OREGON RESILIENCE PLAN
BUSINESS AND WORKFORCE CONTINUITY REPORT

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Task: To assess the workplace integrity, workforce mobility, and building system performance – along with customer viability – needed to allow Oregon's businesses to remain in operation following an event, and to drive a self-sustaining economic recovery.

Senate Committee on Veterans and Emergency Preparedness
House Committee on Veterans' Services and Emergency Preparedness
June 13, 2013

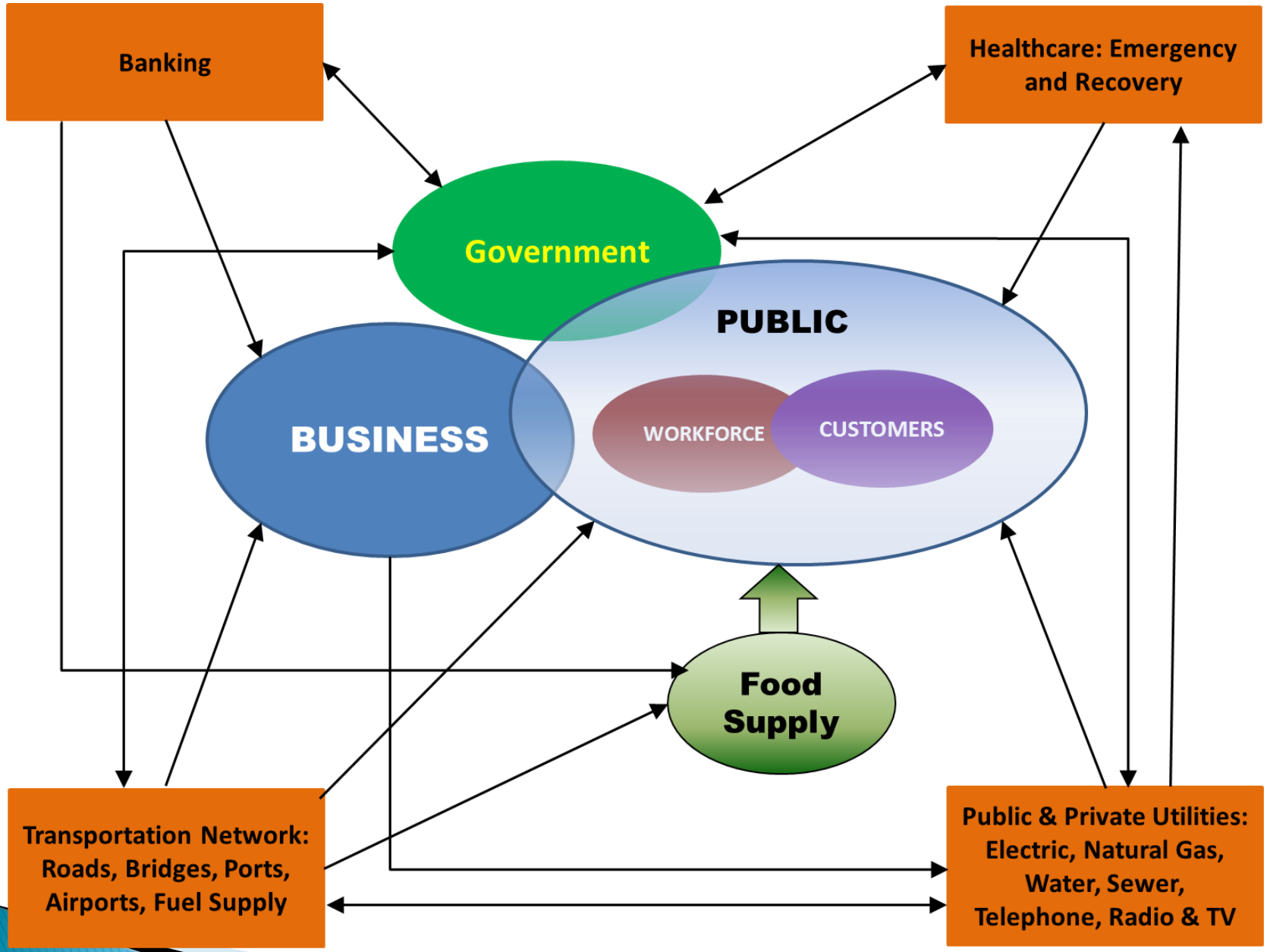
INTRODUCTION

Businesses and their workforces do not live in a vacuum.

Without the following, businesses cannot thrive:

- A government and a system of laws and enforcement of commercial instruments (such as contracts)
- A strong banking system to provide access to capital
- A transportation network to bring in and distribute raw materials and manufactured goods
- And of course, a business has to have workers and customers

Even businesses whose products are “intellectual capital,” such as consultants, and personal services companies, such as barbers or physical therapists, require strong information, communication, and municipal utility infrastructure to function successfully.


Banking
Healthcare: Emergency and Recovery
Government
PUBLIC
BUSINESS
WORKFORCE
CUSTOMERS
Food Supply
Transportation Network: Roads, Bridges, Ports, Airports, Fuel Supply
Public & Private Utilities: Electric, Natural Gas, Water, Sewer, Telephone, Radio & TV

HOW DO EARTHQUAKES AFFECT BUSINESSES?

Small businesses alone account for:

- More than 99 percent of all companies with employees
- Employ 50% of all private sector workers
- Provide nearly 45 percent of the Nation's payroll

If businesses are unable to continue operations after an event, this could:

- Impact effective flow of critical products and services (food, medicine, utilities, financial, etc.)
- Limit individual and community livelihood
- Significantly delay disaster recovery

Few businesses can survive without a domicile for more than 4 weeks. History shows us that if a business cannot reoccupy its office within a month, the business will either relocate or dissolve.

FEMA QuakeSmart Toolkit

Commercial Building Damage

Commercial	None	Slight	Moderate	Extensive	Complete	Total
Metro Region	6,759	10,106	12,270	4,647	461	34,242
Outside Metro	14,333	7,596	11,878	7,904	3,072	44,785
Total	21,092	17,702	24,148	12,551	3,533	79,027

No damage: 27% Light: 22% Moderate: 31% Extensive: 16% Destroyed: 4%

Regional Population and Building Value Data

Residential	Non-Residential	Total (millions of dollars)
213,604	67,722	281,341

Earthquake Hazard Report: April 9, 2012

Earthquakes Break Stuff

HOW DO NATURAL DISASTERS AFFECT REGIONAL ECONOMIES?

- Direct Damage
  - Fixing what breaks, Short Run
- Indirect Damage
  - Economic output lost because broken stuff cannot be used, Short/Intermediate Run
  - Economic output lost because people or firms leave (or do not migrate in), Long Run

Stuff (or Capital) is Essential for Economic Activity

How Much Direct Damage?

Event	Direct Damage Estimate	Share of GDP in Most Affected Area
Tohoku	$210B–$303B	56–81% (4 most affect prefectures)
Kobe	$100B	61% (most affected prefecture)
Katrina	$90B–$125B	27–38% (LA+MS GDP)
Chile 2010	$30B	78% (most affected regions)
Cascadia (Oregon)	$50–$150B??	Oregon GDP 2011 -- $195B (25%–75%)

Damage unique to event and determined by magnitude, location, resiliency. It is impossible to predict in advance.

A DISASTER COULD PERMANENTLY SHIFT THE TRAJECTORY OF THE OREGON ECONOMY

EVERY LARGE NATURAL DISASTER IS UNPREDICTABLE

If damages are similar to those inflicted by Hurricane Katrina, Oregonians will need to work for almost a year (at normal levels) to replace what the disaster destroys.

SPENDING ON RESILIENCE TODAY MEANS SPENDING LESS ON RECOVERY LATER

EVERY LARGE NATURAL DISASTER IS UNPREDICTABLE

At best, we can draw on economic theory and the experiences from previous disasters:

Sendai, Japan:	$300 billion	Kobe, Japan:	$200 billion
Hurricane Katrina:	$160 billion	Northridge, CA:	$100 billion

Ultimately, we cannot know precisely how much damage an earthquake in Oregon will inflict. The precise amount of initial damage depends on magnitude of the event, on the value of property and infrastructure in Oregon, and on what we do to protect our property and infrastructure before the event occurs.

However, we do know that recovery is unlikely to come cheap.

INCENTIVIZE SEISMIC UPGRADE OF EXISTING BUILDINGS

The majority of buildings in Oregon were build before the code change of 1994 and may not meet current seismic building code standards. Building owners do not have the discretionary income necessary to seismically upgrade their assets.

The State of Oregon should incentivize and encourage building owners to seismically upgrade their buildings.

PUBLIC/PRIVATE PARTNERSHIP OPPORTUNITIES

Emergency Operation Centers statewide should pursue public/private partnerships to enhance communication and coordination with the private sector

Partner with public sector – what can your company do to help the recovery effort?

Work with public sector. Invite to tour building, show utility shutoffs, building plans, other important building details, etc.

ASSESS SEISMIC PERFORMANCE OF CRITICAL AND ESSENTIAL PUBLIC BUILDINGS

We know from experience of previous disasters, that a large proportion of the businesses affected by these events will not survive

The key to business survivability begins with the survivability of the buildings that house the businesses. The first step is to ensure Oregon's critical and essential buildings are structurally sound.

EMPLOYEES MUST BE TRAINED TO BE THEIR OWN FIRST RESPONDERS

Encourage all employees to have an emergency plan for their family

Employees will not return to work until they know their families are safe and taken care of…

QUESTIONS?