BUSINESS CONTINUITY AND DISASTER PLAN (BCDP)

Prepared by

Millennium Strategies

As a Supplement to

Passaic County's Comprehensive Economic Development Strategy (CEDS)

July 1, 2015

Draft

Preface:

This Business Continuity and Disaster Plan (BCDP) report was prepared in conjunction with the County's Comprehensive Economic Development Strategy (CEDS) and the Impact Analysis (IA) of Hurricane Irene. It is intended to be part of the overall deliverable of the scope of work envisioned. Throughout the document there are references to our partners Camoin Associates (CEDS) and Maser Consulting (IA) for the work they contributed. Their research relative to the specific tasks has provided additional basis for the development of the BCDP.

As much as the BCDP is part of the CEDS it is also a standalone document. In particular the Executive Summary along with the "pull out section" on how to create a Business Continuity Plan should be standard operations for all county departments and private sector businesses. It is our intent that these sections be referred to and utilized over and over again.

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I.   EXECUTIVE SUMMARY

This report is meant to be a guide for municipalities and businesses in Passaic County as they plan for natural or man-made disasters. The objectives of this report are to:

1) Create the rationale for creating a business and disaster continuity plan (BCDP);

2) Outline the resources currently available in Passaic County;

3) Provide step-by-step guidelines for creating a business and disaster continuity plan;

4) Develop a list of short-term / long-term goals and objectives for Passaic County's strategic recovery process; and,

5) Present a list of assets, initiatives, and actions for the County's consideration.

The underlying principle in the creation of a business continuity and disaster plan is resilience planning. The overarching objective of the BCDP is the reduction of the risks and disruptions caused by crises and the quick and seamless return to normal operations. A continuity plan gives businesses the tools necessary to recover and to grow resilience. Continuity plans incorporate four components: risk aversion, loss reduction, a quick return to operations, and protection of investment(s).

A. WHY PLAN?

All businesses start with an idea: of an individual's desire to create something; to give something to the public; something that will uplift one's life; to which will help revitalize each.

The businesses of today are more inter-dependent than ever before. No longer can one have a dream without working with ten's, hundred's even thousands of different resources to fulfill the mission. Whether it is a "mom and pop" local family business or a mid-size manufacturer or a large corporate entity – all rely on a chain of suppliers and workers to perform in harmony.

As the business grows from the seed planted, nurtured to become a full expanded entity the course of events outside of your own sphere of influence so to expands. Today not only are natural disasters a danger, but so too are man-made difficulties and calamities that may confront your business' survival! How you react to such calamites will determine your business' ability to survive.

Just as you planned to see your dream become a reality so to must you plan to see your dream continue. A Business Continuity Plan (BCDP) is the blue print for the future of the work you created. It is your guide to growth, uplifting human spirit, doing public good and revitalizing your community.

Using basic demographic profiles of the county a quick sketch of the economic conditions businesses confront is developed. In this context we can see why and how business continuity and disaster planning occurs. Consequently, what happens when a disaster occurs? How is the business climate affected?

Passaic County is a rich and diverse county. The main industry drivers are: retail, health care and manufacturing sectors. These three sectors contribute greatly to the economy of the county.

- ➢ In Passaic County both the retail and health care clusters have 14% of the 2014 jobs while 10% of the jobs are in manufacturing.

- ➢ There are more jobs in these clusters in Passaic County than in the state as a whole.

- ➢ Combined roughly 38% of the 2014 jobs, or 71,603 jobs.

Thus, their potential loss has a great impact on the county as a whole; and why their ability to recover and restore normal operations is so critical.

Though the overall economic outlook for Passaic County is strong, and there are growing industry and employment sectors, there are a couple of areas of concern as well. The educational attainment in the county lags behind the state; and two of the tree top industry clusters average wages are lower than the county and state averages. This can be problematic when looking from the standpoint of business continuity moving forward: if a business in these sectors closes where will the employment go to and is there training?

B. RESOURCES IN PASSAIC COUNTY

As we shall see the purpose of a business continuity plan or disaster plan is "to recover and to return" to business as soon as possible. The increasingly global business climate and unpredictable weather patterns mean that businesses and municipalities must plan for any

possible crisis. "Recover and Return" is the process and therefore planning is crucial in doing so.

The report uses interviews with key stakeholders and focus group sessions to detail what Passaic County is doing to ensure business and disaster continuity. Data was gathered through interviews, a focus group session with the county's emergency responders, and several visioning sessions with county and municipal officials. Additionally, this report utilizes the county's disaster planning documentation and preparedness plans.

We would like to acknowledge the County Office of Emergency Management (OEM) for their support and guidance. In our preparations for this report through the review of numerous resources we have determined that the County OEM is one of the finest in the State of New Jersey; and should be commended and utilized to the utmost extent possible.

Once an emergency occurs, the immediate crisis dictates which aid responders are utilized, but the function is to provide immediate care and resources. Once the immediacy of the event subsides, the needs of individuals, businesses and communities' shifts to longer term, semi-permanent needs. Finally, the response moves to permanent structure and infrastructure reconstruction to return those affected to full capacity.

Immediate: OEM/BCDP	Transitional: Secondary sources, Technology/Cloud, SBA loans, grants, lines of credit	Permanent: Insurance
immediate safety concerns	semi-permant housing	permanent infrastructure reconstruction
food, shelter, and safety	infrastructure re-building	full shelter
	assessment of existing strutures	
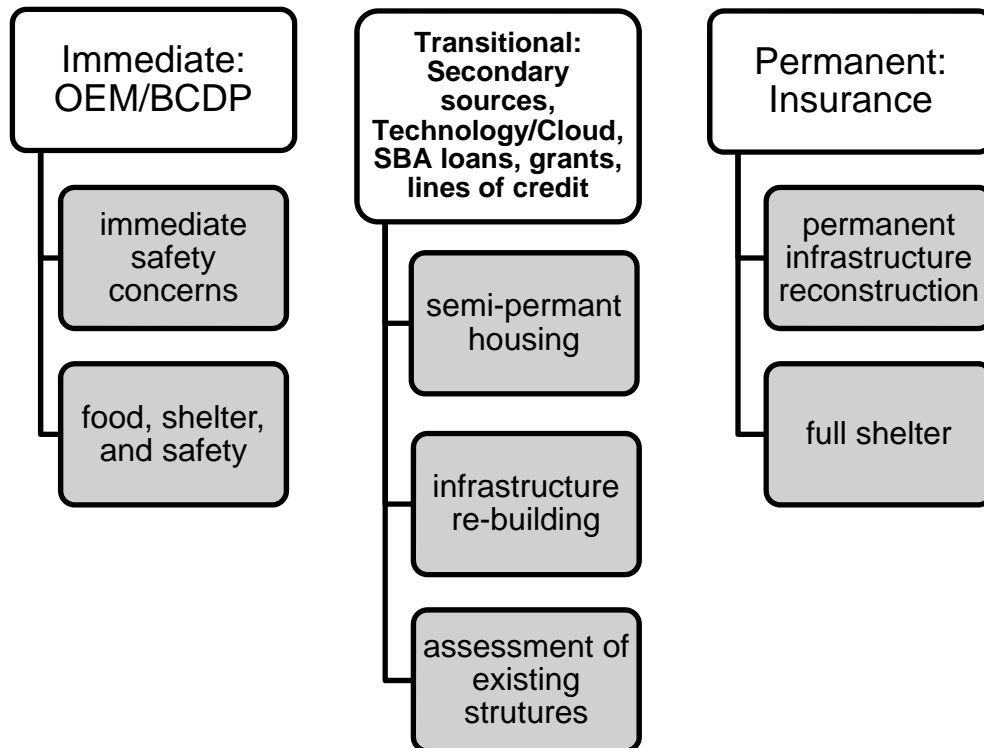
❖ Three troubles areas were identified by the data:

1. Communications;   2.Ppartnerships;   3.Eeducation.

❖ Two types of communication barriers emerged from the data gathering.

1) The movement of information through the channels of authority, especially the movement of information to front-line responders and local businesses.

2) The communication of status updates through established channels of communication.

In Passaic County, we found the issues described as such: a need to have a disaster center to contact; access to who to call about resources, water clean-up, etc.; and, a place for the public to get updated information about where to stay away from during an emergency.

❖ Below is a summary of the responses from stakeholder interviews, in categories:

I. IMPEDIMENTS OR BOTTLENECKS

- Access to who to call about resources, water clean-up, etc.;

- Place for public to get updated information about places to stay away during

- Better Communications with PSE&G;

II. ASSISTANCE NEEDED

- One agency to do donation management;

- A way for local contracts to get in place;

- Work with NGOS to set up place with basic needs.

- Maintain power continuity particularly for major employers and educational institutions

- Better Communications with PSE&G;

- Silt is building up in the river basis so the riverbed is rising to make the river closer to the outflow pipe

- When Route 23 closes it impacts Wayne, need to raise the roadway to allow for growth along Route 23;

- Remove barriers down the center of Hamburg Turnpike which are bad for businesses and first responders;

- Put all utilities below ground;

- Improve roads to make it possible for big trucks to get up there safely.

- Housing: after a disaster;

- Flooding: remediate the Passaic River flooding. Route 20 and 46 frequently flood due to heavy rains, snow pack melting, and rising tides;

▪ Radio communications when to declare a disaster – difficult and poor with State

C. GOALS AND RECOMMENDATIONS

Using the information gathered through interviews and a survey of emergency management documentation this report highlights several key recommendations for the county government. These recommendations provide a guide for actions to be undertaken by the county during and immediately after an emergency or disaster.

In order to best understand the recommendations (which have been answered throughout) made the following goals have guided this report:

▪ Highlight the steps to recovery after a man-made or natural disaster with a focus on the strategies and priorities needed for public safety and economic revitalization.
   o To facilitate self-sufficiency and resiliency;
   o To promote the social and economic well-being of the community.
▪ To maximize the resources of the county and its municipalities and businesses
   o To identify the gaps in preparedness;
   o To facilitate self-sufficiency and resiliency;
   o To develop strategic partnerships between the government, nongovernmental organizations, businesses, and community members.
▪ To understand the current level of preparedness and to assess the strategic needs of the business community.

And, the report has the following recommendations (See Appendix # for full Matrix -TBD):

1. **Establish one agency/organization for donation management**.

2. **Increase education and communication about issues around flooding prevention and recovery issues**:
   o Establish standing emergency contracts to reduce delays during emergency around procurement issues.
   o Increase non-emergency communication around why the precautions are made and why it is imperative that the public comply.
   o Market and promote disaster center and available programs.

3. **Work regionally to reduce flooding**:
   o Continue to buy out properties that are in flood prone areas.
   o Work with municipalities to understand issues around development in flood prone areas to reduce flooding.
   o Upgrade storm water infrastructure capacity in all municipalities.
   o Conduct debris removal on all watercourses as needed.

- o Create a tool for the county and individual communities to share best practices, etc. County offices can manage and provide review of master plan and codes for municipalities as necessary.
- o Update the County's master planning document to include a section on severe and repetitive flooding.

4. **Improve ability to communicate during and immediately after a natural disaster**:
   - o Establish a countywide Wi-Fi and radio access system that is deployable and independent of local systems.
   - o Update and review regularly all State of Emergency Shared Service Agreements.
   - o Create a publicly available live GIS System that can be updated in real-time to provide information about where there are road closures and other hazards.
   - o Develop a static map that provides information on the roads that are likely to close in case of various levels of flooding or other natural disasters.
   - o County to prepare mass emails to go out to business with tips on how to prepare for the upcoming emergency.

5. **Support businesses in their ability to increase resiliency and survive emergency events**:
   - o Establish a countywide list of available real estate that can be accessed following an event to house inventory and move operations of businesses.
   - o Establish a funding stream that is available to businesses impacted that they can access quickly and easily to assist with working capital, inventory replacement, and other issues that may arise.
   - o Increase communication of available programs to assist businesses impacted by disaster.

D. OVERVIEW OF PASSAIC COUNTY

The following is an overview of Passaic County. It offers a brief summary of the county's building stock, estimated losses due to storm damage, total direct annualized losses. The information presented here comes from data gathered and presented by our partners Camoin Associates.

Passaic County Building Types

- Wood 75%
- Steel 6%
- Masonry 17%
- Concrete 2%
- Manufactured 0.2%

Passaic County Building Stock

- Residential 89%
- Commercial 8%
- Industrial 2%
- Other 1%

Direct Building Loses
(in millions of dollars)

	Building	Content	Inventory
Residential	$293.46	$185.74	
Commercial	$198.24	$583.43	
Industrial	$127.17	$350.48	
Others	$23.74	$138.73	

Estimated Damage to Essential Facilities

Facility	None	Moderate	Substantial	Loss of Use
Schools	144	38		32
Police	8	6	1	4
Hospitals	3			
Fire	17	7		5

Business Interruption Losses
(in millions of dollars)

Category	Income	Relocation	Rental Income	Wage
Residential	$0.07	$0.66	$0.39	$0.19
Commercial	$3.73	$0.96	$0.58	$4.09
Industrial	$0.05	$0.1	$0.01	$0.1
Others	$0.35	$0.01	$0.19	$5.73

Building Related Economic Losses

Direct Building Losses	Buildings	$0.642 billion
	Contents	$1.258 billion
	Inventory	$0.073 billion
Business Interruption Losses	Relocation	$0.002 billion
	Capital Loss	$0.004 billion
	Wages	$0.010 billion
	Rental Income	$0.001 billion
Total Loss		$1.991 billion

E. CONCLUSIONS

The purpose of a BCDP is to build resilience and ensure that normal operations can continue smoothly and resume quickly after a disaster. While the term disaster connotes large-scale calamities, it is important to keep in mind that a good BCDP prepares organizations for

any eventuality—large and small-scale crises as well as natural and man-made hazards. Business continuity planning means putting measures in place to safeguard people and assets during a crisis event and having a plan of action before an event occurs.

The planning team should seek out information on forming relationships with external sources of resources. The team should contact the local emergency management organizations (OEM), hospitals, insurers, suppliers, utilities, and contractors. Finally, the planning team should meet with the organizations insurance carriers to review all policies: Regularly!

II.   INTRODUCTION

The objective of this report is to outline the rationale for developing a business continuity and disaster plan (BCDP) and to clearly articulate the resources available for and the process of creating a plan. A business continuity plan (BCDP) provides the resources and tools needed to plan for and respond to crises. This report is meant to be a guide for municipalities and businesses in Passaic County as they plan for future disasters, whether natural or man-made.

Resilience planning is the underlying principle that guides this analysis. There is a close connection between continuity plans, disaster planning, and resiliency. All three have the overarching objective of the reduction of the risks and disruptions caused by crises and the quick and seamless return to normal operations. A continuity plan give businesses the tools necessary to recover and to grow resilience; whereas a disaster plan is a specific form of continuity planning that focuses on disaster relief. In this context, resilience is a vital aspect of sustainable development and resilience planning is critical to the ability of municipalities' and businesses' to build the capacity to absorb and recover from disasters. Planning helps municipalities and businesses to return to operations quickly and it limits the interruption to services. Resilience planning is especially important for businesses and municipalities as they must ensure delivery continuity for essential services during and following a crisis. Furthermore, while municipalities regularly plan for disruptions in services, these plans typically do not cover business recovery. Therefore, businesses need to develop a comprehensive continuity plan for themselves.

Continuity and disaster plans must consider every possible eventuality and its costs to business service. Continuity plans incorporate four components: risk aversion, loss reduction, a quick return to operations, and protection of investment(s). While it is impossible to plan for every occurrence, a goal of a BCDP is to prevent loss and to reduce risk where possible. These twin goals allow businesses and municipalities to return to operations quickly and to, therefore, protect their investments. Continuity planning involves preparing for the ability to respond to and recover effectively from disruptions in services by outlining where operations will be housed after an event, who will lead the recovery efforts, and anticipating how long the recovery process will take. A good continuity plan, to the extent possible, makes provisions for every crisis with the goal of building organizational resilience.

Resilience is not new. Human settlements have always needed to respond to and recover from natural disasters in order to survive--storms, drought, plagues, etc. Andrew Zolli adds the qualification that resilience includes the need to continue and to recover in the face of rapid changes. As the pace of modern life accelerates and communities and nations become increasingly urbanized, the need to respond to changes is important and planning for changes cannot be ignored. According to the United Nations Office of Risk Reduction (UNISDR), "[a]ll urban governments must ensure delivery continuity for essential services during and following crises, including access to clean, piped water, sanitation and waste management, transport and energy, and safe and affordable accommodation."

While the need to be resilient is not new, as the world's climate has changed communities are facing increasing threats from natural disasters and changing weather patterns; the introduction of the term "super-storm," for instance, highlights this changing and evolving process. Additionally, man-made disasters, like cyber-attacks and electronic-based threats, highlight the need for protection from multiple threats. Furthermore, as a society, we, are increasingly aware of the limits of our resources and the need to sustain them for the future. Rebecca Tuhus-Dubrow defines sustainability as the belief in the wise use of resources and says that it is concerned with the governorship of the earth. Thus, many resiliency preparations are linked to good governorship of our resources; especially, as we seek new and better ways to do old tasks.

It is the Office of Emergency Management's (OEM) role to do disaster planning but they cannot anticipate every need of every business and municipality. OEM's primary role is large-scale disaster planning. The role of continuity planning at the municipal and business level is to quickly return to operations. And, therefore, is a function of economic development. To create growth, uplift human spirit, do public good, and revitalize communities.

Thus, municipalities and businesses need to plan, review and update their plans, and exercise the plans. Through these simple steps confidence and knowledge is built that will be invaluable in the event of a disaster. What happens if you do plan? Planning allows municipalities and businesses to build supply chain resilience. This resilience facilitates continued communications and supply chain continuity as well as a quick return to operations.

Businesses of today are more inter-dependent than ever before. No longer can one have a dream without working with ten's, hundred's even thousands of different resources to fulfill the mission. Whether it is a "mom and pop" local family business or a mid-size manufacturer or a large corporate entity – all rely on a chain of suppliers and workers to perform in harmony.

As the business grows from the seed planted, nurtured to become a full expanded entity the course of events outside of your own sphere of influence so to expands. Today not only are natural disasters a danger, but so too are man-made difficulties and calamities that may confront your business' survival! How you react to such calamites will determine your business' ability to survive.

This paper is to help you better understand the need to plan. Just as you planned to see your dream become a reality so to must you plan to see your dream continue. A Business Continuity Disaster Plan (BCDP) is the blue print for the future of the work you created. It is your guide to growth, uplifting human spirit, doing public good and revitalizing your community.

III.   MARKET CURRENT CONDITIONS

The following chapter provides an overview of the current economic conditions of Passaic County. It focuses on the current market conditions and the major industry clusters in the county. The discussion is meant to provide a quick sketch of the economic conditions businesses confront and to fill in the context in which business continuity planning occurs.

A. OVERVIEW

The chapter begins by giving a basic demographic profile of the county, an analysis of commercial and industrial properties and values along with Small Business Administration loans and losses, and then examines three major industry clusters: retail, health care, and manufacturing. These clusters were chosen because they represent three of the largest employment sectors in Passaic County and, therefore, are critical to the restoration of normal operations after a crisis (the fourth being government).

Passaic County is one of the northern most counties in New Jersey. It is composed of sixteen municipalities (See Map Inset):

Source: RootsWeb
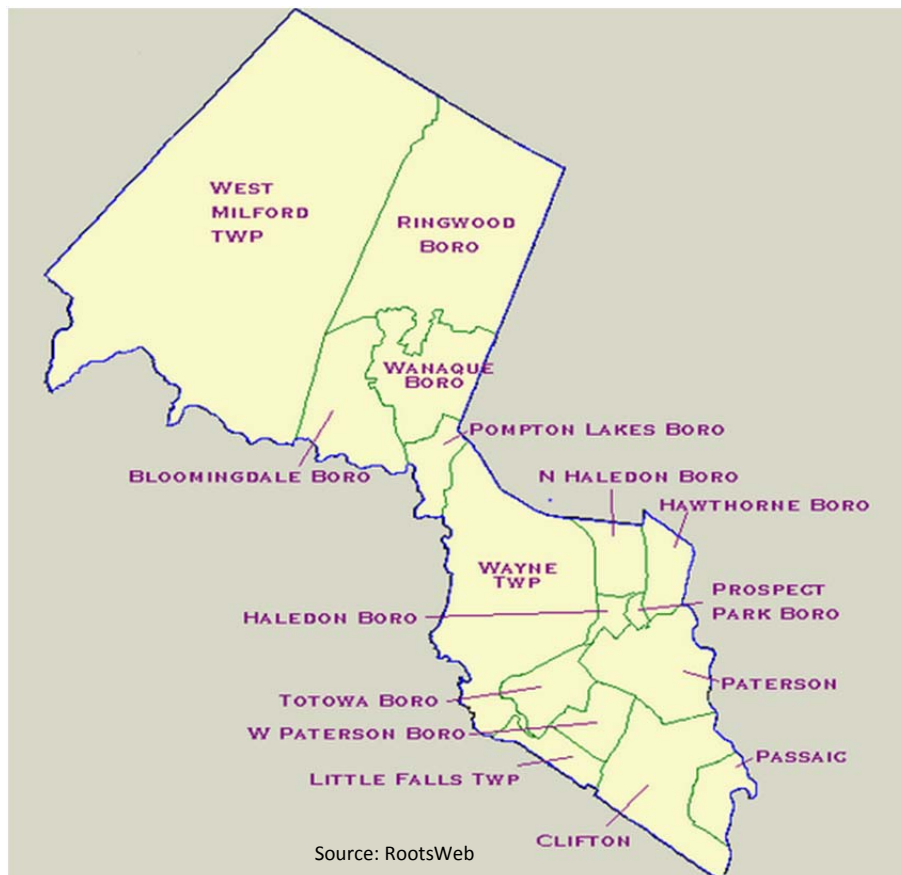
1. Bloomingdale Borough
2. Clifton City
3. Haledon Borough
4. Hawthorne Borough
5. Little Falls Township
6. North Haledon Borough
7. Passaic City
8. Paterson City
9. Pompton Lake Borough
10. Prospect Park Borough
11. Ringwood Borough
12. Totowa Borough
13. Wanaque Borough
14. Wayne Township
15. West Milford Township
16. Woodland Park Borough

Although the percentage increase in population lags that of the state, from 2010 to 2013, the population of Passaic County did increase by more than seven thousand people. Of the sixteen municipalities in Passaic County, all but one experienced an increase in population (See Table 1). Woodland Park experienced the largest increase in population and Pompton Lake experienced the smallest increase.

Paterson City is the only municipality in the county to lose population between 2010 and 2013. It is also one of only six municipalities in the state with a population greater than 100,000 (NJ Department of Labor and Workforce Development, 2014). Paterson City's population loss is notable because it is counter trend for the state. Of the municipalities in the state with populations over 50,000, urban areas experienced more population growth than suburban areas, with the other exceptions being Trenton and Camden. This is a trend that has been quantifies by Rutgers, The State University of New Jersey this past year; and it is expected to continue (Hughes and Seneca 2014).

Table 1

Population of Passaic County by Municipality			
Municipality	**2010 Population**	**2013 Population**	**Population Change**
Bloomingdale Borough	7,656	7,742	1.1%
Clifton City	84,136	85,390	1.5%
Haledon Borough	8,318	8,385	0.8%
Hawthorne Borough	18,791	18,987	1.0%
Little Falls Township	14,432	----	----
North Haledon Borough	8,417	8,485	0.8%
Passaic City	69,781	70,868	1.6%
Paterson City	146,199	145,948	-0.2%
Pompton Lake Borough	11,097	11,148	0.5%
Prospect Park Borough	5,865	5,913	0.8%
Ringwood Borough	12,228	12,335	0.9%
Totowa Borough	10,804	10,907	1.0%
Wanaque Borough	11,116	11,208	0.8%
Wayne Township	54,710	----	----
West Milford Township	25,850	----	----
Woodland Park Borough	11,819	12,274	3.8%
Passaic County	**501,624**	**506,998**	**1.10%**
New Jersey	**8,791,936**	**8,911,502**	**1.40%**
Sources: American Fact Finder and 2010 Demographic Profile, US Census Bureau.			

Passaic County is racially and ethnically diverse. In 48% of its households a language other than English is spoken at home as compared to the state average which is 30%. This is an important factor to recognize for business continuity planning, as the planning documents should have bi-lingual options. Moreover, 39% of the county is of Latino/Hispanic origin. This figure is substantially higher than the Latino/Hispanic population average for the state (19%) and the New York Metropolitan Statistical Area (24%).[1]

The educational attainment in the county lags behind the state. Eighty-two percent of adults in the county are high school graduates (88% for the state) and 26% of adults hold a bachelor's degree or higher (36% for the state). The median income of the county is $57,654 which is lower than the state average of $71,629. Passaic County also has more multi-unit housing structures than the state at 53% versus 36%. The overall demographic outlook for the county is mixed. The county has a higher unemployment rate than the state and its population has a longer average commute time. Additionally, only 30% of its workforce works in the county.

The map below highlights the flow of employed people into Passaic County between 2008 and 2012. Workers are crossing the county boundary from all parts of the state. Therefore, in business continuity planning it is crucial to consider the impact that infrastructure that roadways and transportation have on the businesses.

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[1] "The New York-Newark-Jersey City, NY-NJ-PA Metropolitan Statistical Area (New York MSA) includes the five counties that comprise New York City — Bronx, Kings (Brooklyn), New York (Manhattan), Queens, and Richmond (Staten Island) — and 20 other surrounding counties located in southeastern New York state, northern New Jersey and eastern Pennsylvania." US Department of Housing and Urban Development, 2013

Employed, civilian inbound migration flows to Passaic County, New Jersey

2008-12 5-year American Community Survey Estimates
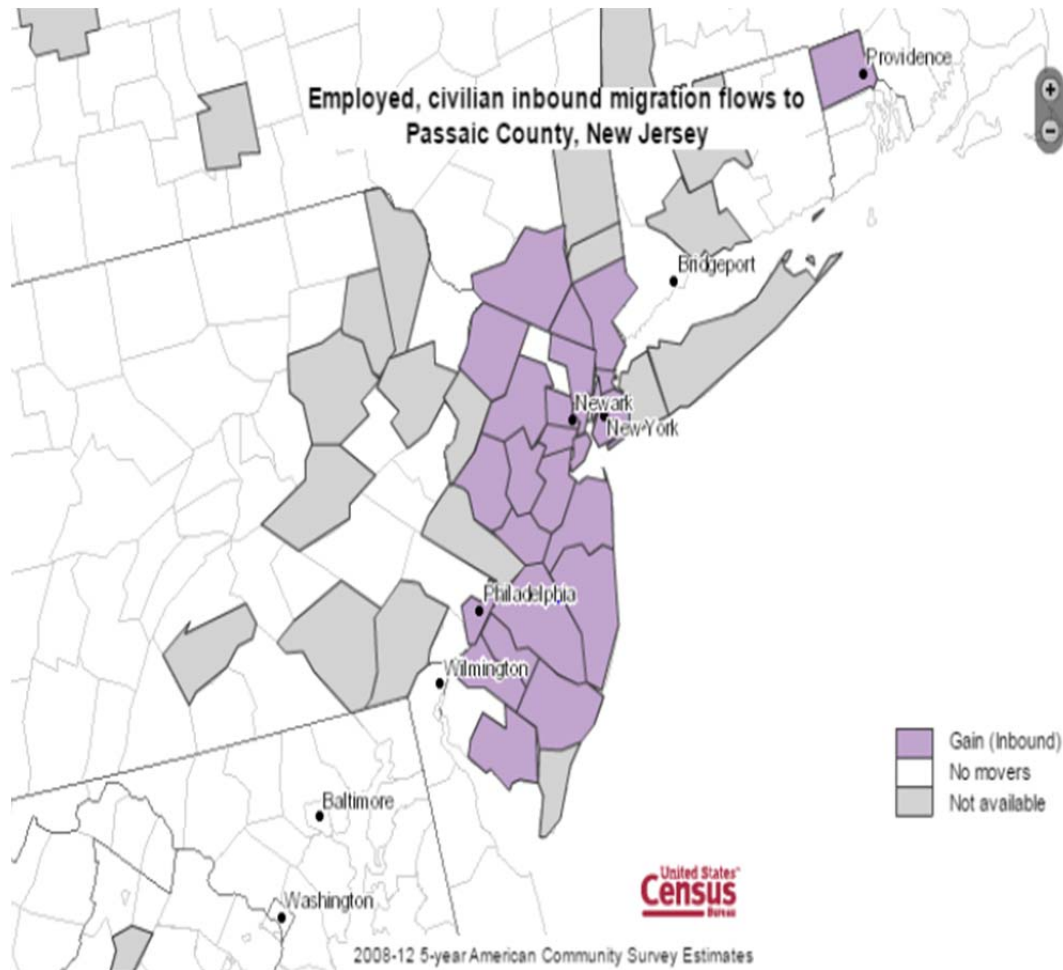
The business profile of Passaic County is complex. When the industry codes (NAICS) are filtered for industry sectors that have 100 or more business establishments, there are 7,500 business establishments in Passaic County (Bureau of Labor Statistics; hereafter BLS). These establishments employed more than 53,000 people as of the third quarter of 2014. This represents roughly 10% of the county's total population. Industries with fewer than 100 business establishments employed almost 70,000 people in Passaic County. Moreover, the total wages for all private business establishments in the county were almost $1.4 billion for the third quarter of 2014 (BLS); therefore impactful. Losses in these sectors will impact the economic and social fabric of the county. Can the county absorb the loss?

When the business inventory is examined, in 2014 Passaic County had 8,053 commercial parcels and 1,486 industrial parcels (See Table 2). There was a small decrease in these numbers between 2011 and 2014, around 1%. When these numbers are disaggregated, there is variation

between municipalities. Of the municipalities in Passaic County, the top three with gains in parcels are Wanaque, Haledon, and Bloomingdale (highlighted in yellow). Four municipalities saw losses; they are Little Falls, Patterson, West Milford, and Woodland Park.

Table 2

	Commercial Parcels			Industrial Parcels			Non-residential Parcels		
Commercial and Industrial Parcels, 2011 to 2014									
Municipality	**2011**	**2014**	**Change**	**2011**	**2014**	**Change**	**2011**	**2014**	**Change**
Bloomingdale	102	107	5%	2	4	100%	104	111	7%
Clifton	1,100	1,102	0%	443	429	-3%	1,543	1,531	-1%
Haledon	128	145	13%	26	25	-4%	154	170	10%
Hawthorne	273	273	0%	109	116	6%	382	389	2%
Little Falls	201	196	-2%	40	40	0%	241	236	-2%
North Haledon	83	87	5%	6	6	0%	89	93	4%
Passaic	1,142	1,139	0%	117	116	-1%	1,259	1,255	0%
Paterson	3,356	3,276	-2%	499	488	-2%	3,855	3,764	-2%
Pompton Lakes	166	164	-1%	11	11	0%	177	175	-1%
Prospect Park	59	60	2%	2	2	0%	61	62	2%
Ringwood	57	58	2%	25	25	0%	82	83	1%
Totowa	240	239	0%	63	64	2%	303	303	0%
Wanaque	92	105	14%	18	18	0%	110	123	12%
Wayne	591	600	2%	84	84	0%	675	684	1%
West Milford	285	279	-2%	28	29	4%	313	308	-2%
Woodland Park	227	223	-2%	29	29	0%	256	252	-2%
County Total	**8,102**	**8,053**	**-1%**	**1,502**	**1,486**	**-1%**	**9,604**	**9,539**	**-1%**
Source: Maser Consulting, 2015									

When the assessed equalized values are examined (See Table 3), county-wide there was a 22% loss in value at the parcel level post-Irene affecting 13,136 parcels. The largest losses in values were in Clifton (31%), Totowa (63%), and Wayne (30%). Moreover, there is a large difference in the losses in these three municipalities and the remaining towns. For instance, after Wayne the next level loss is in Haledon at 9%.

Table 3

EQUALIZED ASSESSED IMPROVEMENT VALUES, 2011 TO 2014					
Municipality	**Parcels**	**Equalized Assessed Improvement Value**			
		2011	**2014**	**Loss**	**Percent**
Bloomingdale	112	$38.5	$37.4	-$1.1	-3%
Clifton	1,940	$2,076.0	$1,434.1	-$641.9	-31%
Haledon	288	$123.5	$112.5	-$11.0	-9%
Hawthorne	486	$109.7	$101.9	-$7.8	-7%
Little Falls	64	$5.8	$5.6	-$0.3	-4%
North Haledon	174	$17.8	$17.0	-$0.8	-4%
Passaic	1,904	$201.9	$193.0	-$9.0	-4%
Paterson	5,202	$1,192.6	$1,100.3	-$92.3	-8%
Pompton Lakes	286	$91.8	$85.5	-$6.3	-7%
Prospect Park	114	$21.2	$19.8	-$1.5	-7%
Ringwood	20	$6.9	$6.5	-$0.5	-7%
Totowa	398	$223.2	$83.7	-$139.5	-63%
Wanaque	210	$66.1	$61.6	-$4.5	-7%
Wayne	990	$396.4	$277.8	-$118.6	-30%
West Milford	550	$140.0	$135.2	-$4.8	-3%
Woodland Park	398	$86.4	$83.5	-$3.0	-3%
County Total	**13,136**	**$4,798.0**	**$3,755.1**	**-$1,042.8**	**-22%**

When the impact of Hurricane Irene is mapped onto the businesses in the county, there was $15 million in business losses in 2011 (See Table 4)[2]. Of these losses, there was roughly $9 million in losses to business contents (i.e. personal property, auto losses, etc.) and over $6 million in losses to real estate. Of the losses verified by the Small Business Administration in Passaic County, the largest losses were to businesses in Clifton, Passaic, Paterson, and Wayne

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[2] The "Damaged Property" data reflects individual loans; therefore there may be multiple listings for each municipality.

(highlighted in yellow); while the largest percentage losses were in Prospect Park, Hewitt, and Wayne.

Table 4

Small Business Administration Disaster Loans, 2011					
Damaged Property City Name	**Total Verified Loss**	**Verified Loss Real Estate**	**Percentage Real Estate Loss**	**Verified Loss Content**	**Total Approved Loan Amount**
PATERSON	500.00	0.00	0	500.00	0.00
POMPTON LAKES	2,950.00	0.00	0	2,950.00	0.00
PATERSON	32,549.00	0.00	0	32,549.00	0.00
PATERSON	7,086.00	161.00	2	6,925.00	0.00
WEST PATERSON	216,423.00	9,662.00	4	206,761.00	49,200.00
WOODLAND PARK	19,200.00	1,161.00	6	18,039.00	0.00
CLIFTON	17,768.00	1,129.00	6	16,639.00	14,000.00
PATERSON	3,141,412.00	585,356.00	19	2,556,056.00	278,300.00
PASSAIC	2,455,183.00	715,233.00	29	1,739,950.00	687,200.00
POMPTON PLAINS	174,575.00	54,237.00	31	120,338.00	0.00
CLIFTON	1,594,110.00	536,695.00	34	1,057,415.00	972,900.00
HALEDON	4,806.00	1,806.00	38	3,000.00	0.00
PATERSON	1,776,025.00	814,839.00	46	961,186.00	638,500.00
WOODLAND PARK	216,651.00	105,924.00	49	110,727.00	92,000.00
WAYNE	2,766,705.00	1,354,124.00	49	1,412,581.00	2,105,800.00
HAWTHORNE	507,260.00	293,058.00	58	214,202.00	188,100.00
PATERSON	679,346.00	409,695.00	60	269,651.00	376,600.00
PATERSON	177,385.00	122,888.00	69	54,497.00	42,100.00
WOODLAWN PARK	92,110.00	74,472.00	81	17,638.00	59,100.00
WEST MILFORD	74,073.00	62,677.00	85	11,396.00	81,600.00
PATERSON	121,534.00	104,364.00	86	17,170.00	0.00
BLOOMINGDALE	89,530.00	77,180.00	86	12,350.00	0.00
PATERSON	148,519.00	128,744.00	87	19,775.00	0.00
TOTOWA	52,376.00	46,047.00	88	6,329.00	49,500.00

LITTLE FALLS	313,080.00	283,780.00	91	29,300.00	15,800.00
CLIFTON	44,866.00	41,316.00	92	3,550.00	0.00
IRVINGTON	39,924.00	38,324.00	96	1,600.00	0.00
LITTLEFALLS	54,175.00	52,275.00	96	1,900.00	45,000.00
PROSPECT PARK	6,304.00	6,304.00	100	0.00	4,500.00
HEWITT	12,673.00	12,673.00	100	0.00	0.00
WAYNE	497,882.00	497,882.00	100	0.00	0.00
Totals	**15,336,980.00**	**6,432,006.00**		**8,904,974.00**	
Source: Small Business Administration, Disaster Loan Data, Fiscal Year 2011					

Roughly 8% of the businesses or 1,528 businesses in the county are in the flood zone.[3] The top three municipalities with businesses in the flood zone are Wayne Township (580 businesses), Paterson City (349 businesses), and Woodland Park (183 businesses). Of these businesses 357 are retail establishments and 143 are in health care. Wayne Township has 2,641 business establishments; 22% of these businesses are in the flood zone and of these 33% are retail businesses.

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[3] Maser Consulting, "Passaic County Economic Development Plan, Impact Analysis and Continuity Plan" (presentation, Steering Committee, Passaic County CEDS, Totowa, NJ, February 26, 2015).

In Paterson, 349 of its 4,587 businesses are in the flood zone (8%) and 23% of these businesses are retail establishments (See map insert). On the map each dot represents a retail establishment in the flood zone. In Woodland Park, 183 of 532 businesses are in the flood zone (34%); and 22% of these businesses are in health and social service establishments.
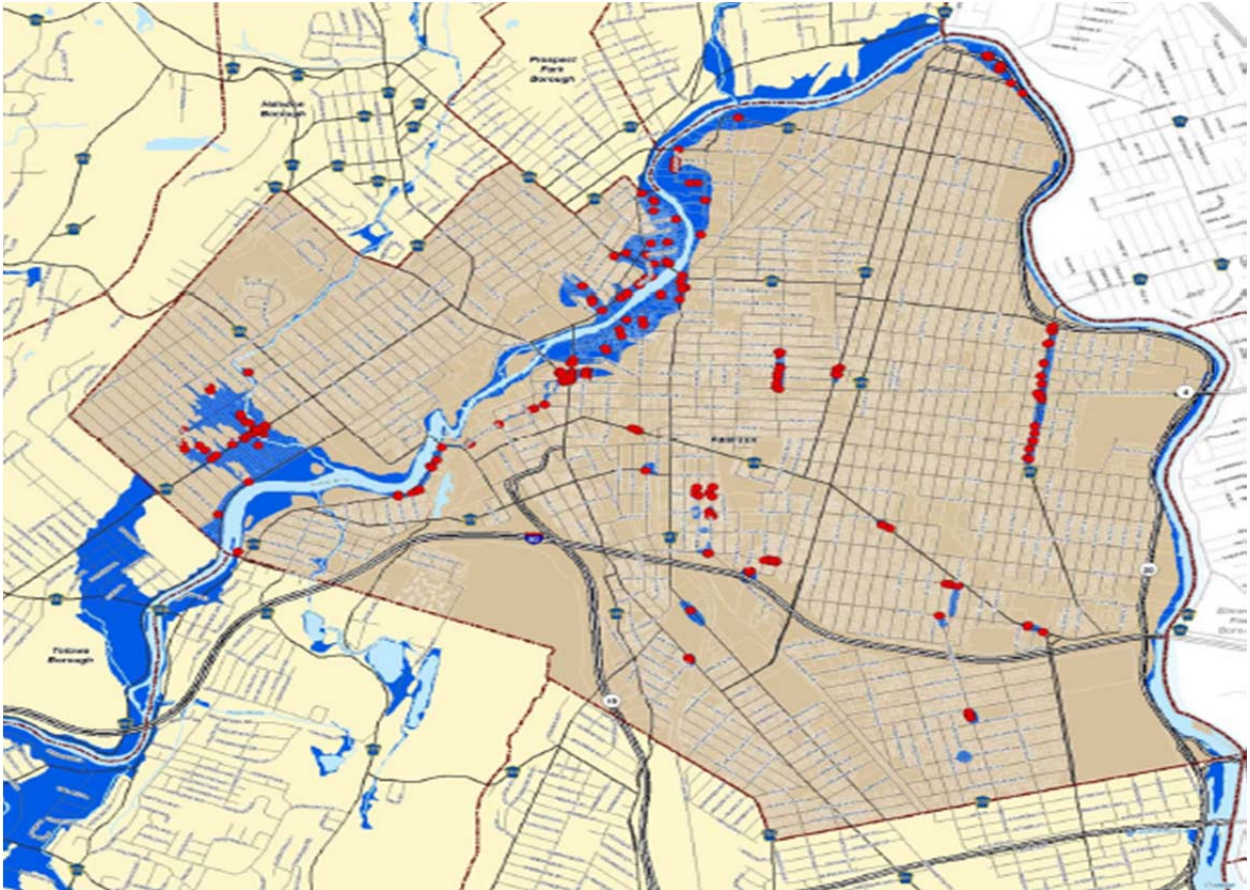
The main focus of a business continuity and disaster planning exercise is to prepare, so as "to recover and return" to business as quickly as possible. Therefore, it is imperative that small businesses prepare because of their importance to the economy of the county. As the number of business' figures above indicate, employment from small business establishments is critical. Thus, the impact of their ability to recover and return will have immediate and long term effects on the overall economic viability of the communities and the Count. And as we shall see next, the job figures associated with these businesses represent 38% of all jobs in the County.

B. THE RETAIL CLUSTER

The following discussion examines the current market conditions in the county. It focuses on three of the four largest industries in the county: health care, manufacturing, and retail. The fourth cluster is government employment and it will not be covered in this treatment.

In Passaic County both the retail and health care clusters each have 14% of the 2014 jobs while 10% of the jobs are in manufacturing. There are more jobs in these clusters in Passaic County than in the state as a whole. Combined roughly 38% of the 2014 jobs, or 71,603 jobs, in Passaic County are in these three clusters combined. They represent a sizable portion of the employment available in the county. According to the New Jersey Department of Labor and Workforce Development projections, the occupational outlook for the county projects overall growth through 2022.

The retail cluster represents 14% of all of the jobs in the county; that is, 26,553 jobs. Retail establishments also represent 15% of all establishments in the county and it is projected to grow by 8% through 2024. The average wage for the retail cluster in Passaic County is $28,553; which is $29,101 lower than the county's average for wages.

The five largest retail subsectors in the county are: supermarkets and other grocery, new car dealers, pharmacies and drug stores, electronics and appliance stores, family clothing stores. Over the last ten years the retail cluster has experienced a 4% increase with the largest increase in food and beverage stores and the largest decrease in furniture and home furnishing stores. The retail vacancy rate is roughly 4% which is significantly lower than the vacancy rate for the state.

The retail cluster is important for the county. When retail occupations are disaggregated, they are projected to remain stable or to grow through 2022 (See Table 5). The largest occupational growth in this cluster will occur for retail sales workers and salespersons. This sector is projected to employ more than 27,000 workers in Passaic County by 2022. This is a vital part of the county's employment and economic outlook. But, what happens if these jobs disappear because of a disaster? Small business establishments are 15% of the county's businesses/locations—that is a lot of places for potential losses. Therefore, business continuity planning is important because it allows businesses to restore normal operations as quickly as

possible after a crisis. Through business continuity and disaster planning cannot guarantee that a disaster won't occur, it does reduce the impact of the crisis on business operations and on the lives of workers.

Table 5

Long-Term Occupational Employment Projections for the Retail Cluster									
SOC Code	Occupation Title	2012 Estimate	2022 Projected	Numeric Change	Total Percent Change	Total Annual Openings	Annual Openings: Growth	Annual Openings: Replacements	Outlook
131022	Wholesale and Retail Buyers, Except Farm Products	550	600	50	6.8	20	0	10	Growing
412000	Retail Sales Workers	14,450	15,250	800	5.6	620	80	540	Growing
412031	Retail Salespersons	8,100	8,750	700	8.4	340	70	280	Growing
131023	Purchasing Agents, Except Wholesale, Retail, and Farm Production	450	450	0	4.8	10	0	10	Stable
411011	First-Line Supervisors of Retail Sales Workers	2,150	2,200	50	3.1	50	10	50	Stable
Source: NJ Department of Labor and Workforce Development									

C. THE HEALTH CARE CLUSTER

Hospital care is the largest single category of health care expenditure in the U.S with sales growing nearly 4% between 2010-2015. In Passaic County, the health care cluster represents 14% of the jobs in the county (26,379 jobs) and health care establishments represent 14% of all establishments in the county. The health care cluster is projected to grow by 11% through 2024 and the average wage is $45,447.

The five largest subsectors in the health care sector are: general medical and surgical hospitals, offices of physicians, nursing care facilities, child day care services, offices of dentists. Over the last ten years this sector has grown by 15%. Although there has been a recent decrease in employment in the sector, there has been a concomitant increase in out-patient offices suggesting a shift in the sector.

When the sector's occupations are disaggregated, most of the occupations in the field are projected to remain stable or to grow through 2022 (See Table 6). Of the occupations that are projected to grow, there is a high representation of support occupations in the field: nurses' assistants, occupational/physical therapy assistants and aides, therapists, and other support occupations. When the occupations that are projected to remain stable are examined, they too represent support fields in the cluster.

This trend changes when the occupations in the field that are projected to decline are examined. These occupations represent traditional jobs in the field: family/general practitioners, psychiatrists, and recreational therapists. This trend mirrors national changes. Nationally, there is a trend towards consolidation with for-profit providers acquiring non-profit providers as the regulations and requirements for tax exempt status changes. Moreover, primary care physicians are also consolidating with group practices and hospitals.

Table 6

SOC Code	Occupation Title	2012 Estimate	2022 Projected	Numeric Change	Total Percent Change	Total Annual Openings	Annual Openings: Growth	Annual Openings: Replacements	Outlook
	Long-Term Occupational Employment Projections								
311014	Nursing Assistants	3,000	3,400	400	13.6	100	40	60	Growing
312000	Occupational/Physical Therapy Assistants	200	250	50	37.6	10	10	0	Growing
312011	Occupational Therapy Assistants	0	0	0	25	0	0	0	Growing
312021	Physical Therapist Assistants	50	100	0	43.6	0	0	0	Growing
312022	Physical Therapist Aides	150	150	50	37.6	10	10	0	Growing
319000	Other Healthcare Support Occupations	2,100	2,550	400	20	80	40	40	Growing
291011	Chiropractors	100	100	0	11.5	0	0	0	Growing
291021	Dentists, General	150	200	0	13.2	10	0	0	Growing
291031	Dietitians and Nutritionists	100	100	0	10.2	0	0	0	Growing
291051	Pharmacists	450	500	50	11.2	20	10	10	Growing
291061	Anesthesiologists	150	200	50	23.1	10	0	0	Growing
291063	Internists, General	50	50	0	15.7	0	0	0	Growing
291065	Pediatricians, General	150	150	0	13.3	10	0	0	Growing
291067	Surgeons	50	50	0	23.8	0	0	0	Growing
291069	Physicians and Surgeons, All	850	1,000	150	14.3	30	10	20	Growing

	Other								
291071	Physician Assistants	0	50	0	42.1	0	0	0	Growing
291081	Podiatrists	50	50	0	23.7	0	0	0	Growing
291122	Occupational Therapists	150	200	50	19.3	10	0	0	Growing
291123	Physical Therapists	350	500	150	34.4	20	10	10	Growing
291124	Radiation Therapists	0	0	0	9.1	0	0	0	Growing
291126	Respiratory Therapists	250	300	50	17.5	10	0	0	Growing
211091	Health Educators	0	0	0	0.0	0	0	0	Stable
211094	Community Health Workers	50	50	0	4.8	0	0	0	Stable
299000	Other Healthcare Practitioners	150	150	0	0.6	0	0	0	Stable
299099	Healthcare Practitioners and Technical Workers	50	50	0	1.6	0	0	0	Stable
311013	Psychiatric Aides	250	250	0	3.8	10	0	0	Stable
311015	Orderlies	100	100	0	1	0	0	0	Stable
312012	Occupational Therapy Aides	0	0	0	0.0	0	0	0	Stable
291062	Family/ General Practitioners	0	0	0	-5.6	0	0	0	Declining
291066	Psychiatrists	0	0	0	-9.1	0	0	0	Declining
291125	Recreational Therapists	0	0	0	-4.8	0	0	0	Declining

Source: NJ Department of Labor and Workforce Development

The health care cluster should remain strong. Aging population, health care reform, and increase insurance coverage all lead to increased demand and revenue for health care providers.

D. THE MANUFACTURING CLUSTER

The final cluster examined here is the manufacturing cluster. It is the most complex. Nationally, the manufacturing sector is experiencing mixed growth. For example, although there are some signs of growth, in the past ten years manufacturing has declined 23% and the sector is projected to decline by 17% by 2024. In Passaic County is projected, the manufacturing sector is a strong cluster. The cluster represents 10% of all jobs in the county and 6% of all of the establishments in the county. Furthermore, the average wages for the sector are high. In Passaic County the average wages in this cluster are $60,237 which is above the overall average for the county.

The five largest subsectors in the manufacturing cluster are: navigational, Measuring, electromedical and control instruments manufacturing, printing, medical equipment and supplies manufacturing, bread and bakery product manufacturing, and animal slaughtering and processing. There are three major areas of focus for this cluster:

- Chemicals and Plastic Manufacturing:

  o Toiletries are projected to continue to grow over the next five to ten years;

  o Diverse product lines and commitment to R&D will keep revenue growth steady:

- Food Product Manufacturing:

  o Reduction in bread consumption has slowed growth in key industry in Passaic;

  o Focus on nutritious and specialty goods throughout the industry;

- Metal Product Manufacturing:

  o Navigational Instrument Manufacturing driven by research and development funding.
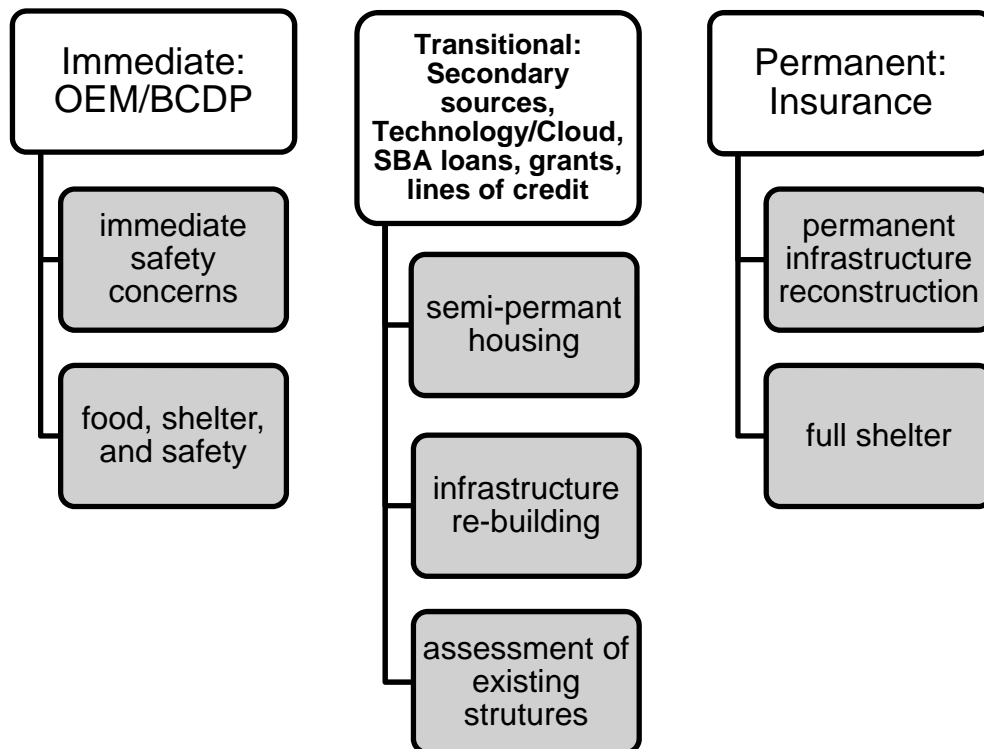
E. CONCLUSIONS

The overall economic outlook for Passaic County is strong. There are strong and growing industry and employment sectors in the county; especially in the three clusters discussed above: retail, healthcare, and manufacturing. These sectors are extremely important to the county. What happens if they disappear? Therefore, the businesses and municipalities of Passaic County must plan. How to get businesses to plan is the subject of chapters IV and V. There are a couple of areas of concern as well. The educational attainment in the county lags behind the state and two of the three top industry clusters pay average wages that are lower than the county and state averages. Moreover, the county's diversity is both an asset and a potential threat. Thirty-nine percent of residents of the county are of Latino/Hispanic heritage and 48% of county's residents speak a language other than English at home. This means that the county is very culturally diverse and that the planning process must bridge multiple cultural customs.

- 48% of its households a language other than English is spoken at home;

- 39% of the county is of Latino/Hispanic origin;

- 82% of adults in the county are high school graduates (88% for the state);

- 26% of adults hold a bachelor's degree or higher (36% for the state);

- The median income of the county is $57,654;

- There are 7,500 business establishments and these establishments employed more than 53,000 people as of the third quarter of 2014;

- County-wide there was a 22% loss in value at the parcel level post-Irene affecting 13,136 parcels. The largest losses in values were in Clifton (31%), Totowa (63%), and Wayne (30%);

- After Hurricane Irene, there was $15 million in business losses and of these losses, there was roughly $9 million in losses to business contents (i.e. personal property, auto losses, etc.) and over $6 million in losses to real estate;

- The retail cluster represents 14% of all of the jobs in the county; that is, 26,553 jobs;

- The health care cluster represents 14% of the jobs in the county (26,379 jobs); and these health care establishments represent 14% of all establishments in the county;

- The manufacturing sector represents 10% of all jobs in the county and 6% of all of the establishments in the county.

IV.   RESOURCES AVAILABLE FOR CONTINUITY

This chapter provides a general overview of the resources, communication, partnerships, and educational options available to municipalities and businesses after a crisis or an emergency. The chapter divides the responses to a crisis along an action timeline. This timeline details which agencies are involved immediately after a crisis, during a transitional period, and for permanent recovery assistance.

The purpose of any business continuity plan or disaster plan is "to recover and to return" to business as soon as possible. The increasingly global business climate and unpredictable weather patterns mean that businesses and municipalities must plan for any possible crises. Business continuity planning (BCDP) is becoming a necessary aspect of business development; thus, it is important to understand what resources are available to provide assistance during and after an emergency.[4] Additionally, it is important to think about business continuity planning as a continual process that involves preparing for the eventuality of crises, responding to crises, and recovering from crises.

Immediate: OEM/BCDP	Transitional: Secondary sources, Technology/Cloud, SBA loans, grants, lines of credit	Permanent: Insurance
immediate safety concerns	semi-permant housing	permanent infrastructure reconstruction
food, shelter, and safety	infrastructure re-building	full shelter
	assessment of existing strutures	

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[4] In the Emergency Management Guide for Business and Industry (2013, 5), the Federal Emergency Management Agency defines an emergency as, "…any unplanned event that can cause deaths or significant injuries to employees, customers, or the public…"

The relationship between immediate, transitional, and permanent responses is illustrated by the diagram above. Once an emergency occurs, aid comes from every level of government and from non-governmental and community-based organizations (CBOs) which are nonprofit organizations like the American Red Cross. Each level of aid structure has different resources and capacities that are utilized as needed. The immediate crisis dictates which aid responders are utilized but the function is to provide immediate care and resources.

Once the immediacy of the event subsides, the needs of individuals, businesses, and communities shifts to longer term, semi-permanent needs. Finally, the response shifts to permanent structure and infrastructure reconstruction to return those affected to full capacity.

The following is a list of assets and initiatives to be considered to assist in these areas:
1. Assets:
    a. Federal/State aid
    b. Recovery Financing: Private insurance, SBA loans, Secured and Unsecured loans
    c. Incentives: incentivize the creation of Business Continuity and Disaster plan by county businesses
2. Initiatives:
    a. Inclusion of key stakeholders in practices: employers, employees, clients, suppliers, distributors, and political leaders in emergency management drills and exercises
    o Business Continuity and Disaster Plan communication: encourage businesses and individuals to prepare continuity plans
    o Regional coordination: facilitate the continued coordination between the county's municipalities

The following discussion examines BCDP from a macro- or large-scale perspective; later materials will cover localized needs and planning as well.

A. IMMEDIATE RESPONSES

Immediately after a crisis there are several agencies available to provide assistance. Their focus in on providing an immediate and effective response to an emergency. These agencies are national, state, or county-level organizations that either maintain a sub-national/state/county-level presence or that move into affected areas as needed. It is important to remember that governments and organizations are not monoliths; they operate through several inter-connected agencies or departments with differing levels of autonomy and expertise.

Immediate crises responders include but are not limited to:

1) <u>New Jersey and Passaic County Offices of Emergency Management (OEM):</u> coordinates the emergency management response in the county which includes the actions of the first responders and all emergency personnel in the county.

2) <u>The American Red Cross:</u> provides immediate crises responses through the use of a network of volunteers and support organizations.

3) <u>Federal Emergency Management Agency (FEMA):</u> provides national emergency responses to disasters and emergencies; also mitigates against future events.

4) <u>Centers for Disease Control and Prevention (CDC):</u> develops and applies disease prevention and control, environmental health, and health promotion and health education activities.

5) <u>New Jersey Department of Health:</u> provides state-level disease prevention and control, environmental health, and health promotion.

6) <u>New Jersey State Police:</u> ensures public safety and maintains civil authority.

7) <u>Utilities:</u> provides emergency responses to outages and infrastructure damage.

Immediate crisis responses are by definition rapid—their responses provide immediate medical care, immediate shelter, and immediate food relief in the aftermath of an emergency.

While there is some overlap between immediate and transitional responses, with utilities for example, immediate responses are generally designed not to remain in place once the immediacy of the event has passed.

B. TRANSITIONAL RESPONSES

After the emergency has passed, transitional aid is used to bridge the period between the immediate crisis and full recovery. Once the immediate danger subsides, affected communities, businesses, and individuals need transitional aid. The Global Facility for Disaster Reduction and Recovery (hereafter GFDRR 2010, 133) defines this period as a critical moment between the immediate needs created by the crisis and the period before full recovery has occurred. GFDRR defines the response during this period as, "…short-term interventions…to address the availability of basic services and safety of households in communities where reconstruction is taking place." The focus of this phase is on the business impacts of the crisis.

For instance, in this period businesses may experience a number of issues related to the crisis; such as, the depletion of cash reserves, lowered profitability, an inability to sustain operations, and other unexpected expenses. Additionally, traditional sources of credit may be limited because credit applications take time. Thus, after a crisis or an emergency it may not be possible to get additional funding; it seem counterintuitive but it is important to think about money and cash reserves when you do not need them. Agencies that provide transitional services include:

- Small Business Administration (SBA)

- Banks—Lines of Credit

- Department of Housing and Urban Development (HUD)

- Federal Emergency Management Agency (FEMA)

- County housing assistance programs

- Utilities: restore public facilities

- Primary and Secondary schools: construct community meeting spaces or incorporate community space in other early public building reconstruction projects

The goal of transitional assistance is to provide safe and effective aid while permanent structures and infrastructures are re-built and repaired.

C. PERMANENT RESPONSES

Permanent resources include the need to restore and rebuild communities and businesses in order to return to full operational capacity. The resource options for permanent restoration are available before and after an emergency event. These resources are:

- Business/residential insurance companies

- Small Business Administration (SBA)

- Banks and financial institutions[5]

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[5] Santos, Cesar and Jordany Rodriguez. "Financial Preparedness." Presentation for the William Paterson University Business Continuity Conference, Totowa, NJ, May 8, 2015.

- o Unsecured
    - Credit cards (designate an emergency card)
    - Business charge cards
    - Lines of credit
    - A line of credit for short term access to capital (unsecured revolving credit)
- o Secured
    - Business lines of credit
    - Commercial cards
    - Secured credit cards
- Telecommunications/Cloud[6]
    - o Develop an IT strategy
        - Document equipment and connectivity requirements
        - Identify critical applications
        - Determine backup/restoration procedures
        - Prioritize function
        - Generators or POS system
        - Set the timeframe
    - o Backup storage
        - Identify what to backup
        - Select where to store data
        - Implement hardware and software backup procedures
        - Create a schedule for the backups
        - Conduct reviews to ensure accurate backup

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[6] Reina Valenzuela, "Tech Tools for Recovery," Presentation for the William Paterson University Business Continuity Conference, Totowa, NJ, May 8, 2015.

- Backup hard copies

- Virtual private server (VPS)

- Scanned copies

o Restore/recovery

- Establish alternative forms of communication (Skype, Facebook groups, signage, website, social media)

- Scan and store documents (insurance, purchases, warranties, deeds, titles)

- Inventory video and photos

- Document instructions to staff

- Detail the location of backup files (with access codes)

- Keep a copy of system configurations

- Scan and backup financial records

o Set up a list of resource contact numbers

- Business Action Center

- OEM

- Utilities—they don't know when your power is off

D. CONCLUSIONS

The best time to plan for an emergency or a disaster is before the event. In a crisis there may not be enough time to plan adequately. It is also important to think about the emergency response to a crisis in terms of a continual process with different resources and responders available at different times. Immediately after a crisis the emphasis is on the rapid response to the event. After this period passes the response evolves to consider what is needed for a full recovery and the smooth return to operations.

V.   COUNTY-MUNICIPAL PLANS (DISASTER AND CONTINUITY)

This chapter examines county-level responses to disasters and emergencies. It uses interviews with key stakeholders and focus group sessions to detail what Passaic County is doing to ensure disaster and business continuity. Data for this chapter was gathered through eighteen stakeholder interviews, a focus group session with the county's emergency responders, and several visioning sessions with county and municipal officials.

Additionally, this chapter utilizes the county's disaster planning documentation and preparedness plans. The discussion begins by distinguishing between continuity and disaster planning, it will then look at the data and resources available for emergency and disaster preparation, followed by an examination of the connectivity of the county's municipalities, barriers to service, and bottlenecks and impediments. Finally, the chapter will make county-level recommendations for disaster and continuity preparedness.

A. CONTINUITY VERSUS DISASTER PLANNING

The purpose of continuity and disaster planning is to mitigate against disaster risks. Continuity planning and disaster planning are connected; the goals of both are risk aversion, loss reduction, a quick return to business, and the protection of investments and life. The difference is that continuity planning is a more comprehensive process that prepares for all emergencies, large and small. Disaster planning is a targeted process that usually focuses on large-scale calamities.

Continuity planning involves preparing for the ability to respond to and recover effectively from disruptions in services by outlining where operations will be housed after an event; anticipating how long the recovery process will take; and, who will lead the recovery efforts. A good continuity plan, to the extent possible, makes provisions for every crisis with the goal of building organizational resilience.

Risks can come from a number of different sectors. Whether the risks are from natural disasters (floods, earthquakes, or hurricanes), from man-made occurrences (cyber or terrorist attacks), or from economic sources (recessions and business loss) every community is vulnerable. Unfortunately, vulnerability is not an easily measurable characteristic. Every community's susceptibility to risks involves a complex interaction between several systems.

Every community must assess its own exposure and sensitivity to risk and the potential impact the risks pose. Moreover, each community has a different adaptive capacity for risk; that is, every community's knowledge base, technological capability, and institutions are unique to it. Keeping in mind the complexity of vulnerability, continuity and disaster planning must take into account every possible disaster.

As David Paulison, former administrator of the Federal Emergency Management Agency, contends the purpose of continuity planning is to build resilience or "[t]he ability to respond and recover effectively to disruptive events." This process requires that businesses and municipalities:

- Be grounded in self-awareness;

- Have an accurate perception of reality; and, a

- Realistic optimism for the future

County-level officials are responsible for disaster planning. Their function is to prepare for disasters and facilitate the county's disaster response and its recovery process. Specifically, the county must ensure that its essential functions and operations are performed and, if disrupted, rapidly resumed in the case of a disaster. According to the county's Continuity of Operations/Continuity of Government County of Passaic Plan (hereafter COOP/COG; 2006, 8), the county prepares in order, "…to save lives; protect the public health, safety, and well being; to protect property; maintain essential communications; provide for business/industry continuity; and restore basic public services."

The county's function in a disaster is to bring the resources of the government on-line as efficiently as possible. By doing this and doing it well, the government allows businesses to get the resources needed to facilitate recovery. The government provides for the immediate safety of the community through emergency, fire, and police responses and it provides emergency food and shelter. By all measures, Passaic County does this extremely well. Nevertheless, the government does not provide the specific resources individuals and businesses need to recover from a crisis. Businesses and individuals must plan for disasters just as the government does; they must plan for recovery and a return to operations. The government is an important resource but it cannot make business continuity investments for businesses. This is a critical

distinction and cannot be underestimated. As noted from the introduction, this is the hardest thing to accomplish: business buy in.

B. Resources available

The following section examines the resources available to emergency responders in Passaic County. The resources available include state and federal funding sources, non-governmental organizations that provide support services in crises, like the American Red Cross, and private support. The information presented here comes from the data gathering processes described above and presents the municipal services in place using all the county-level continuity plans.

According to the interviews and focus groups conducted, most of the emergency responders and county-level agencies have continuity and disaster plans in place. With only two exceptions the respondents stated that their agency has a plan and that the plan is reviewed regularly. Of the two agencies that do not have a plan in place, the respondents stated that they were either preparing a plan at the time of the interview/focus group or that a planning team had been designated to start the process. The respondents were well aware of the need to have a continuity and disaster plan in place. Moreover, most of the respondents' agencies also have shelter-in-place plans in case their personnel cannot leave the facilities and regularly drill their plans. As one respondent states, "[we have] multiple plans—drilled periodically. Everything from tabletops to full scale building evacuations."

The objectives of the continuity and disaster plans at the county-level are to 1) achieve operational capacity within twelve hours of an emergency; 2) sustain operations for up to thirty days; and, 3) utilize existing departmental and field infrastructures. The process for putting together continuity and disaster plans at the county-level involves delineating what exactly the continuity of operations entails and defining essential functions.

Continuity of operations includes all activities that ensure the performance of essential functions. Essential functions are functions that allow the department or agency to provide services vital to exercising civil authority, maintaining safety, and sustaining the economy of the county during an emergency.

The process of determining which functions are essential begins with the agency or department identifying all functions it preforms and then delineating which functions are essential. Some common essential functions are law enforcement, fire protection, medical services, and public health. Once this process is complete the essential functions are prioritized.

The prioritization process involves determining the amount of time that a function can be suspended without detriment and deciding in which order functions must be restored.

The final step in this process is determining what support services complement the essential functions identified. Determining what the support services are ensures that the essential functions are restored to their fullest capacity and that operations are performed well.

The basic element of the county-level plans are:

- Lines of succession for decision-making

- Delegation of authorities

- Devolution

- Essential functions

- Human Capital management

- Vital records

- Alternative facilities

- Interoperable communications

- Resumption and recovery

- Testing and training

The planning process is a critical part of developing a continuity and disaster plan. This process identifies which functions and infrastructure elements are likely to be available during an emergency and allows departments and agencies to anticipate the needed resource allocation. Once the essential functions of an agency or department are detailed, the functions are prioritized and sequenced. Each member of the department or agency then knows which

function should be restored first and who is responsible for each function. A respondent summarized this aspect best, "…every employee has a storm function: site safety, deal with fire and phones, public relations, electric restoration group, damage assessors, thirty different functions and coordinators." Additionally, once the planning process is complete the Office of Emergency Management (OEM) drills the plans and systematically reviews each department's and agency's plan. This process ensures that the Office of Emergency Management (OEM) is well prepared for every crises and that continuity plans are implemented in a timely and efficient manner. This process is a continual learning and review process.

As an administrator at a Passaic County utility states:

We pre-classify a storm. Lists our storms on a scale of 1 to 6. Look to see what is predicted, whether there will be wind, snow, ice, wet snow, leaves on the tree, the time of year. Strictly follow the ICS structure. Decide prior to an event how many teams we will need. Reach out ahead and pre-stage people through mutual aid. We do try to do this with businesses - notification prior to an event. We have a critical customer list, including hospitals and nursing homes. If a hospital is in an affected area we know there is a priority one customer. We send a notice, email or text to notify of the pending storm, what we are doing and what our steps are. Each of our large commercial customers has a representative and a number they can call 24/7. This past year we added cyber security to our plan: We are able to quickly relocate our facilities if they are unable to continue to operate at the current location.

C. CONNECTIVITY TO LOCAL MUNICIPALITIES

Connectivity is crucial for any continuity and disaster plan. Coordination among all departments, agencies, and outside organizations that may be called upon to provide services and resources in a crisis may mean the difference between a quick recovery and prolonged disorder.

At the county-level, every department, agency, and governmental entity has developed and maintains a Continuity of Operations/Continuity of Government plan (COOP/COG). The COOP/COG is designed to ensure that the county government is able to perform all essential functions in the event of an emergency or a disaster. The COOP/COG is an important document in the continuity and disaster planning process (COOP/COG 2006, 8):

COOP/COG planning is designed to develop and maintain a plan that enables each department, agency, and other governmental agencies to preserve, maintain, and/or resume its capability to function effectively in the event of the threat or occurrence of any disaster or emergency that could potentially disrupt governmental operations and services.

The COOP/COG was developed to be inclusive of all departments and agencies in the county and includes all of the following:

- Administrator/Finance/Human Resources/Procurement Center
- County Clerk/Register of Deeds/Surrogate's Office
- Board of Chosen Freeholders
- County Counsel/Consumer Protection/Weights and Measures
- Economic Development
- Board of Elections/Superintendent of Elections
- Emergency Management
- Health Department/Mosquito Control/Recycling
- Human Services/Mental Health
- Parks Department
- Passaic County Community College
- Passaic County Technical Institute
- Planning
- Police Academy
- Preakness Healthcare
- Prosecutor's Office
- Public Housing
- Public Works/Engineering/Operations/Buildings and Grounds
- Rutgers Cooperative
- Senior, Disability Services and Veterans Affairs
- Sheriff's Department
- Social Services
- Youth Reception and Rehabilitation Center

Each department and agency listed above is required to plan and execute its own COOP/COG plan. This coverage ensures that all critical staff has the knowledge and tools to perform effectively during a crisis. For instance, each COOP/COG plan includes a list of all emergency personnel with the training and ability to perform essential functions. Additionally, the continuity and disaster plans are regularly drilled and exercised. Again, it should be noted that getting businesses to "buy in" is crucial. Thus, if during practice exercises by the county they could invite businesses to participate and to watch -- the need may become more apparent.

D. BARRIERS TO SERVICE

Despite the thoroughness of the planning process and the requirement that county-level departments and agencies have a continuity and disaster plan, there are barriers to service in the county. Three trouble areas have been identified from the data gathering process: communications, partnerships, and education.

I. COMMUNICATION

Two types of communication barriers emerged from the data gathering. The first is the movement of information through the channels of authority, especially the movement of information to front-line responders and local businesses. The second barrier involves the communication of status updates through established channels of communication.

The dissemination of information in a crisis is very important. According to the International Economic Development Council (2015, 9), "[a] breakdown in communication has been cited by local officials and community stakeholders as one of the most difficult barriers to overcome immediately following a major disaster."

In Passaic County, respondents described the issues as such: a need to have a disaster center to contact; access to who to call about resources, water clean-up, etc.; and, a place for the public to get updated information about where to stay away from during an emergency. Additionally, the need for first line responders to have the authority to make command-level decisions in the field was also cited. While it is not clear whether these issues are merely perceptions or major issues, they emerged from the data gathering process and therefore are important issues to consider.

Problems communicating through existing communications channels was also mentioned as an issue. For instance, one respondent says that it is "unclear about who to contact in an emergency." This is an issue for the non-governmental groups affected. The communication channels between local individuals and businesses and emergency responders is not well delineated. Emergency responders seem to have no difficulty communicating with each other through radio-communication but how effectively communication flows from emergency personnel to the general public and local businesses requires updating.

II. PARTNERSHIPS

There are several very successful partnerships and collaborations in the county. For instance, county-level utilities, colleges and universities, and municipalities have developed successful partnerships. However, in emergencies and crises new realities emerge that test time-honored partnerships. Thus, new partnerships are needed to meet new and emerging challenges. The new partnerships should prioritize economic revitalization as well as public safety.

For example, Hurricane Sandy was mentioned several times as a defining event in the county. The event showed that several existing partnerships were intact but the flooding and power outages also show that more can be done to facilitate partnerships in the county. For instance it was noted in our interviews that the utilities should prioritize places of higher education needs because they are both a major county employer and they are an emergency shelter. This is an area which requires more attention in order to sustain economic revitalization; and as a matter of public safety.

III. EDUCATION

Education is an issue closely related to communication. Several respondents mentioned that there is a general lack of education about the status of emergency events and where those impacted should go. This issue involves the dissemination of information in an emergency and on-the-ground direction by first responders. In an emergency a lack of education can be extremely dangerous and therefore a continual push to educate residents of the county should be made. Most importantly, this push should occur in times of non-crisis and be reinforced at every level of government. Business buy in should be encouraged.

E. BOTTLENECKS/IMPEDIMENTS

The following are the major bottlenecks and impediments identified by the key stakeholder interviews and OEM first responders. The bottlenecks and impediments are:

- Need to redirect the drain systems;

- Power failures-Cells, radios, etc.;

- Education to the public about emergencies;

- Loss of power is the bigger issue--Power continuity

- Remove barriers down the center of Hamburg Turnpike which are bad for businesses and first responders;

- Improve radio communication;

- Communication at the state level is poor;

- The police use an old radio system (SPIN);

- Self-deployment for the police;

- Use e-mail for OEM coordinators;

- Radio/telephone use a mutual link-up system;

- Coordination of technical information for county-wide emergencies.

F. RECOMMENDATIONS

The key stakeholders interviewed for this report offered several recommendations for the county-level continuity and disaster planning process. Some of these have been identified prior to this report as potential areas which have now been confirmed (noted with * below). Their recommendations are summarized below:

- One agency to do donation management;
  - A way for local contracts to get in place;
  - Work with NGOS to set up place with basic needs;
- Increase education and communication about issues around flooding prevention and recovery issues;
- Work regionally to reduce flooding;
  - Remediate the Passaic River flooding:*

- Routes 20 and 46 frequently flood due to heavy rains, snow pack melting, and rising tides;

- Floods have become a real problem;
  - General upgrades:*
    - Storm water management;
    - Pump station work;
    - Sewer work;
    - Find a use for the silt and debris that is caught in the nets, need someone to take it away. Currently paying for it;

    - Put all utilities below ground;
    - Improve roads to make it possible for big trucks to get through safely;
- Improve ability to communicate during and immediately after a natural disaster;
  - Clear information about who to contact in an emergency—when and where;
  - Upgrade phones to radio frequency;

  - Electronic signs;
  - Deal with issues around PSE&G communications;
- Support businesses in their ability to increase resiliency and survive emergency events;
  - Alternatives to turning residents away from disaster areas;
  - Provide housing after a disaster;
- Maintain power continually, particularly for major employers and educational institutions;
  - Deal with issues around PSE&G communications;
  - Communications is better within some municipalities;
- Deal with the lack of mass transportation–there is a train station but not easy to get to and for some places there is no bus for within town;
  - There is not a lot of parking for bus transportation;

- Overcome litigation fears;

- Management of expectations.

Lastly, the use of simulations or exercises by the businesses with the County and the State OEM is crucial. This was stressed several times by officials in our interviews. However, the ability to get everyone together to practice must be addressed. Therefore the County should request the State for more exercises brining the businesses in as both participants and spectators. In the way the business community may see the importance of and relevancy of having a BCDP. (See Appendix for full Matrix)

VI.   BUSINESS CONTINUITY AND DISASTER PREPAREDNESS PLAN

This chapter outlines the rationale and process of creating a Business Continuity Plan (BCDP) for businesses and localities. The purpose of a BCDP is to build resilience and ensure that normal operations can continue smoothly and resume quickly after a disaster.

While the term disaster connotes large-scale calamities, it is important to keep in mind that a good BCDP prepares organizations for any eventuality—large and small-scale crises as well as natural and man-made hazards. Business continuity planning means putting measures in place to safeguard people and assets during a crisis event and having a plan of action before an event occurs. Planning is, therefore, the most crucial element because the timing and impact of events are unpredictable and because there may not be enough time during an event to plan. You would not open a business without developing a plan, so why run a business without a plan to continue to operate in the event of a disaster?

Source: Ramapo River at Pompton Lakes, NJ (Photograph by Daniel S. Skulski, US Geological Survey).

When a crisis or an emergency happens our first response is to make sure that the people involved are okay.[7] After this initial response, the process of returning to business begins. The planning process is detailed below and involves creating a plan, testing the plan,

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[7] Errol Bowen. "Business Continuity Overview." Presentation for the William Paterson University Business Continuity Conference, Totowa, NJ, May 8, 2015.

communicating the plan to all parties involved, and then regularly reviewing the plan. The process of returning to business need not be daunting; with planning and preparation businesses can recover from a crisis and return smoothly to operations.

A BCDP allows for resiliency: which is defined as "the ability to bounce back." Unfortunately the reality of businesses of not having a BCDP in case of an event results in 75% of businesses to close within three years; and 40% never even reopen at all. (Ready.Gov)

Source: Paterson, NJ (Reuters)

The following outlines the steps used in the creation of a BCDP. (Pull out forms that will guide the creation of the BCDP are in the appendix).

The process for creating a BCDP are:

1) An assessment all possible threats;

2) Planning for the threats and building the plan;

3) Disseminating the plan; and,

4) Implementing the plan.

As in all manner of preparations, a plan is only as good as the process used to create it and it must be used and reviewed regularly. Therefore, it is important to think about this process as a cycle that must be periodically repeated so that the plan is current and viable when it is needed.

A crucial aspect of creating a BCDP is leadership. According to David Paulison, former administrator of the Federal Emergency Management Agency, resilience begins with the leadership of the organization. (As defined as the ability to bounce back after a crisis). A resilient leader has these characteristics:

- Self-Awareness
    o Accurate perception of reality
    o Knowledge of capabilities
    o Knowledge of limitations
- Confidence
    o *Knowledge* of plan is the key
    o Confidence is built through exercising your plan
- Prioritization
    o Understand your Critical Business Functions, Systems & Processes
- Focus
    o Concentrate on that which you can control
    o Refer back to the Plan
    o Reinforce the positives
    o Temper your own emotions
    o Manage your own expectations
- Discipline

- o Adhere to the standards set forth in your plan, no matter what, contingencies are there for a reason
- o Rely on the structure and processes in place
  - ▪ Trust
    - o Trust in your Plan
    - o Trust in your staff
    - o Trust in your resources & assets
  - ▪ Flexibility
    - o Embrace adaptation, innovation and creative problem solving
    - o Exhibit a willingness and the confidence to grow, change & adapt given the most appropriate and accurate information available
  - ▪ Compassion
    - o Be aware of and have compassion for the experiences & emotions of those affected by the crisis
    - o Publicly express compassion for those involved

Source: Paterson, NJ (AP/ Julio Cortez)

The importance of a resilient leader cannot be understated. A good BCDP works best if it has the authority and legitimization of the organization's leadership. This authority may be bestowed upon a designated planning team; but, resilience planning must be part of the organization's culture. Building resilience can reduce injuries, insurance premiums, and property damages. Furthermore, planning ahead means a quick return to normal operations.

The process of creating a BCDP necessitates the assessment of the organization; but, as Paulison suggests, this process should also include an assessment of the organization's leadership. The result of this evaluation, however, is the confidence to lead the organization to become as resilient as possible. Additionally, as Don Wirth, retired vice president of global operations for the E. I. DuPont Corporation, states, the process of building resilience is good for business. He contends that:

With Global Operations becoming Regional and Global focused, our businesses must shift thinking on how to deliver technology and products to Global Customers. The notion of World scale Plants gives way to world scaled Supply Chain design and execution. [The] location of key production components is determined by many Geopolitical considerations. Leading to a process of Supply Chain Resilience as the mantra for safe, low cost and capital effective delivery to Customers.

This process is crucial for businesses and organizations: as the owner, the entrepreneur, the manager, the sales person, the clerk, or the employee, therefore, what will happen if you cannot work or you are not there? What will your customers do? Think about it! Now!

Source: Wayne, NJ (REUTERS/Lucas Jackson)

A. ASSESSMENT

The first steps in creating a business continuity plan are forming a planning team and assessing the risks and threats to the organization. The guiding question for this process is: What are the risks of different kinds of disasters and emergencies to your business? (FEMA 2013)

The first and most important step in creating a BCDP is forming a planning team. The following considerations should be carefully assessed:

- The size of the team, this is dependent of the organization's operational requirements and resources but participation should be encouraged;

- Composition of the team, determine who can be an active member but try to include input from all functional areas of the organization: upper management, line management; labor; human resources; etc.

- Planning authority, the team must be imbued with the authority to plan and implement the plan;

- Budget and a schedule.

The planning team's composition should be carefully and thoughtfully considered. This step is one of the most important and its structure can shape the direction of the process. In a small business it is important to know who will plan and what are the risks to the organization are.
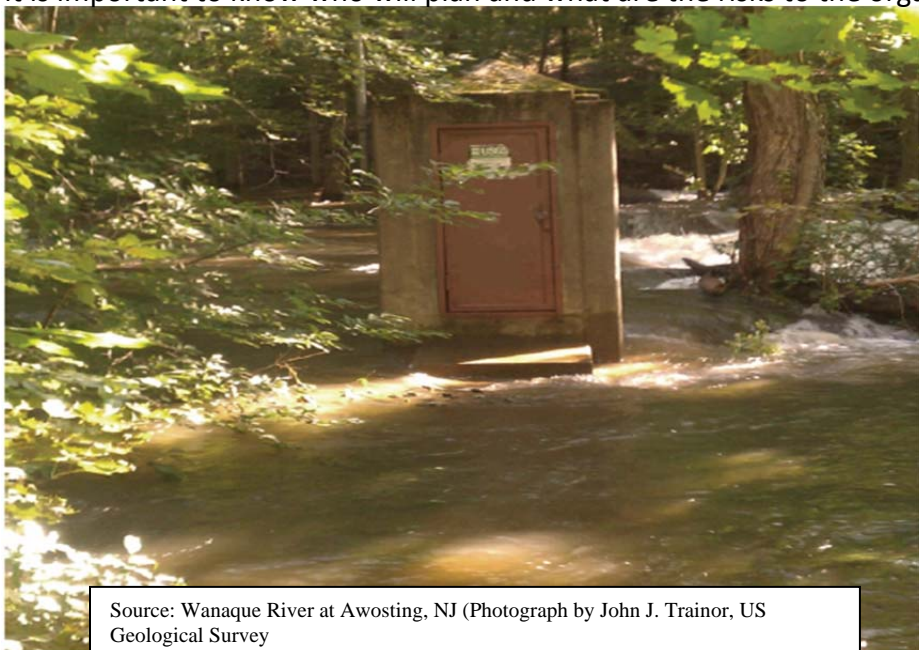
Source: Wanaque River at Awosting, NJ (Photograph by John J. Trainor, US Geological Survey

While risks and threats will be somewhat location- and organization-specific, it is important to consider all possibilities and to consider the full spectrum of threats and risks. In a 2007 survey, businesses identified fires, cyber-attacks, hurricanes, winter storms, tornadoes, and terrorist attacks as the important threats to them (FEMA 2013). Although, risks can come from many different sectors, for simplicity, this guide will divide them into natural hazards and man-made hazards.

Source: Pompton Lakes, NJ (Photograph by Robert W. Atkinson, US Geological Survey).

Natural hazards include:
- Geological threats
  - Earthquakes
  - Tsunami
  - Volcano
  - Landslides, mudslides, subsidence
- Meteorological hazards
  - Flood, flash flood, tidal surge
  - Water control structure/dam/levee failure
  - Drought
  - Snow, ice, hail, sleet, arctic freeze
  - Windstorm, tropical cyclone, hurricane, tornado, dust storms
  - Extreme temperature (heat or cold)
  - Lightning strikes

- Biological hazards
  - Foodborne illnesses
  - Pandemic/infectious/communicable diseases
- Technology caused events
  - Utility interruptions or failures

Man-made hazards include:
- Accidental
  - Hazardous material spill or release
  - Nuclear power plant incident
  - Explosion/fire
  - Transportation accident
  - Building/structure collapse
  - Entrapment
  - Traffic incidents
- Intentional
  - Robbery
  - Lost person, child abduction, kidnap, extortion, hostage incident, workplace violence
  - Demonstrations, civil disturbances
  - Bomb threats, suspicious package
  - terrorism

Once the list of hazards has been identified, the planning process can begin.

B. PLANNING

The planning process requires several systematic steps that can be repeated as the organizational needs and threats change. The planning process should include an examination of:

    I.   Where the organization's operations stand in the beginning of the process;

    II.   What are the organization's essential functions; and,

    III.   An assessment of its vulnerabilities.

Pompton Plains, NJ (Photograph by John J. Trainor, US Geological Survey).

I.   WHERE THE ORGANIZATION STANDS

Determining where the organization stands in the beginning of the process allows the planning team to accurately assess the organization's capacities. These capacities include: staff/personnel trainings and expertise, the facility's capacities and vulnerabilities, and the impact of the local infrastructure. When determining where the organization stands, the planning team should do the following steps:

a. Review all policies and previous plans;

- Evacuation plans;

- Fire protection plan;

- Safety and health policies;

- Security procedures;

- Insurance policies;

- Finance and purchasing procedures

- Employee manuals;

- Hazardous materials manuals;

    Mutual aid agreements

- Meet with outside groups whose functions are critical for the organization's operations;

b. Once these documents have been reviewed, the team should meet with critical outside groups to talk about the impact of outside factors on the organization's operations and to determine if outside resources are available to the group.

- Determine the critical and essential functions of the organization;

- Identify the organization's capacities;

- Identify external resources; and,

- Review all insurance policies.

The critical local groups include: the emergency management office, the fire department, the police department, emergency medical services organizations, the public works department, telephone and utility companies, and neighboring businesses. This can be accomplished by the local city or county economic development official(s). The planning team should also become familiar with applicable federal, state, and local regulations, such as fire codes, occupational safety and health regulations, and zoning regulations.

II.   ESSENTIAL FUNCTIONS

The planning team needs to understand the essential functions and operations of the organization in order to determine the impacts of potential threats.

a. The essential functions of the organization are functions that allow the organization to provide services vital to its operations; that is, functions without which it cannot continue to operate. In a business context essential functions are functions that are sensitive to downtime, fulfill legal or financial obligations, play a key role in maintaining market share and reputation, or that safeguard an irreplaceable asset(s). Examples include: re-supplying/re-stocking merchandise or meeting payroll or loan obligations.

b. In addition to considering the organization's essential functions, the planning team needs to identify the organization's resources and capacities. These capacities include those that can be depended upon in an emergency:

- Personnel trainings and experiences;

- Specialized equipment;

- Facilities—including emergency shelters;

- Organizational capabilities—including evacuation plans; and,

- Backup systems:

    o   Payroll

    o   Communications

    o   Production

    o   Customer services

    o   Shipping and receiving

    o   Information systems

    o   Emergency power

    o   Recovery support

c. The planning process may seem daunting but there are external resources available that can be used in the event of an emergency. In some cases a formal agreement or contract is necessary, for example with insurance policies, and in some cases a pre-crisis relationship is encouraged, for instance with suppliers of emergency equipment. The planning team should seek out information on forming relationships with external sources of resources. The team should contact the local emergency management resources, hospitals, insurers, suppliers, utilities, and contractors. Finally, the planning team should meet with the organizations insurance carriers to review all policies.

d. Review all insurance policies: it is important that the planning team review all insurance documents and take an inventory of all assets with pictures and/or videos. This documentation is invaluable in the event of an emergency or disaster.

III. ASSESSMENT OF VULNERABILITIES

Planning for business continuity also includes assessing the organization's vulnerabilities. The planning team should list all potential emergencies that could affect the operations of the organization and then estimate their probability of occurring and assess their threats to humans, property, and business operations. When determining the potential emergencies, the planning team must consider the risks from all possible emergencies:

- Historical threats that have occurred in the community;

- Geographic threats that result for the organization's location;

- Technological threats that could result from systems failures;

- Human error threat that occur because employees are poorly trained or careless;

- Physical threats that result for issues with safety; and,

- Regulatory threats.

When considering the impacts of the potential threats, the planning team should consider the costs to repair/replace and the costs to the interruption of business, including if personnel cannot perform their work responsibilities.

Special considerations should be made for the organization's information technology. The planning team should develop and information technology strategy, a backup storage plan, and a plan to restore and recover key information:

- IT strategy:
  o Document equipment and connectivity requirements
  o Identify critical applications
  o Determine backup/restoration procedures
  o Prioritize function
    - Generators or POS system
  o Set the timeframe
- Backup storage plan:
  o Identify what to backup
  o Select where to store data
  o Implement hardware and software backup procedures
  o Create a schedule for the backups
  o Conduct reviews to ensure accurate backup
  o Backup hard copies:
    - Virtual private server (VPS)
    - Scanned copies
- Restore/recovery plan:
  o Establish alternative forms of communication (Skype, Facebook groups, signage, website, social media)
  o Scan and store documents (insurance, purchases, warranties, deeds, titles)
  o Inventory video and photos
  o Document instructions to staff
  o Detail the location of backup files (with access codes)
  o Keep a copy of system configurations
  o Scan and backup financial records

Once the above considerations have been assessed, the planning team is ready to create the plan. The BCDP should include the following components:

- Executive summary;

  o Organizational Chart (staff/personnel; roles/responsibilities; contact information; administration/sales teams; technology);

- Emergency management elements;

  o Communications plan

- o Life safety plan

- o Property protection plan

- o Logistics

- Emergency response procedures;

  - o Warning employees and customers

  - o Communication with employees and customers

  - o Evacuation plan

  - o Shelter-in-place plan

  - o Protecting vital records

  - o Restoring operations

- Support documents;

  - o Call lists

  - o Building and site maps

  - o Resource lists

- Training schedule;

  - o Tabletop exercises

  - o Walk through drills

- Review and revise schedule; and,

- Distribution to all stakeholders.

Source: Wayne, NJ (Rueters/Lucas Jackson)

C. DISSEMINATION

Once the plan is written, dissemination is the next step. The plan should be widely distributed within the organization and consideration should be made as to its distribution outside of the organization. In addition to the organizational staff and personnel, the distribution of the final plan should include:

- Senior management;

- Members of the organization's emergency response team; and,

- Where appropriate, community emergency agencies.

Personnel should be given a copy of the plan and the planning team should consider if there are barriers to service or distribution. For instance, communication barriers, such as language issues, should be considered and the plan should be adjusted accordingly. As noted in the demographics section, a language other than English is spoken in 48% of the county's households. Moreover, partnership boundaries with outside organizations should be clearly stated and the plan shared with all partners. Finally, the staff and personnel should be educated about the plan and the issues involved with continuity planning.

How to do this via small businesses is crucial. As we saw in the cluster section, one of the largest sector's of employment is the Retail Cluster. Thus, ensuring these businesses have a plan should be a priority of the County.

D. IMPLEMENTATION

Implementation involves exercising the plan and taking action on the recommendations brought up in the vulnerability assessment. The vulnerability assessment details the potential risks to normal business operations. Implementation means that the plan becomes part of the organization's culture. Every opportunity to train and educate the organization's personnel should be taken. In order to assess how integrated the plan is, consider following:

- How well does management supports the responsibilities outlined in the plan;

- Has the plan been incorporated into the organization;

- Does the organization's evaluation process address emergency management responsibilities;

- How well is the plan distributed;

- Are there visible reminders of the plan;

- Does the staff know what their responsibilities are;

- Is the plan updated?

The staff and personnel need to be trained on the plan. This training can take several forms:

- Orientation and education sessions;

- Tabletop exercises;

- Walk-through drills;

- Functional drills;

- Evacuation drills; and,

- Full-scale exercises.

As stated in the opening of this chapter the purpose is to outline the rationale and process of creating a business continuity plan (BCDP) for businesses and localities. The purpose of a

BCDP is to build resilience and ensure that normal operations can continue smoothly and resume quickly after a disaster. The objective is to encourage businesses to plan to remain operational in the event of a crisis. In order to do this businesses have to plan in advance how they will manage any emergency. This planning process should be a multi-hazard plan that estimates the level of risk for each potential crisis. The BCDP plan will help to protect assets, investments, and employees.

VII. Conclusions

In an increasing complex world, resilience planning (the ability to bounce back) is imperative for businesses and municipalities. Resilience planning helps businesses and municipalities recover from:

- Disruptions

- Financial losses

- Loss of market share

- Damages to capital assets, equipment, or inventory

An important resilience planning tool is a Business Continuity Plan (BCDP). A Business Continuity Plan prepares you to: 1) assess potential risks; 2) plan for every potential event; 3) disseminate the plan; 4) implement the plan; and, 5) practice the plan.

This planning develops security and credibility with employees, customers, suppliers, and the community. Moreover, small to medium sized businesses are often the most affected by the effects of a disaster (FEMA 2013). Therefore, a business (or municipality) with a resilience plan is in a better position to recover quickly and return to operations smoothly after a disaster.

A. Recommendations

The following section provides recommendations for municipalities to become better prepared for emergencies and disasters. The municipal governments in Passaic County are doing a good job, especially the County OEM. These recommendations are meant as guides to ensure that after a disaster businesses and municipalities "recover and return" stronger and become more resourceful. Several key recommendations stood out from this report.

1) Establish one agency/organization for donation management: Charge organization with handling and distributing all the donations that are received. This will reduce time delays and duplication of efforts.

2) Increase education and communication about issues around flooding prevention and recovery issues:
   o Educate local officials about how to establish standing emergency contracts to reduce delays during emergency around procurement issues.

o Increase non-emergency communication around why the precautions are made when there is an emergency and why it is imperative that the public comply with the authorities when the time comes to leave their homes and businesses.

o Market and promote disaster center and available programs. Make sure businesses, residents, and all stakeholders are aware of who to contact in case of an emergency and what programs are available to help with prevention and recovery.

3) Work regionally to reduce flooding:
   o Continue to buy out properties that are in flood prone areas to reduce cost of providing services and increase pervious surfaces.
   o Work with municipalities to understand issues around development in flood prone areas to reduce flooding.
   o Upgrade storm water infrastructure capacity in all municipalities.
   o Conduct debris removal on all watercourses as needed.
   o Create a tool for the county and individual communities to share best practices, planning standards, and other tools to manage development in flood prone areas. County offices can manage and provide review of master plan and codes for municipalities as necessary.
   o Update the County's master planning document to include a section on severe and repetitive flooding.

4) Improve ability to communicate during and immediately after a natural disaster:
   o Establish a countywide Wi-Fi and radio access system that is deployable and independent of local systems during major events to disseminate information.
   o Update and review regularly all State of Emergency Shared Service Agreements so that they are current and all parties are familiar with the process.
   o Create a publicly available countywide live GIS System that can be updated in real-time to provide information about where there are road closures and other hazards.
   o Develop a static map that provides information on the roads that are likely to close in case of various levels of flooding or other natural disasters.
   o County to prepare mass emails to go out to business and residential community with tips on how to prepare for the upcoming emergency and then how to safely return to their homes or place of business.

5) Support businesses in their ability to increase resiliency and survive emergency events:
   o Establish a countywide list of available real estate that can be accessed following an event to house inventory and move operations of businesses impacted by the event.
   o Establish a funding stream that is available to businesses impacted by an emergency event that they can access quickly and easily, to assist with working capital, inventory replacement, and other issues that may arise.

o Increase communication of available programs to assist businesses impacted by disaster.

o Increase the number of businesses that have an Emergency Disaster Plan in place, encourage rehearsals, updating, and provide technical assistance as necessary.

Just as planning is crucial for the county and municipalities, businesses and individuals also need to plan. When businesses are planning for potential disasters the following questions will help assess their level of preparedness. Business leaders should ask:

▪ What are the risks to business and lives?

▪ Are my employees prepared for an emergency?

▪ Do we have an evacuation plan?

▪ Do we have a shelter-in-place plan?

▪ Are the business's records safe?

▪ When was the last review of insurance policies?

The answers to these questions should prompt business leaders to an accurate assessment of their level of preparedness. Further, just as one would plan for a wedding, to have children, to buy a home, to have a celebration – at a bare minimum one should plan for business continuity.

B. NEXT STEPS

The county governments and Office of Emergency Management (OEM) are performing admirably under often extreme conditions. This sections outlines tactical actions to be undertaken by the county during and immediately after a disaster.

1) Data-gathering: understand the social, economic, and environmental strengths and weaknesses of the community.

2) Education: ensure on-going information to the public about preparedness, risks, and resources before, during, and after a disaster.

3) Engagement: promote participatory decision-making in planning, response, and recovery activities.

4) Communication: provide information for all members of the population.

5) Self-sufficiency: enable and support individuals and communities to assume responsibility for their preparedness.

6) Partnerships: develop partnerships between governments, nongovernment organizations, and community members.

The following is a list of assets and initiatives for consideration:
1) Assets:
   a. Federal/State aid
   b. Recovery Financing: Private insurance, SBA loans, Secured and Unsecured loans
   c. Incentives: incentivize the creation of Business Continuity and Disaster plan by county businesses

2) Initiatives:
   a. Inclusion of key stakeholders in practices: employers, employees, clients, suppliers, distributors, and political leaders in emergency management drills and exercises
   o Business Continuity and Disaster Plan communication: encourage businesses and individuals to prepare continuity plans
   o Regional coordination: facilitate the continued coordination between the county's municipalities

The County has undertaken a Comprehensive Economic Development Strategy (CEDS) and an Impact Analysis (IA) of Hurricane Irene to help define and prepare the governments and businesses create a sustainable environment. There is no doubt that after a major disaster the ability to respond effectively and efficiently will greatly enhance the success of returning to normalcy.

In the end having proper insurance, the ability to access financing and reliability in obtaining contractors is crucial. Combined all of these elements are something which government can assist with; but ultimately the final determining factors will be you. It is clear from this research that the County government and their affiliate agencies have been on the forefront. Timing is everything… and the time to plan is now.

VIII.   APPENDICES:

A. CONTINUITY PLAN AND CHECK-LIST PULL-OUT FORMS

I. BUSINESS CONTINUITY RESOURCE REQUIREMENTS

Business Continuity Plan, Step 1

Business Name/Address: _____

_____

_____

Date: _____   Contact (s): _____

Program Administration: define the scope, objectives, and assumptions of the business continuity plan.

Business Continuity Organization:

1) Define the roles and responsibilities of the planning team.

2) Identify the lines of authority, succession of management, and the delegation of authority.

3) Address interactions with external organizations, like suppliers or contractors.

Team (IT, administration, production, etc.)	Member Name	Email	Work Telephone	Home/Cell Telephone

Vulnerability Assessment:

- Insert the results of the Vulnerability Assessment

- Identify Recovery Time Objectives for business operations and information technology

- Identify Recovery Objectives for data restoration

Business Continuity Strategies and Requirements:

- Insert detailed procedures, resource requirements, and logistics for execution of all recovery strategies.

- Insert detailed procedures, resource requirements, and logistics for relocation to alternative worksite(s).

- Insert detailed procedures, resource requirements, and data restoration plan for the recovery of information technology (networks and required connectivity, servers, desktops/laptops, wireless devices, applications, and data).

Manual Workarounds:

- Document all forms and resource requirement for all manual workarounds.

Incident Management:

- Incident detection and reporting

- Alerting and notifications

- Business Continuity Planactivation

- Emergency operation center activation

- Damage assessment and situation analysis

- Development and approval of an incident action plan

Training, Testing, and exercising:

- Training curriculum

- Testing schedule, procedures, and forms

- Orientation, tabletop, and full-scale exercises

Program Maintenance and Improvement:

- Schedule, triggers, and assignments for the periodic review of the plan

- Details of corrective action program to address deficiencies

Vendors and Contractors:			
Company	**Contact Name**	**Emergency Telephone**	**Business Telephone**

Distribution and Access:

The plan will be distributed to members of the planning team and management. A master copy of the document should be maintained by the business continuity team leader.

Multiple copies should be stored to ensure that team members can quickly review roles, responsibilities, tasks, and reference information.

An electronic copy of this plan should be stored on a secure and accessible website and on a secure USB flash drive for printing on demand.

II.   BUSINESS CONTINUITY IMPACT ANALYSIS WORKSHEET

Business Continuity Plan, Step 2:

Business Name/Address: _____

Date: _____   Contact: _____

IMPACT ASSESSMENT					
Function/Role	Importance [high/medium/low]	Area of Impact			Comments
		Affected Staff	Utilities/Communication/Technology	Assets	

III.   BUSINESS EMERGENCY PLAN

Business Continuity Plan, Step 3

Business Name/Address: _____

Date: _____   Contact: _____

BUSINESS EMERGENCY PLAN	
Vital Information:	
Primary Address:	Emergency Address:
Primary Telephone:	Emergency Telephone:
Primary Emergency Contact (Name/Address):	Secondary Emergency Contact (Name/Address):
Emergency Contact Information:	
Non-emergency Police:	Non-emergency Fire:
Insurance Provider:	Emergency Planning/Crisis management Team:
Primary Data Backup Location:	Emergency Backup Location:

Utility Contact:	Utility Contact:
Utility Contact:	Utility Contact:

Critical Operations:

Operation:	Staff in Charge:	Emergency Action Plan:

Suppliers and Contractors:

Primary Suppliers and Contractors:	Emergency Suppliers and Contractors:

Emergency Services:			
Service:	Name:	Emergency Telephone:	Business Telephone:
Fire Department			
Emergency Medical Services			
Police Department			
Emergency Management Agency			
Hospital			
Public Health Department			
New Jersey Environmental Authority			
National EPA			
Electrician			

Plumber			
Elevator Services			
Hazardous Materials Cleanup			
Disaster Cleanup Services			

Warning, Notification, and Communications Systems:		
	System:	Details/Process:
Warning:	Fire Alarm:	
	Public Address:	
	Other (specify):	
Notification:	Electronic:	
	Telephone:	
Communications:	Telephone:	
	Two-way Radio:	

Business Name/Address: _____

Date: _____   Contact: _____

STAFF/EMPLOYEE CALL TREE				
Team/Department	Member Name	E-mail	Work Telephone	Home/Cell Telephone

IX. LIST OF TABLES

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XI. LIST OF INTERVIEWS

1   Kevin Boyle, Borough Administrator, Pompton Lakes

2   Tom Carroll, Wanaque

3   Philip Cheski, Captain, Clifton Fire Department

4   Michael J. Clayton, Emergency Disaster Services Director, Salvation Army

5   Mayor Coiro, Totowa

6   Mayor Darlene Conti, Little Falls

7   Charles Cuccia, Little Falls

8   Al Del Velitco, Totowa OEM

9   Maria Dombayci, Passaic County Emergency Management Office

10   John Dunleavy, Bloomingdale

11   George Galbaith, Woodland Park OEM

12   Mayor Richard Goldberg, Hawthorne

13   Haledon Borough

14   Michael Lysicatos. Passaic County Transportation Planner

15   Mayor Mahler, Wanaque

16   Eric Mauer, Hawthorne

17   Richard M. McAuliffe, Hawthorne OEM

18   Mark McGrath, Wayne Township

19   Michael Mogcatallo, West Millford OEM

20   Kathleen Muldoon, Director of the SBDC, Passaic County Passaic County Community College

21   Hirsch Neustein, Mountain Development Corp

22   Michael Onder, City of Clifton

23   Passaic County Department of Health

24   Robert Pavlick, American Red Cross of Northern NJ

25   Steve Pellington, Passaic County Sherriff's Office

26   Mike Powell, Passaic County Community College

27   Gene Reynolds, Orange and Rockland Utilities, Inc.

28   Steve Rose, President, Passaic County Community College

29   Siamack Shojai, Dean of the College, William Paterson University

30   Mayor Domenic Stampon, Haledon

31   Allen Susen, Haledon

32   Steven Tiboni, NJ State Police

33   Bernadette Tiernan, Executive Director for Continuing Education, William Paterson University

34   Maryann Trommelen, Passaic County Emergency Management Office

35   Mayor Vergano, Wayne

36   George Waits, Crown Roll Leaf

37   Joe Wassel, Totowa

XII. INTERVIEW PROTOCOLS

A. Business Continuity Plan Survey

1) Do you have a continuity plan in case of a major event or an emergency? [YES or NO]
   a. If YES:
      i. How often do you practice drill? [YES or NO] _____
      ii. Do you review the results and update plan? [YES or NO] _____
   b. If NO:
      i. Do you plan to set up a continuity plan planning team? [YES or NO]
         1. If YES: When? _____
         2. If NO: Why Not? _____

2) If you have a continuity plan, how often is the plan reviewed and/or revised?
   a. Monthly
   b. Quarterly
   c. Every six month
   d. Annually
   e. Every two years
   f. Never
   g. Other (please specify) _____
   _____

3) If you have a continuity plan, how often is the plan rehearsed through simulation?
   a. Monthly
   b. Quarterly
   c. Every six month
   d. Annually
   e. Every two years
   f. Never
   g. Other (please specify) _____
   _____
   _____

4) If you have a continuity plan, please indicate to whom it is communicated and the means by which it is

   made available. _____

   _____

   _____

5) Thinking about the continuity plan and communication flows described above, where would you say you

   encounter the most impediments or bottlenecks? Please be as specific as possible. _____

   _____

   _____

   _____

6) Based upon past experiences with disasters what do you believe is needed to assist you in continuing your

business? Please be as specific as possible. _____

_____

_____

_____

B. Emergency Management Focus Group Survey

Thank you for being a part of the Passaic County Comprehensive Economic Development Strategy (CEDS) and the Business Continuity Disaster Plan (BCDP) process.

If you would please take a moment to answer the questions below, it would be very helpful. We are interested in your organization's continuity plan in case of a major event or an emergency. Your responses are important to us and will help us to determine the level of preparedness in the community/County. Thank you.

1. Do you have a continuity plan in case of a major event or an emergency? [Yes or No]

    A. If Yes,
        1. How often do you practice drill? _____

        2. Do you review the results and update plan? [Yes or No]

    B. If No,
        3. Do you plan to set up a continuity plan planning team? [Yes or No]
            1. If yes, When? _____

            2. If No,
               1. Why not? _____

                      _____

                      _____

2. Does your organization/agency have a plan in case you need to shelter-in-place? [Yes or No]

3. Does your organization/agency have an evacuation plan? [Yes or No}

Name of your organization/agency: _____

Contact Info: _____

Thank you for your time. If you have any questions or you would like to discuss in more detail your business continuity plans, please contact Stuart Koperweis by telephone at (973) 226-3329 or by e-mail at skoperweis@m-strat.com.

XIII. INTERVIEW RESPONSES

A. OEM SURVEY RESULTS: OCTOBER 23, 2014

	Question:	Response:
1	Do you have a continuity plan in case of a major event or an emergency?	"No, not to my knowledge;" "This is outside my purview so I don't know what plans, if any, are in place, but I have not been part of any discussion."
	Does your organization/agency have a plan in case you need to shelter-in-place?	No.
	Does your organization/agency have an evacuation plan?	No.
2	Do you have a continuity plan in case of a major event or an emergency?	Yes, "multiple plans—drilled periodically. Everything from tabletops to full scale building evacuations."
	Does your organization/agency have a plan in case you need to shelter-in-place?	No.
	Does your organization/agency have an evacuation plan?	Yes; part of business continuity.
3	Do you have a continuity plan in case of a major event or an emergency?	Yes, Drills once per year. Results are reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have an evacuation plan?	Yes.
4	Do you have a continuity plan in case of a major event or an emergency?	Yes. Drills: once per year. Results reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have an evacuation plan?	Yes.
5	Do you have a continuity plan in case of a major event or an emergency?	Yes. [Drills not mentioned] Results reviewed. Organization plans to set up a continuity planning team.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have	Yes.

		an evacuation plan?	
6	Do you have a continuity plan in case of a major event or an emergency?	Yes. Results reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have an evacuation plan?	Yes.
7	Do you have a continuity plan in case of a major event or an emergency?	No. Organization plans to set up a planning team in the next 2 years.
	Does your organization/agency have a plan in case you need to shelter-in-place?	No.
	Does your organization/agency have an evacuation plan?	Yes.
8	Do you have a continuity plan in case of a major event or an emergency?	Yes. Drills: once per year. Results reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have an evacuation plan?	Yes.
9	Do you have a continuity plan in case of a major event or an emergency?	Yes. "Not often in 3 years." Results reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have an evacuation plan?	Yes.
10	Do you have a continuity plan in case of a major event or an emergency?	Yes. Drills: Never. Results not reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes, "it was done [unreadable] thus 8 years ago and never reviewed."
	Does your organization/agency have an evacuation plan?	Yes.
11	Do you have a continuity plan in case of a major event or an emergency?	No. Planning team: "I refer this question to Scott Wilson and Mike Moscatello."
	Does your organization/agency have a plan in case you need to shelter-in-	Yes.

	place?	
	Does your organization/agency have an evacuation plan?	Yes
12	Do you have a continuity plan in case of a major event or an emergency?	No. No plans to set up a planning team: "Should be done but no plans to accomplish this task at this time."
	Does your organization/agency have a plan in case you need to shelter-in-place?	No.
	Does your organization/agency have an evacuation plan?	Yes.
13	Do you have a continuity plan in case of a major event or an emergency?	Yes. Drills: "Never" Results not reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have an evacuation plan?	Yes.
14	Do you have a continuity plan in case of a major event or an emergency?	Yes. Drills: Yearly. Results reviewed.
	Does your organization/agency have a plan in case you need to shelter-in-place?	Yes.
	Does your organization/agency have an evacuation plan?	Yes

B. Passaic County CEDS Interviews:

	Business Continuity Plan			Impediments or bottlenecks	Needed Assistance	Business Climate
	Reviewed/revised	Rehearsed through simulation	BCP strategy			
1		--Drills or actual events for first responders		--Power failures-Cells, radios, etc.; Education to the public;	--One agency to do donation management; --Turning residents away from disaster areas; --A way for local contracts to get in place; --Work with NGOS to set up place with basic needs.	

2						--County doesn't have a good brand
3				--Out due to power outages; --Issues with PSEG about making them a priority to get up and running; --Do not have generators.	--Maintain power continuity particularly for major employers and educational institutions	
4	Yes	--Tabletop simulations of all types of simulation	--Communication-they were emergency evacuation centers. --Public safety academy they housed the emergency management office. --Well-equipped and redundant. --Put in emergency generators	-- Issue that all of Paterson gets flooded needs to be dealt with		--Focus on health and health occupations; --Shift discussion to make sure they are engaging employers earlier in the process for workforce development and training.
5	Yes	--Reviewed every 2 years;	-- Don't do drills but provide information company wide and managers know process	-- Have a disaster center to contact; -- Access to who to call about resources, water clean-up, etc.; -- Place for public to get updated information about where to stay away during emergency	--Unclear about who to contact in an emergency	--Trouble getting qualified employees --Provide training and partner with community colleges and universities. --Difficult to hire because of high cost of living in NJ
6	No		--Emergency Management handles emergencies; --Small town and police	--Need to redirect the drain system	--Putting money in budget for 3 electronic signs;	

			knock on all elderly residents doors.			
7	Yes		--OEM has a plan; --Not connected to the business community; --No major issues around communications except with PSE&G	--No real issues with flooding --Backed up storm sewer		
8					--Lack of mass transportation – there is a train station but not easy to get to; --No bus for within town; --Not a lot of parking for bus transportation	
9	Yes	Twice per year	--First rate CERT team --Use a revers 911 for calls and texts --Channel 77 that runs scroll during emergency		--Want to upgrade phones to radio frequency (doing this now)	
10	Yes	Not rehearsed or reviewed	--In process of getting generators for muni buildings through FEMA --Townhall, fire stations, community centers, DPW, pump station --Recently upgraded phones and websites --Reverse 911 calls are getting out	--Passaic River issue with the outflow pipes that they recently had fixed so that the water won't back up into it --Silt is building up in the river basis so the riverbed is rising to make the river closer to the outflow pipes --Need	--Issue around PSE&G communication	

				dredging in the river and debris removal.		
11	Yes	Real life scenarios	--Sandy was well organized and the Town was up and running in 48 hours --New muni complex that they are building has been designed with emergency in mind. --They will be the backup emergency command center for the county.			
12	Yes		--Town is good with OEM plan --State of the art radio system --New radio station available for emergencies --Businesses can go online for updates --Communicate with Willowbrook direction (although some trouble getting major national stores to close down)	-- When Route 23 closes in Paquonock it impacts Wayne, need to raise the roadway to allow for growth along Route 23. -- Remove barriers down the center of Hamburg Turnpike which are bad for businesses and first responders		
13					General upgrades: --Storm water management --Pump station work --Sewer work --Would like to find a use for the silt and debris that is caught in the nets, need	

				someone to take it away. Currently paying for it.	
14	Yes	--Rehearsed as Required; --Recently revised and resubmitted		--Loss of power is the bigger issue. Power continuity	--Put all utilities below ground. --Improve roads to make it possible for big trucks to get up there safely. They will send us a list with more information.	
15	Yes	Reviewed once per year; --Revised as needed; --Dills the plan twice per year	-- Twelve member committee that handles the BCP staffed by Red Cross staff and leadership volunteers and one full-time employee who handles planning and logistics; --Economical to open shelters. --In a fuel shortage utilize the Ridgewood Department of Public Works. --All marked EMS vehicles have fueling priorities in an emergency. --Network of hand radio operators and there are shelters that are equipped with generators in Ridgewood, Fairfield, and Princeton.	We have no warehouses in Passaic	--Housing: after a disaster --Flooding: remediate the Passaic River flooding. Route 20 and 46 frequently flood due to heavy rains, snow pack melting, and rising tides	
16	Yes		--Every employee has a storm function:		--Floods have become a real problem;	

			site safety, deal with fire/phones, PR , electric restoration group, damage assessors, 30 different functions and coordinators;		--Communications is better with some municipalities	
17	Yes	-- Revised every two years; --Drilled monthly by teams of emergency responders		--Radio communication is difficult; --When to declare a disaster		
18	Yes		--State police uses an Incident Command System (ICS) and standard operating procedures (as in a para-military capacity); --There is a reverse 9-1-1 system but if all communications are down he has to physically go to the locations	-- Communication at the state level is poor	-- There needs to be business buy in from businesses; Questions that local businesses and municipalities should be asking themselves? --Where are their insurance papers? Are they stored off site? --How do they communicate with their employees? --Who handles quarantine notices? --How do you overcome litigation fears?	