www.bayareauasi.org/sites/default/files/resources/Bay%20Area%20UASI%20FY2019-2019%20Annual%20Report%20Website.pdf>

Regional Catastrophic Preparedness Grant Program (RCPGP)

- The purpose of the Bay Area's RCPGP Supply Chain Resilience project is to:
 - Improve public/private partnership coordination capabilities for disaster response by enabling the private sector to reconstitute supply chains as rapidly as possible following a disaster.
 - Reduce the impacts of supply chain disruptions on vulnerable populations through the development of guidance and materials to support critical path decision-making and awareness of how people with disabilities in the Bay Area access groceries and food.

What will the Bay Area RCPGP Supply Chain Resilience Grant Produce



Regional Community Lifelines Council

- Develop and improve public/private collaboration for disaster preparedness across the Bay Area region.
- Understand inter-dependencies to enhance lifeline planning, restoration, and reconstruction.
- Develop regional plans and procedures for lifeline restoration and recovery following a major disaster event in the Bay Area.
- Share information about recovery plans, projects and priorities.

Introductions and Logistics

Introduce Yourself in the Chat:

- Name and Jurisdiction/Agency (Organization)

Discussion Logistics

- Please ensure you're muted during presentations, but you can unmute during discussion sections
 - *6 to mute/unmute on phone
- Please raise your hand to ask a clarification question at any time
 - *9 to raise and lower hand on phone
- Use the chat to comment or ask questions at any point during the presentation.

Seminar 8 – Agenda

Quick Recap

Module 1 – Pushing Relief Supplies

Module 2 – Situational Awareness

Learning objectives

- **Understand** ways that public sector responses disrupt pre-existing supply chains.
- **Discuss** alternative methods for ensuring communities have the resources needed in post-catastrophic scenarios.
- **Understand** why and how sources of private sector supply chain information can assist in public sector decision making.

This seminar will focus on how replacement disaster response supply chains affect pre-existing supply chains, and ways in which public sector can gain insight into the health and stability of private sector supply chain operations.

Review – Seminars 1 - 7

Prior seminars you were invited to:

Seminar 1: **Supply chain fundamentals**

Seminar 2: **Supply chain fundamentals – part 2**

Seminar 5: **Supply chains during disasters**

Seminar 6: **Bay Area Commodity Flows Summary**

Seminar 7: **Vulnerable Populations, Non-Traditional, Pharmaceutical and Non-Human Commodity Flows**

Preliminary analysis validations with private (and water) sector partners:

Seminar 3: **Bay Area Commodity Flows: Food**

Seminar 4: **Bay Area Commodity Flows: Water**

Seminar 8: **Public Sector Supply Chains (Pushing Relief Supplies, Commodity Logistics, Situational Awareness)**

MODULE I

Pushing Relief Supplies

Speakers



Kathy Fulton
Executive Director
American Logistics Aid
Network

What are supply chains?

Supply chains are **complex adaptive systems** that target how, when, and where to source and push supply in response to prior, anticipated, and sometimes current pull (demand).

Supply chains involve **logistics** – how to move volume from here to there – but are much more focused on demand dynamics than 5000-plus years of traditional logistics.

Supply Chain Management tries to **calibrate upstream sourcing, midstream movement, and downstream consumption** so that continuous **flow** is as cost-efficient and operationally effective as possible in fulfilling demand and achieving objectives.

Supply Chain Resilience is an emerging practice for **facilitating continuous flow of essential goods and services** (e.g., water, food, fuel, pharmaceuticals, and other critical freight) under severe duress.

Demand Pull and Supply Push

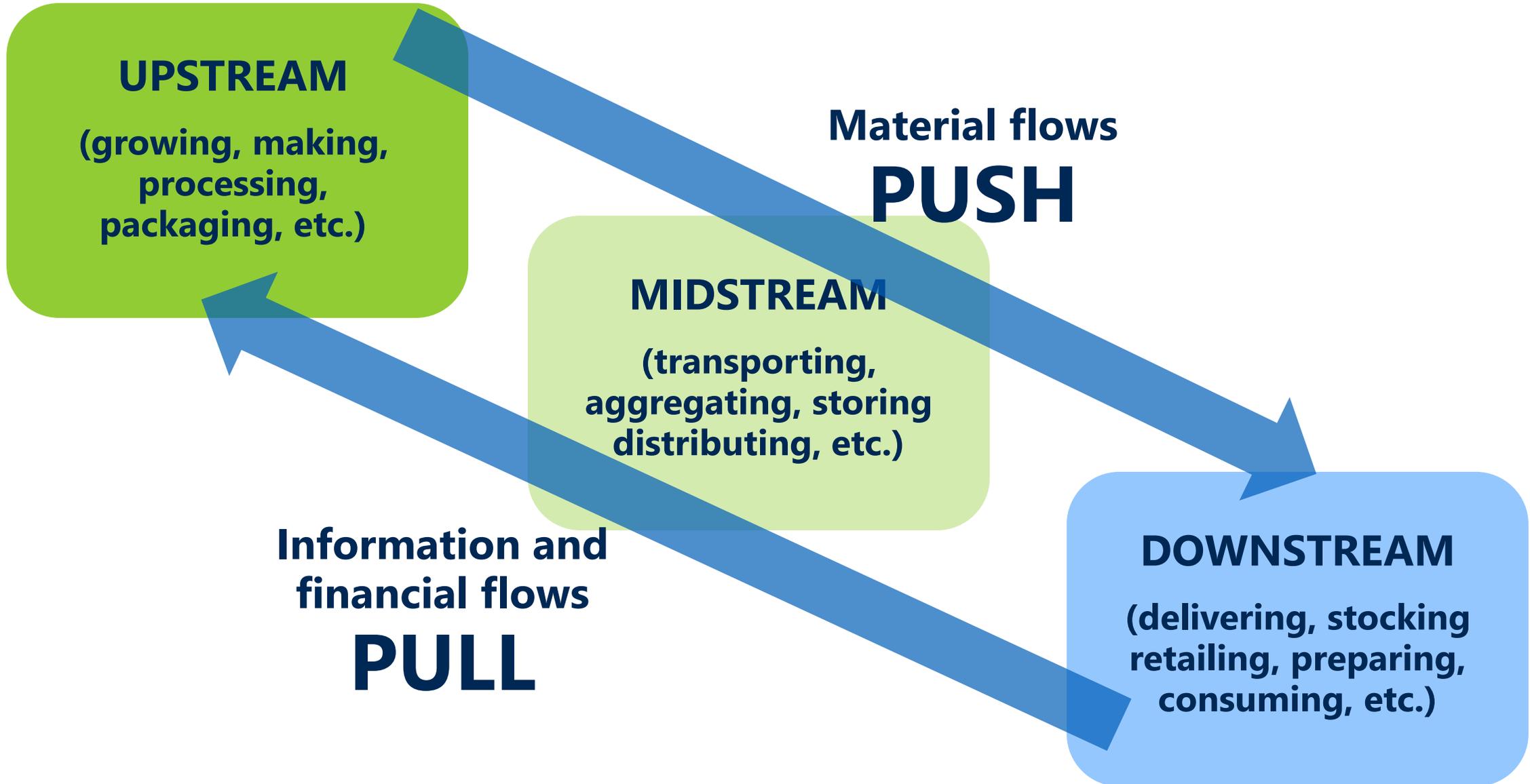
Demand pulls supply

- High vs. low velocity demand (e.g., shopping trips)
- Higher vs. lower marginal demand (e.g., basket size/price sensitivity)
- Dense vs. scattered demand (especially wealth density)

Demand is mostly signaled with credit cards, debit cards, EBT cards, or cash (for food, fuel, and most freight)

Supply pushes toward demand

- Trucks operating from nodes with aggregated stock (food)
- Pipelines (water and fuel) pump from nodes with storage
- More diverse transportation modes the more distant from demand



GOAL:

Continuous Flow

UPSTREAM

(growing, making,
processing,
packaging, etc.)

MIDSTREAM

(transporting,
aggregating, storing
distributing, etc.)

DOWNSTREAM

(delivering, stocking
retailing, preparing,
consuming, etc.)

(In)flexible Capacity

1.33 million cases distributed through Government: FEMA, ARC, DLA



One grocery supplier surged up to 24 million cases



Superstorm Sandy Case Study
FEMA Office of Policy, Program Analysis, and International Affairs
(Palin, 2012)

(In)flexible Capacity

Total private sector capacity was more than 50 times public sector capacity



How Do Disasters Affect Supply Chains?

- ***Demand–supply mismatches are the result of demand shifts, supply reductions and/or coordination failures.*** (Ergun, Hopp, Keskinocak [2022])

Demand Shift	Supply Reduction	Coordination Failure
<p>When demand for a product changes, particularly if the change is sudden, a supply chain may fail to keep up, and hence, a shortage or excess inventory ensues.</p> <p>Note: Demand may or may not equal actual need</p>	<p>Supplies can be interrupted by a wide range of events... If stock or capacity in the supply chain cannot make up for the reduction, a shortage will result.</p>	<p>Even if total supply is sufficient to meet total demand (need), supply chains can fail to achieve a match. For example, communication and information system breakdowns...can make it impossible to communicate demand upstream.</p>
<p>Examples: Fuel, food panic buying ahead of storms Excess inventory at restaurants during pandemic</p>	<p>Examples: PPE during pandemic Saline bags after Hurricane Maria</p>	<p>Examples: Hoarding paper products</p>

National Academies Consensus Study: Recommendations

- I. Shift the focus from pushing relief supplies to ensuring that regular supply chains are restored as rapidly as possible through strategic interventions
- II. Build system-level understanding of supply chain dynamics as a foundation for effective decision support
- III. Support mechanisms for coordination, information sharing, and preparedness among supply chain stakeholders
- IV. Develop and administer training on supply chain dynamics and best practices for private-public partnerships that enhance supply chain resilience

Unintended Consequences of “Push”



**Competes for
Scarce Resources**



**Ignores Last
Mile Constraints**

Recommendation 1: Shift the focus from pushing relief supplies to ensuring that regular supply chains are restored as rapidly as possible through strategic interventions.

Shift the focus from pushing relief supplies

- Flooding an area with relief supplies for an extended period can have the unintended effect of delaying the area's recovery, because relief supply chains often rely on contracting local resources—such as trucks, ships, and delivery drivers—that are the same resources needed by local businesses to get their supply chains back to normal.
- The traditional focus on bringing relief supplies to an affected area to meet unmet demand must be augmented with a focus on understanding the causes of unmet demand—that is, identifying bottlenecks, gaps, and broken links in local supply chains—and pursuing strategic interventions to assist local stakeholders in returning regular supply chains to normal operation as rapidly as possible.

Emergency Management roles in supply chain resilience

Pinch-Hitter

Replace flows
MREs
Bottled Water
Feeding Centers
CPODs
Cross-docks
Trucking

Sometimes competes with existing flow

Informer

Roads Open
Grid Status
Telecom Status
Fuel Status
Demand Dynamics
Big Picture

Gap-Filler

Using supply chain informed targeting:

Supplement flows
MREs
Bottled Water
Feeding Centers
CPODs
Cross-docks
Trucking
Fuel

Facilitator

Prioritizing
Debris Removal
Grid Recovery
Fuel Access
More Time
More Weight
Staging/Drop-and-go spaces
Generators
Deconfliction
Demand Signals

Disruptor

Close Routes
Close Rest Areas
Delay
Neglect
Confuse
Mislead
Compete
Delay
Delay
Delay

“Strategic Interventions”

Module I: Discussion

- Raise your hand to ask a question
 - *9 to raise and lower hand on the phone



MODULE II

Situational Awareness Open Source Information on Supply Chains

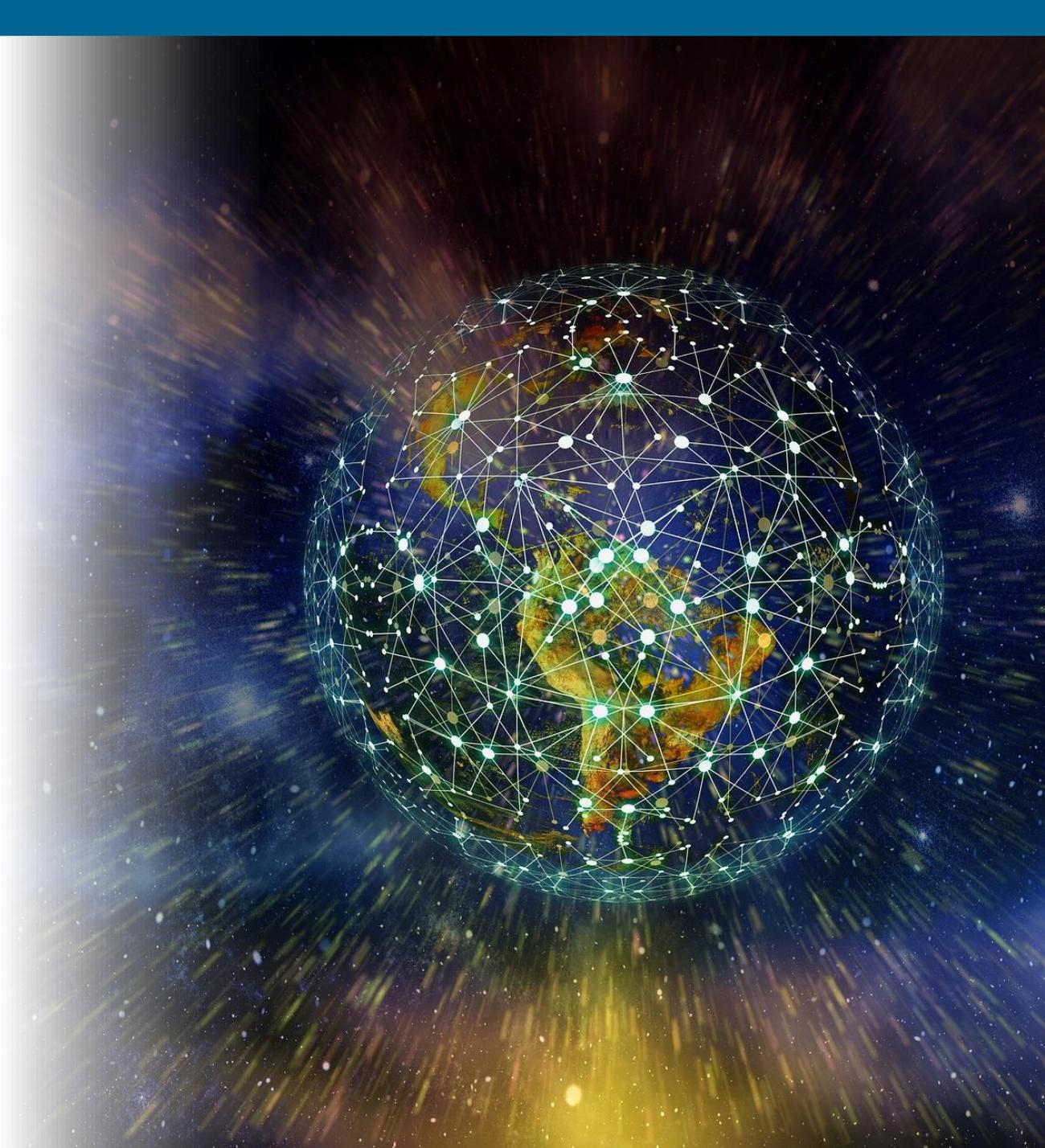
Speaker



Monika Stoeffl
Executive Director
California Resiliency Alliance

The Why

Disasters are no longer
local,
consequence management
is



The Why

Supply chains are adaptive and change, possibly invalidating past assumptions and old knowledge



Review of Open Source Resources

General

US DOT Supply Chain Indicators
FreightWaves
Wall Street Journal Logistics Report

Food Commodities

USDA Agricultural Marketing Service Reports
Fruit and Vegetable Truck Rate Report
Dairy Market News Weekly Reports
CalFresh Data Dashboard - California Department of Social Services
SABER
Walmart Emergency Management Hub

Water

California Reservoirs
Dry Well Reporting System Data
Licensed Water Haulers

Fuel

US Energy Information Administration – This Week in Petroleum
California Energy Commission
Weekly Fuels Watch - Refinery Inputs and Production
Weekly Fuels Watch - Refinery Stocks
Monthly Petroleum Watch

Healthcare / Pharmaceuticals

FDA Drug Shortage Database
RX Open

Transportation Mode Specific - Aviation

Avia National Airspace System Status
FAA - Temporary Flight Restrictions
Flight Radar
Flight Radar – Statistics

Transportation Mode Specific - Marine

Marine Traffic
Marine Traffic – Port Pages (Port of Oakland)
DHL Ocean Freight Market Update

Transportation Mode Specific - Rail

Union Pacific Customer News
BNSF Customer Notifications

Transportation Mode Specific – Mail/Package Delivery

USPS Service Alerts
FedEx Service Alerts
UPS Service Alerts

Waivers, Permits, Exemptions

US DOT
California Department of Education (food waivers for schools)

NOTE: All links provided in chat and downloadable document available at: <https://bayareauasi.org/supplychain>

Module II: Discussion

- Raise your hand to ask a question
 - *9 to raise and lower hand on the phone



Review – What you learned

- **Understand** ways that public sector responses disrupt pre-existing supply chains.
- **Discuss** alternative methods for ensuring communities have the resources needed in post-catastrophic scenarios.
- **Understand** why and how sources of private sector supply chain information can assist in public sector decision making.

Still coming...

- **Know your most important population vulnerabilities –Supply Chain Considerations for People with Disabilities Report** to be developed

Wrap-Up and Next Steps

- Bay Area UASI Resource Library (link in chat)
 - Resource links in chat and in library
 - Recording will be available
- Complete the post-seminar assessment
- BA-UASI closing notes



Next Seminar is on **February 22, 2023** – Public-Private Sector Collaboration
& Improving Survivor Outcomes Via Targeted Government Interventions
Link to register is in chat