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THESIS

THE HOMELAND SECURITY ECOSYSTEM: AN ANALYSIS OF HIERARCHICAL AND ECOSYSTEM MODELS AND THEIR INFLUENCE ON DECISION MAKERS

by

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13. ABSTRACT (maximum 200 words)

The premise of this study is the principle that prevention, preparedness, response and recovery strategies for complex manmade threats to our nation necessitate both collaboration and knowledge sharing among government agencies. The thesis asks, "What can be learned by examining the New Jersey homeland security environment through both hierarchical and ecosystem models, and what aid can those heuristic templates provide to organizational decision making?" The analysis of existing literature revealed two sets of frameworks or conceptual lenses. The hierarchical framework includes command and control, authorities, planning, information flows, organizational culture and behavior, SOPs, policy, and governance. The ecosystem framework includes strategic planning, cooperation, collaboration, interdependencies, information flows, diversity, emergence, and networks. The two frameworks are used to conduct comparative case studies of past complex events that occurred within the New Jersey's homeland security environment.

The study's findings suggest that New Jersey's fusion center, based on its structure and capabilities, is suitable for blending both organizational frameworks, leading it to having the capacity to solve complex issues through collaboration, emergence, strategic planning, networks, and information sharing.

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LIST OF ACRONYMS AND ABBREVIATIONS

ALPR	Automated License Plate Readers
DHS	Department of Homeland Security
DOJ	Department of Justice
EOA	Ecosystem-Oriented Architectures
FEMA	Federal Emergency Management
GST	General Systems Theory
HSPD-5	Homeland Security Presidential five
ICC	Intelligence Collection Cell
ICS	Incident Command System
IED	Improvised Explosive Devices
NIMS	National Incident Management System
NJSP	New Jersey State Police
NSM	National Socialist Movement
OEM	Office of Emergency Management
OHSP	Office of Homeland Security and Preparedness
ROIC	Regional Operations Intelligence Center
SAA	State Administrative Agency
SEOC	State Emergency Operations Center
SOP	Standing Operating Procedure
SST	Sociotechnical Systems Theory
STWT	Sociotechnical Walkthrough
SWOT	Strengths, Weaknesses, Opportunities, and Threats
UASI	Urban Area Security Initiative
UCR	Unified Crime Report
USAR	Urban Search and Rescue Unit

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I. INTRODUCTION

All science, no matter how arcane or irrelevant it may appear to outsiders, has broader implications, which can lead the willing scholar into some quite unfamiliar territory. (Geerat Vermeij)[1]

A. RESEARCH QUESTION

The premise of this study is based on the belief that prevention strategies for complex man-made threats to our nation require collaboration and knowledge sharing among government agencies to enhance prevention, preparedness, response, and recovery efforts. This dictum has resulted in the creation of the "homeland security" environment, which includes many individual hierarchal agencies. In these agencies, leaders are expected or required to function in a non-linear manner as they attempt to connect, share information, and collaborate in a rugged environment that calls for characteristics closely mirroring those of a complex adaptive system.

This researcher therefore asks, What can be learned through a comparative analysis that examines the New Jersey homeland security environment through both hierarchical and ecosystem models, and what influence do those models have on decision makers?

In order to respond to this primary research question, this thesis will also seek to answer the following second tier of questions:

1. What are the prominent links that connect government agency leaders within the New Jersey state homeland security environment?
2. What element, processes, laws, and or strategies, direct decision makers in their homeland security mission?
3. How does an ecosystem perspective inform the design of future fusion center knowledge sharing and collaboration initiatives within the New Jersey state homeland security environment?

[1] Cecie Starr, Biology : Concepts and Applications, 2nd ed. (Belmont, CA: Wadsworth Publishing Company, 1994), 568.

B. PROBLEM SPACE

The current hierarchical model of New Jersey government closely resembles the twentieth-century mechanistic principles established by Max Weber and Fredrick Taylor.[2] This structure provides order and tightly controlled rules, policies, and procedures. Leaders and subordinates have clearly defined responsibilities to which there is limited flexibility in assuming tasks or mission objectives that fall outside the structured framework provided through agency directives. This organizational design does not always allow for, or encourage, information and knowledge sharing as was pointed out in the *9/11 Commission Report*.[3] Most agencies work independently of one another and focus primarily on agency-specific strategies. The inherent barriers associated with hierarchical, mechanistic models hamper agency collaboration, knowledge sharing, and goal setting. The hierarchical model presents a centralized structure that lends itself to strict lines of authority and responsibility. While hierarchical models are ideal for handling traditional problems, those problems do not capture the complexity found in today's homeland security environment. The complex issues currently facing homeland security agencies demand a greater level of flexibility then is offered by hierarchical mechanistic models and may benefit from an examination of alternative structures and /or systems, such as ecosystems, which may offer additional insights into the complex and dynamic nature of the homeland security enterprise.

Through an examination of complex systems, including natural ecosystems, scholars have recognized the value natural sciences offer social scientist in the study of organizational behavior. In an ecosystem, certain characteristics can be analyzed to measure the fitness of the environment. Diversity, connectedness, interdependency, and adaptability are often the key features explored in complex systems. In this context, diversity is the number and type of species; connectedness is the way in which agents in a system connect and relate to one another; interdependency is the influence one agents actions have on another agents; and adaptability is the ability for complex adaptive

[2] Scott E. Page, *Understanding Complexity* (Chantilly, VA: The Teaching Company, 2009).

[3] National Commission on Terrorist Attacks upon the United States [9/11 Commision], The 9 11 Commission Report : Final Report of the National Commission on Terrorist Attacks upon the United States (New York: Norton & Co, 2004), 77.

systems to learn and adjust to external variables. Where homeland security is a complex adaptive system and ecosystems are prototypical examples of complex systems, one might deduce that homeland security can be modeled as an ecosystem.

Using biomimicry, the discipline that seeks solutions by emulating nature's designs and processes there is considerable opportunity to learn solutions for man-made problems.[4] By modeling the homeland security environment in New Jersey as an ecosystem, this study will seek the perspectives, insights, and organizational and systemic lessons of ecosystems as a way to improve and advance the complexity, responsiveness, and resiliency of homeland security at the state level. This research will look to create a model where individual agencies, similar to agents in an ecosystem, represent organisms and energy is represented as knowledge and information sharing. The model will seek to enhance flows of energy or information between agencies to further develop connectedness and interdependency between organizations.

Through a comparative analysis using qualitative data the study will examine the current homeland security environment with one modeled after an ecosystem. Data from current legal statutes, federal, and state plans, committee by laws and governance, and other public source documents will be used for analysis.

[4] Gerard Briscoe, "Creating a Digital Ecosystem: Service-Oriented Architectures with Distributed Evolutionary Computing (London: Imperial College London: 2009), 42 (abs 0712.4159).

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II. LITERATURE REVIEW

A. INTRODUCTION

The literature review is comprised of two distinct sections. In the first section the literature review examines various perspectives and characteristics of traditional hierarchical organizations. The second section provides a review of ecosystems, which is separated into three parts: general systems theory, business ecosystem, and digital ecosystems. From this research characteristics of the hierarchical and ecosystem research are used to create two separate frameworks for analysis.

B. HIERARCHICAL ORGANIZATIONS

Although there are a number of different definitions of organizations, most all agree that organizations consist of a family of interacting, hierarchically arranged, decision-making units.[5] Some of the essential characteristics include a vertical arrangement of subsystems, which make up the entire system, where authority rests at the higher-level subsystems, as well as a dependence on the lower level subsystems for actual performance of work.[6]

Organizations provide structure and create capabilities for achieving objectives and performing tasks. An example can be found in the manufacturing industry where the collective contribution of many individuals, when working in harmony, can lead to high levels of production that would otherwise not be possible. Organizational structure also provides direction while creating levels of control for management. This structure can lead to an emergence of culture, which can shape the behavior of individuals within the organization in ways that conform to informal and formal norms.[7] Culture is defined as, "the set of values, norms, guiding beliefs, and understanding that is shared by members of an organization and taught to new members as the correct way to think, feel, and

[5] Dante P. Martinelli, "Systems Hierarchies and Management," Systems Research and Behavioral Science 18, no. 1 (January 25, 2001): 69, doi:10.1002/sres.390.

[6] Ibid.

[7] Graham T. Allison and Philip Zelikow, *Essence of Decision : Explaining the Cuban Missile Crisis* (New York [etc.]: Longman, 1999), 145.

behave. It represents the unwritten, feeling part of the organization."[8] As organizational culture emerges to shape the behavior of individuals within the organization, the result becomes a distinctive entity with its own identity and momentum.[9]

In one theory, the development of the hierarchical organization suggests that during the Industrial Revolution work became more complex and was performed by greater numbers of workers, which resulted in a pressing need to develop new ways of managing and controlling the organization.[10] Today, government behavior, as it relates to organizational design, is believed to focus more on outputs than choices, which are developed through standard patterns of behavior.[11]

According to authors David Alberts and Richard Hayes, hierarchical organizations are believed to have developed and perfected during the Industrial Age.[12] In their analysis, the principles of command and control within organizations apply to both Industrial Age warfare and Industrial Age economics and business.[13] Some of the principles include, decomposition, specialization, hierarchy, and centralized planning.[14]

The principle of decomposition is one where organizations are divided into subsets. For example, universities are divided into departments, and military organizations divide staff functions into personnel, intelligence, operations, logistics, etc.[15] From decomposition to specialization, yet another set of subsets is created where groups specialize on specific areas of expertise to support the greater organization. In

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[8] Richard L. Daft, *Organization Theory and Design*, 10th ed. (Mason, Ohio: South-Western Cengage Learning, 2010), 317.

[9] Allison and Zelikow, Essence of Decision, 145.

[10] Daft, *Organization Theory and Design*, 56.

[11] Allison and Zelikow, *Essence of Decision*, 145.

[12] David Alberts and Richard Hayes, *Power to the Edge : Command, Control in the Information Age* (Washington DC: CCRP Publication Series, 2003), 41.

[13] Ibid., 37.

[14] Ibid.

[15] Ibid., 41.

military operations, specialization has generated capacities that could not have been created through generalists.[16] The result of decomposition and specialization creates even greater levels of hierarchy.

With the various subsets created within organizations additional layers of management were also created to ensure that: individuals understood goals and policies; goals and policies were transmitted to subordinates; plans were developed to coordinate actions; performance monitored; and feedback exchanged with leadership.[17] In complex hierarchical organizations with many specialized functions, numerous layers of management are created to ensure information flows up and down the chain of command. To achieve success, leaders rely on plans. In the military, plans are the mechanism by which commanders seek to create the conditions necessary for success. In the public sector, hierarchical organizations also rely on the use of strategic plans to describe the mission, vision, and goals of the agency.

Within this model, strategic planning is the cornerstone for providing direction and maintaining control of the agency mission, goals, and objectives. An agency's use of its pre-defined capabilities and methods for developing strategies are based on organizational assets and capabilities, which explains some of the inherent qualities of hierarchical organizations. The literature review examines two distinct schools of decision-making and the impact the planning methodology has on a leader's approach to decision making.

An agency's methodology for developing strategic plans can have a significant influence on how leaders direct and control an organization. Consistent with the hierarchical organizational model, many government agencies have adopted and still use strategy concepts developed in the 1960s and 1970s, including the design and planning

[16] Alberts and Hayes, *Power to the Edge*, 40.

[17] Ibid., 41.

models.[18] The characteristics of the design and planning school models of strategic planning assist leaders to provide direction and further influence their decision-making processes.

According to the authors of the book *Strategic Safari*, the design school proposes a strategy model that aims to fit organizational capabilities with external possibilities.[19] The premise of design school methodology is based on several concepts, some of which include:

- Formation should be a deliberate process of conscious thought, where strategies are deliberate;
- Strategies are the responsibility of the chief executive officer, who has command and control;
- Strategy formation is kept simple;
- Strategies are one of a kind;
- Strategies are fully formulated, leaving little room for emergence; and
- Strategies are only implemented after being fully developed.[20]

Where strategies provide direction through a set of goals and objectives, it is formal policy and standing operating procedures (SOPs) that ensure agencies and their individual subsets adhere to prescribed roles and responsibilities.

In the design school model, leaders are expected to be capable of developing strategies through a single perspective—theirs—from their position at the top of the hierarchical chain. Much of the analysis in this design uses the agency's strengths, weaknesses, opportunities, and threats (SWOT) or SWOT model, to underpin plans.[21] This practice has proven to be an invaluable tool for executives where they can use their authority in executing command and control. Furthermore, the design school suggests

[18] Henry Mintzberg, Bruce Ahlstrand, and Joseph Lampel, *Strategy Safari: A Guided Tour through the Wilds of Strategic Management*, 1st ed. (New York: Free Press, 1998), 5.

[19] Ibid., 24.

[20] Ibid., 32.

[21] Ibid., 38.

that environments can be understood, both currently and for a period of time into the future. This suggests that strategic plans can be created and executed, definitively; here the plan is designed to stand the test of time.

The planning school was developed during the same time as the design school and shares many similarities. The planning, like the design school also relies on the use of the SWOT analysis and the setting of objectives on the front end and the elaboration of budgets on the back.[22] This design model uses goals and strict objectives as a means of control. According to Mintzberg, Ahlstrand, and Lampel, the planning model breaks down strategies into sub strategies that give rise to an entities set of hierarchies.[23] This decomposition results in many steps that are the overall responsibility of the chief executive officer, broken down into managerial pieces that can easily be controlled.

The methodology of both the design and planning schools are not designed to promote flexibility. In fact, both models create inflexibility. In essence and by design, both models are not meant to illicit creativity but set direction. The models are designed to allow command and control to remain with the executive leader, and they are tools to ensure set objectives are met in accordance with management's original plan of action. By design, there is an understanding that the leader and creator of strategies developed under these models has some predetermined understanding of what the future holds, allowing him or her the ability to predict the course of the environment or assume its stability.[24]

The leadership and the individuals of organizations coordinate efforts through prescribed standard operating procedures (SOPs) and previously established policy and written directives. The culture, SOPs, doctrine, training, and mission of the organization are designed to provide skill-sets that allow employees to solve problems using those learned and indoctrinated competencies. Therefore, the organization or employee is

[22] Mintzberg, Ahlstrand, and Lampel, *Strategy Safari*, 49.

[23] Ibid., 53.

[24] Ibid., 66.

designed or trained to use his or her experience from his or her learned hermeneutic of that organization when engaging an issue, problem, or assignment.

An analogy to describe this phenomenon could be in the varying approach two doctors might take in their assessment of a patient experiencing back pain. In one instance, a doctor of chiropractic medicine might prescribe a holistic approach to deal with the patient where a surgeon would look to address the same issue with a more intrusive medical procedure. In both cases, the prescribed prognosis is based on the learning, experience, and professional opinion of each physician and his or her understanding and approach to patient treatment. Government organization behavior can therefore be described as outputs more than deliberate choices because it functions according to standard patterns of behavior.[25]

In his book, *Essence of Decision: Explaining the Cuban Missile Crisis*, author Graham Allison defines an organization as a group of people brought together and arranged systematically for harmonious or united action.[26] He further describes formal organizations as groups of individual human members assembled in regular ways and established structures and procedures dividing and specializing labor to perform a mission or achieve an objective. The many layers of bureaucracy and closely defined roles and responsibilities make it difficult for hierarchical agencies to collaborate in an ad hoc manner. As noted by Allison, the formal definition therefore does not include people brought together temporarily for a transient purpose.[27]

Outcomes of hierarchical organizations are closely defined by specific goals, policies, and procedures, which create structure, making it slow to adapt to the changing environment. Oftentimes, when change does occur it is in response to a catastrophic event (e.g., the events of 9/11, which later resulted in the creation of the Department of Homeland Security).

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[25] Allison and Zelikow, *Essence of Decision*, 143.

[26] Ibid., 145.

[27] Ibid., 144.

Command and control within the hierarchical organization model comes from agency leaders who are positioned above all layers of management. In this model, those at the top of the "table of organization," as often referred, are the decision makers and therefore have the power to command, set direction, and allocate resources.[28] The design explains why information flows, as described by Alberts and Hayes[29], include collection from the bottom up, while directives flow vertically top down. The middle serves to mediate, interpret, and ensure information is given and received. In other words, the middle pushes and pulls information from top to bottom and bottom to top.

From the review of the literature a framework for analysis of the case studies was developed. The framework includes the following characteristics that impact decision makers in hierarchical organizations: the organizational structure and its subsystems; authority (command and control); planning; information flows; organizational culture and behavior, and SOPs; policy; and governance. In the next section, a review of the literature as it relates to the ecosystem environment provides a second framework for analysis of the ecosystem model.

C. ECOSYSTEM ENVIRONMENT

Using Hawaii as a backdrop to describe the evolution of a self-contained biological world, author James Monroe describes how plant and animal life evolved over the course of thousands of years.[30] The period of ecological stability was drastically changed by the arrival of Polynesian voyagers and westerners who introduced animals, plants, and insects foreign to that environment, drastically changing the entire ecosystem of the island.

The scientific study of natural ecosystems is not new. The Earth's biosphere and its vast array of complex systems, including the cycles of life and energy, provide insight to the natural environment and its ability to adapt, react, and sustain life. This phenomenon is one that has garnered the interest of biologists and social scientists for

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[28] Alberts and Hayes, *Power to the Edge*, 174.

[29] Ibid.

[30] James Moore, "The Advent of Business Ecosystems," *Upside* 7, no. 12 (December 1995): 30.

centuries. Some of the characteristics of ecosystems are: diversity, self-organization, scalability, non-linear interactions, adaptability, and sustainability. It is these characteristics of nature, found in ecosystems, and the successful evolution of organisms that has led academics, engineers, and business leaders to use natural ecosystem models to better describe and understand the environments in which they study and work. In this model, ecosystems are defined as an association of organisms and their physical environment, linked by a flow of energy, and a cycling of materials—making them complex adaptive systems where organisms may share like characteristics, even though their physical properties may differ.[31]

Where the homeland security environment was not formally recognized until shortly after the events of 9/11, it comes as no surprise that research focusing on the environment as a natural, self-organizing, self-adapting community, or as an organization with characteristics of an ecosystem is somewhat limited. This review is therefore an analysis of the most relevant literature, where research scholars have used the laws of nature and the framework of natural ecosystems to demonstrate characteristics of ecosystems to create innovative organizational structures to enhance system efficiencies. The review starts with a focus on general systems theory (GST), examines literature related to digital and business ecosystems, and concludes with the most recent research of the homeland security enterprise through an ecosystem perspective.

Understanding the complexities of nature, science, economics, society, and private and public organizations and their interaction with their environment can be accomplished through a systems theory approach. The framework for studying problems, policies and programs related to complex systems was developed by Ludwig von Bertalanffy in what is known today as GST.[32] Since its inception, GST provides the framework for analysis of complexities as "wholes or systems," in all fields of

[31] Starr, *Biology*, 568.

[32] Ludwig von Bertalanffy, *General System Theory*, rev. ed., 9. printing. (New York: Braziller, 1984).

knowledge, which implies a basic re-orientation in scientific thinking. [33] Although Bertalanffy published GST in 1969, today GST is used to study various complexities that reach beyond a single discipline.

Bertalanffy notes, "in the study of systems, physical, biological, or sociological nature; models, principles, and laws exist which apply to generalized systems irrespective of their particular kind."[34] Other structural similarities or isomorphisms suggest that GST can be applied to varying fields of study; however, Bertalanffy notes that GST is not:

> …a search for vague and superficial analogies. The isomorphism under discussion is more than mere analogy. It is a consequence of the fact that, in certain respects, corresponding abstractions and conceptual models can be applied to different phenomena.[35]

GST provides academics with a mechanism to study systems in their entirety, within their environment where interdependencies can be studied, rather than first reducing the system down to its parts and then analyzing the pieces of the system separately. The advantage of this principle is that it can help to solve problems found in organizations that result from the interaction or relationship of parts. The application of GST to systems in the social sciences demonstrates the utility of GST's capability to reach beyond the complexities of easily quantifiable science.

Social science, according to Bertalanffy, includes sociology, economics, political science, social psychology, and the humanities.[36] GST recognizes "science," not a description of singularities but an ordering of facts and elaboration of generalities.[37] It was Bertalanffy's opinion that "social science is the science of social systems," and therefore it is appropriate to use GST in understanding systems in social science.[38] As

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[33] Bertalanffy, *General System Theory*.

[34] Ibid., 33.

[35] Eric Benhamou, "Digital World Mirrors Life of Ecosystems," *Computer Reseller News* (February 1996): 36.

[36] Bertalanffy, *General System Theory*, 194.

[37] Ibid., 195.

[38] Ibid., 196.

sociology includes many diverse fields and studies, from small groups to formal organizations, the application of systems theory to problems in government, business, and politics demonstrates that it works.[39] This proves that GST is not an approach limited to material entities. Using GST and the concept of an open-systems approach allows for the analysis of human behavior machines, etc.; the inflow of data or material and the system out-put, which, in turn, could provide answers to business efficiencies. While Bertalanffy continued his research in GST, other scholars embarked on other variations of systems theory.

Where GST has broad applications to various systems, the Tavistock Institute, in the late 1940s began the research of group relationships within organizations. This work led to the advent of sociotechnical systems theory (SST). The premise of SST is that organizations are a combination of technology (tasks, equipment and physical space) and social systems (a formal set of relationships among those who do the tasks), where there is constant interaction between the two.[40] SST takes into account the impact society has on individuals, their values, and expectations concerning work roles.[41] Conversely, technology brings about changes in values, life styles, and communications, which can have an impact on society as well. An example of how technology changed this interdependency between individuals and the organization can be illustrated through technological advances in World War II (WWII).

During WWII, a new military sociotechnical system appeared in the form of the German Panzer Division, which linked man to machine.[42] The technology gave prominence to small group formations, which led to a paradigm shift in the role of junior officers. The studies of sociotechnical systems were being used to develop new management philosophies with the ever-changing environment of organizations.

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[39] Bertalanffy, *General System Theory*.

[40] Eric Trist, *The Evolution of Socio-Technical Systems : A Conceptual Framework and an Action Research Program* (Toronto: Ontario Ministry of Labour Ontario Quality of Working Life Centre, 1981).

[41] Ibid., 11.

[42] Ibid., 13.

In 1965, the Tavistock Institute began a project with Shell Oil to develop a new management philosophy to establish values and principles, which would have the commitment of all levels of management and the workforce.[43] Although the Shell Oil project came to an end before completion, much of what was learned was shared, mirrored, and implemented by other companies around the world. What followed were sociotechnical concepts and methods that become one input into a wider field concerned with changing social values and the studying of the effects of values on organizations and their individual members.[44] The understanding was that industrial societies were producing conditions that impoverished workers quality of life. Therefore, the focus was the mental health aspects of the workplace, changing social values, and their effects on organizations. Other advances with sociotechnical systems theory have led to research that provide elements to further the study and integration of social and technical systems.

Swift advances in technology have created a paradigm shift in the relationships between technological and social systems.[45] In many organizations technology can be described as the lifeline for organization sustainability. As organizations embrace and integrate technology into their communication and knowledge-sharing environment, a process for integration and design is paramount to the success of the sociotechnical system. Thomas Herrmann, Kai-Uwe Loser, and Isa Jahnke, have researched and developed a method for integrating social and technical systems.[46] Their research examines a process they coined as, socio-technical walkthrough (STWT). Hermann et al., suggests that technical systems contribution to an organization is predicated on the degree of how well organizational and technical structures are adjusted to each other and how they are integrated.[47] The end goal of STWT is to systematically facilitate

[43] Trist, *The Evolution of Socio-Technical Systems*, 26.

[44] Ibid., 27.

[45] Thomas Herrmann, Kai-Uwe Loser, and Isa Jahnke, "Sociotechnical Walkthrough: A Means for Knowledge Integration," *The Learning Organization* 14, no. 5 (2007): 450–464, doi: 10.1108/09696470710762664.

[46] Ibid.

[47] Ibid., 450.

communications through workshops to develop a concept of the sociotechnical system design. The components, people, tasks, structure, and technology are all considered in the STWT.

Using feedback from collaborative type meetings at all levels within an organization, discussion, decision-making, needs, and perspectives are shared.[48] The process is facilitated using a modeling method, "SeeMe," where documentation in the form of diagrams represents work processes, interdependencies, and their relevance to the technical system being designed. One such case study, "A logistic enterprise goes Web" implemented the STWT to integrate a mobile communications system to support truck drivers and their dispatchers in a logistics company.[49] The process required technical design and new work-procedures, resulting in representatives of the company, including drivers, dispatchers, local management, head office management, and software-engineers, to participate in the STWT. In this particular case, STWT proved to be beneficial to the organization's sociotechnical enhancements.

GST and SST theories provide models for analyzing organizations in their entirety, a novel approach that includes influences from interdependencies found in complex systems. The models also provide a solution for the integration of technology using a holistic philosophy that incorporates all levels of the organization in the design and integration phases. The end goal is to improve management and technological efficiencies. Other research with technology and complex systems now looks to describe technology as a digital ecosystem that mirrors or shares similarities with natural ecosystems. In some cases, technological systems are so advanced that they are viewed as separate stand-alone systems.

Some of the early digital ecosystem research compared technological components of software and related networks associated with Web services to ecology and biological ecosystems. Where network systems provide an excellent example of a complex system

[48] Herrmann, Loser, and Jahnke, "Sociotechnical Walkthrough," 450.

[49] Ibid., 457.

and share attributes with natural ecosystems, including evolution, response to change, interdependency, and competition, the research was limited in that it did not include experiments to validate these claims.[50]

Through biomimicry, engineers have been able to draw analogies to complex systems to help define system organization and create innovation. The concept is well described in the article "Knowledge Sharing in Regional Digital Ecosystems," in which engineers address technological issues of fitness, sustainability, flexibility, and evolution using an ecosystem model.[51] The modeling of digital ecosystems to biological ecosystems can benefit business, commerce, economic enterprises and web based service oriented architectures. Although the validation through experimentation is limited, some engineers have developed studies that demonstrate that digital ecosystems can in fact be tested and perform in a fashion similar to their natural counterparts.

The work of Gerard Briscoe, Suzanne Sadedin, and Philippe De Wilde demonstrates the need for computer technology to meet the demands of today's end users. Their research demonstrates how ecosystem-oriented architectures (EOA) have similar characteristics to a natural ecosystem.[52] Other research focuses on networking solutions for the business industry that mimic a natural ecosystem environment. Where the term digital ecosystem has been loosely defined, the analysis presented in this review will discuss both the conceptual framework, with similarities to natural ecosystems and the artificially created digital ecosystems, where the term ecosystem is more than biomimicry.

The goal of Briscoe et al.'s research is to create digital EOA that mimicked the robust, scalable, and self-organizing properties of a natural ecosystem[53]. By considering how the properties of biological ecosystems influence function, researchers were able to

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[50] Benhamou, "Digital World Mirrors Life of Ecosystems."

[51] Anton Lavrin and Miroslav Zelko, "Knowledge Sharing in Regional Digital Ecosystems," *Organizaija* 39, no. 3 (March 2006): 191–199.

[52] Gerard Briscoe, Suzanne Sadedin, and Philippe Wilde, "Digital Ecosystems: Ecosystem-Oriented Architectures," *Natural Computing* 10, no. 3 (August 10, 2011): 1143–1194, doi: 10.1007/s11047-011-9254-0.

[53] Ibid.

identify similar characteristics in developing digital ecosystems, including population dynamics, evolution, a complex dynamics, evolution, a complex dynamic environment, and spatial distributions for generating local interactions.[54]

In work of Briscoe et al., engineers created an EOA, where the components of the digital ecosystem replaced or mirrored what would constitute the physical environment, and other biotic and abiotic organisms of a biological ecosystem. Agent, agent aggregation, habitat, agent migration, population, evolution, fitness, and bloat were all characteristics of the architecture.[55] Through various experiments, results showed that the EOA behaved similar to its biological counterpart, in that the EOA possessed the properties of self-organization, scalability, and sustainability.[56]

The research of digital ecosystems shows that computer scientists, engineers, and academics are cognizant of the impact that technological advances have had on the industry, as well as the demands of end users. The result is a complex network of systems that demands interoperability, sustainability, fitness, and self-organization from technological architectures and software design permitting enhanced efficiencies in the digital ecosystem environment. The advances of system theory and digital systems have created opportunity for the business sector, where many of the GST and digital system characteristics are also prevalent in the business ecosystem.

As vast advances in technology have created a new, more complex system for the technological environment, similar advances, and evolutionary changes in economics have forced modern businesses to reconsider how they should interact and adapt to this new, more complex, environment. The business industry has been forced to adapt to the new dynamic of globalization, multinational corporations, and advances in information and knowledge sharing. The result has some academics and business leaders modeling business strategies after natural ecosystems, rather than the traditional, linear, hierarchical model.

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[54] Briscoe, "Creating a Digital Ecosystem," 1147.

[55] Ibid.

[56] Ibid., 1185.

Early research suggests that business ecosystems develop in four distinct stages: birth, expansion, leadership, and self-renewal—or, if not self-renewal, death.[57] Each of the stages in this evolution required leaders to create business strategies that are divergent from traditional models focused on battling for market share. Contrary to tradition, the ecosystem model requires input with customers, suppliers, and other business partners to develop innovative solutions, market expansion, vision, and sustainability. This concept was not adopted without hesitation, which brings light to the question about the natural adaptation that occurs in a natural ecosystem as opposed to the business ecosystem.

James Moore describes how businesses, during the early 1990s, were hesitant to develop strategic plans capable of addressing concepts of "networks of organization and trans-industry landscapes of commerce" in his article, "The Advent of Business Ecosystems."[58] In describing the current state of the business environment, Moore states, "new technologies, business processes and organizational life forms are invading all traditional business. They are borne out of the winds of global capital flows and managerial migration."[59] The research demonstrates how many former business practices became obsolete, leading to a new wave of strategic thinking. As the landscape changed, so did traditional market boundaries, thrusting companies into competition with rivals that previously competed in other business markets.[60] At the time, it was suggested that the business model of well-defined industries lacked the foresight to allow businesses to adapt to demands, which required novel strategies that could create viable networks within the market. Moore emphasizes his vision in stating, "It is more important to see a company within its 'food-chain' and the food chain as a whole thriving or struggling in a wider opportunity environment—than in competition with superficially similar firms bundled together in an industry."[61]

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[57] James Moore, "Predators and Prey: A New Ecology of Competition," *Harvard Business Review* 71, no. 3 (June 1993): 2.

[58] Moore, "The Advent of Business Ecosystems," 2.

[59] Ibid., 1.

[60] Ibid., 2.

[61] Ibid.

The role of information technology is described as a critical component in the business ecosystem. Information technology has become the vehicle for the development of business ecosystem opportunities, growth, and innovation.[62] Wal-Mart is a prime example of how a leading edge company was able to capitalize on networking information technology as a service to its supply chain hub. Using a product known as Retail Link, Wal-Mart was able to connect to thousands of manufacturers, enhancing business relationships, and efficiencies.[63] The interdependencies created through the use of Retail Link added value to both Wal-Mart and the many suppliers who supplied its business. The paradigm shift in business strategy was in the focus—not on internal capabilities but the collective properties of networks that supported supply chain partners.[64] The added complexity of business networks has been used to demonstrate the similarities between natural and business ecosystems. Where networks are a focus in much of the early literature, more recent studies define other ubiquitous characteristics of the business ecosystems and their "natural" counterpart.

Ecosystem fitness, sustainability, and health are as relevant in natural biology as in the metaphoric business paradigm. The measure of "health," as described by Iansiti, includes capabilities with respect to competitors, customers, partners, and suppliers, as well as the interactions with the ecosystem as a whole.[65] Key to assessing the business ecosystem health is: levels of productivity, robustness, and niche creation. Traditional business models use the return on invested capital as the metric for measuring productivity. However, the business ecosystem approach is more complex, using three productivity-related metrics: factor productivity, change in productivity over time, and delivery of innovations.[66] These complex measurements focus on the business

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[62] Marco Iansiti, *The Keystone Advantage : What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability* (Boston, MA: Harvard Business School Press, 2004), 3; Hyeyoung Kim, Jae-Nam Lee, and Jaemin Han, "The Role of IT in Business Ecosystems," *Communications of the ACM* 53, no. 5 (May 2010): 151, doi:10.1145/1735223.1735260

[63] Iansiti, *The Keystone Advantage*, 2.

[64] Ibid., 4.

[65] Ibid., 43.

[66] Ibid., 48.

organization and its partner interdependent agents. Robustness and niche creations are also considered important factors in measuring ecosystem health and sustainability.

The literature related to business ecosystems uses the term ecosystem as a metaphor, providing business leaders with a heuristic by which business strategies can be developed to encourage: creating business networks, metrics to analyze productivity, innovation, and niche creation. The research shows similarities between digital ecosystems and natural ecosystems. In some literature, digital ecosystems and business ecosystems are viewed as separate systems, and in other literature, they are described as organisms within the same environment. In some cases, government agencies have made in roads to create interdependencies and establish open networked solutions in order to solve problems.

Using the lessons learned from the ecosystem based management philosophy, the United States and Canada created interdependencies as well as a greater level of connectedness between agencies and leaders. The remedial action plan for restoring the polluted Great Lakes, a model with both a philosophical and a contextual approach and which required holistic planning, research, and management, provided the requisite framework for success.[67] According to John Hartig, Michael Zarull, Thomas Heidtke, and Hemang Shah, success in ecosystem management requires cooperation and collaboration among stakeholders.[68] Stakeholders representing diverse social, economic, and environmental interests within communities should be involved as equal partners in defining needs, and identifying solutions to problems.[69] The approach is bottom-up requiring leaders to empower and encourage "grass-roots" solutions to problems.

[67] John Hartig, Michael Zarull, Thomas Heidtke, and Hermang Shaw, "Implementing Ecosystem-based Management: Lessons from the Great Lakes," *Journal of Environmental Planning and Management* 41, no. 1 (1998): 45–75.

[68] Ibid.

[69] Ibid., 45.

Authors Booher and Innes developed a collaborative governance model for organizations to follow.[70] The platform includes the current practices of hierarchical organizations and open collaborative models to deal with the complexity of modern problems. Here, the collaborative rationality is not about finding one best solution through the resources of one entity, rather the goal is to develop rational processes by engaging multiple partners in order to seek a new way forward, while building community and governance capacity to face challenges.[71]

In the mental model, as it is referred, the heuristics of interaction include: 1) obtaining valid information; 2) making informed choices; and 3) assuring internal commitment to those choices.[72] The use of this model allows for emergence in problem solving and learning. As problems, information, and potential solutions are shared there is room for flexibility, continued change, refining processes, and resolutions to issues. Although limited, there is research and analysis that compares the homeland security environment to that of an ecosystem.

In his book, *Learning from the Octopus: How Secrets from Nature Can Help us Fight Terrorist Attacks, Natural Disasters, and Disease*, Rafe Sagarin shares his insight and research of natural ecosystems and the lessons homeland security professionals can learn by understanding key characteristics of ecosystems and applying those principles to homeland security.[73]

Focusing on adaptation, Sagarin describes how agents in natural ecosystems learn through experience and then adapt to increase their likelihood of survival. As an example, he describes the learned behavior and encoded warning systems in the animals that fled to higher ground on December 26, 2004, just hours prior to the tsunami that claimed the

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[70] Judith E. Innes and David E. Booher, *Planning with Complexity an Introduction to Collaborative Rationality for Public Policy*, 1st ed. (New York: Routledge, 2010), http://public.eblib.com/EBLPublic/PublicView.do?ptiID=481030 (accessed September 14, 2012).

[71] Innes and Booher, *Planning with Complexity*, 200.

[72] Ibid.

[73] Rafe Sagarin, *Learning from the Octopus: How Secrets from Nature can Help Us Fight Terrorist Attacks, Natural Disasters, and Disease* (New York: Basic Books, 2012), Kindle edition.

lives of 225,000 people across India, Africa, and Southern Asia.[74] In comparison, he shares another example of the decentralized open environment created by soldiers during the Afghanistan war, which led to their novel approach to alter military vehicles, by adding armor to increase their protection from improvised explosive devices.[75] Emphasizing the necessity for organizations to exhibit characteristics of a natural ecosystem Sagarin quotes Sun Tzu, "A military force has no constant formation, water has no constant shape; the ability to gain victory by changing and adapting according to the opponent is called genius."[76]

Using the principles of adaptation and learning, Sagarin outlines the methods and differences between natural ecosystems and government organizations[77]. In the analysis, government organizations are compared to biological ecosystems, where organizations are said to adapt and alter practices based on their changing environment. That however is where organizations stray from the natural world to the theoretical constrictions of "organizational routines."[78] In nature, changes in the environment lead to emergence, organisms learn and adapt in order to survive; in hierarchical organizations the process is not always one that derives from emergence but is forced through mechanistic, methodological routines, where learning is often cyclical and unnecessary.

Sagarin further describes how soldiers in Iraq were able to adapt to the threat of improvised explosive devices (IEDs).[79] However, with each change in tactics, the enemy also changed; this phenomenon led to a scenario not uncommon in war, business, and natural ecosystems, a game of chess with no-known winner. The soldiers' experience and their decentralized systematic practice of solving problems through novel approaches was only one of several contributing factors that minimized the threat to U.S. soldiers. According to Sagarin, the keystone variable to maintaining a reduced threat was

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74 Sagarin, *Learning from the Octopus*, 133.

75 Ibid., 89.

76 Ibid.

77 Ibid.

78 Ibid., 46.

79 Ibid.

attributed to the relationships and collaboration between soldiers and civilians from local tribes.[80] It was these relationships that led to a sharing of information and a rapid decline in IED attacks against U.S. soldiers.

In biology, the relationship between organisms is often defined as symbiotic. Symbiosis can be defined as: mutualistic, where both parties benefit; commensalisms, where one party benefits and the other is not affected; and parasitic, where one gains and the other suffers.[81] According to Sagarin:

> …symbiosis creates reactions that are more than just the sum of two organisms working together. Symbiosis creates emergent properties that you wouldn't predict from just looking at the two organisms on their own. That is to say, symbiosis transforms an organism and transforms the environment around the organism. The relationship creates whole networks of interactions, builds new habitats for other species to use, and even changes the tenor of conflict in the larger ecosystem.[82]

Through their studies, research scientists have also discovered how cooperative relationships, or "mutualisms," can produce emergent properties. This research has shown that mutualisms are not always balanced, resulting in one party gaining by over exploitation.[83] These findings demonstrate that as powerful as symbiosis is, it is also fallible.

Throughout the research, the significance of relationships between organisms and their impact on ecosystem fitness as well as the impact relationships have in problem solving between government agencies is well described. Examples in nature demonstrate the need and often the lack of perceived cooperation between organisms. Collaboration through symbiotic relationships can result in adaptations and emergence that might not otherwise be recognized by an individual organism.

From a review of the literature a framework used to analyze the research case studies was developed. The framework includes: strategic planning, cooperation,

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80 Sagarin, *Learning from the Octopus*, 172.

81 Ibid., 173.

82 Ibid., 174.

83 Ibid., 191.

collaboration, interdependencies, information flows, diversity, emergence, and networks. The following chapter provides an overview of the methodology and a description of the research design and analysis. The chapter then describes the New Jersey (NJ) homeland security enterprise and then, from that enterprise, both a hierarchal and ecosystem perspectives are provided.

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III. METHODOLOGY OVERVIEW

Qualitative research is the preferred method for this study as it is one of the suggested means for understanding complex situations that are often exploratory in nature, where observations allow for theory to be built from the ground up.[84] Furthermore, qualitative research methodology is well suited for this research design as there are limited studies or literature related to this research question, which asks, "What can be learned through a comparative analysis that examines the influence the current hierarchical homeland security environment in New Jersey has on decision makers relative to an organizational model similar to an ecosystem?"

A. RESEARCH DESIGN AND ANALYSIS

The research will analyze the impact the homeland security environment has on decision makers through the analysis of two separate lenses. An analysis of New Jersey's homeland security environment will be conducted through two separate case studies using the frameworks created through the literature reviews in the hierarchical and ecosystem sections.

The frameworks used for examination of the hierarchical organization environment will analyze the characteristics of homeland security agency organizational structures and their subsystems, command and control authorities, planning, information flows, organizational culture and behavior, SOPs, policy, and governance. The framework to examine the ecosystem model will include strategic planning, cooperation, collaboration, interdependencies, information flows, diversity, emergence, and networks. In both frameworks the analysis will focus on the relationship and impact each characteristic has on agency decision makers.

What follows in section B is an overview of those agencies and their roles within the NJ homeland security environment. Subsequent sections then provide a hierarchical and ecosystem perspective.

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[84] Paul D. Leedy and Jeanne E. Ormrod, *Practical Research : Planning and Design* (Upper Saddle River, NJ: Merrill, 2010).

B. NEW JERSEY'S HOMELAND SECURITY ENVIRONMENT

In this section, an overview of the New Jersey homeland security environment is provided in three parts. The first section describes how the federal government, post 9/11, has influenced the homeland security environment and what that environment looks like in the state of New Jersey. The second and third part of the analysis describes New Jersey's homeland security environment from both a hierarchical and an ecosystem perspective. In both perspectives, the description of the environment focuses on describing key aspects of each framework described in the previous section.

The analysis starts with a description of the U.S. federal homeland security environments. This is critical to the subsequent account of New Jersey's homeland security environment, as the federal model has influenced and required state agencies to follow certain practices and develop capabilities that align with federal agencies. Many of these requirements came with the acceptance of federal grant dollars. The overview includes background information that led to the creation of the Department of Homeland Security (DHS), supporting agencies, and the DHS mission, roles, and responsibilities, which will set the context for understanding NJ's homeland security environment.

One still hears the question asked, "What is homeland security?" Is it a program, an objective, a discipline, an agency, an administrative activity, another word for emergency management? Is it about terrorism? All hazards? Something completely different?[85] The research analysis will define the term homeland security as it is applied in New Jersey. The definition is key to understanding strategic goals, missions, and assignments of the agencies inclusive of NJ's homeland security environment.

> After 9/11 the nation turned its attention to terrorism and the need to better collaborate among local, state, and federal agencies. In the spring of 2003, the U.S. DHS was established, with 22 distinct agencies and bureaus and more than 180,000 employees. The formation of DHS was a direct response to interagency shortcomings associated with 9/11. It was aimed

[85] Christopher Bellavita, "Changing Homeland Security: What Is Homeland Security," *Homeland Security Affairs Journal* 4, no. 2 (June 2008): 1.

> at increasing interagency integration, preparation, and responsiveness in the increasingly uncertain, complex, and hostile context of terrorist threats.[86]

The *9/11 Commission Report*, published July 2004, recommended significant changes in the organization of government, prescribing a unity of effort that would integrate intelligence agencies and foster analysis and information sharing.[87]

The *Homeland Security Strategy* (2010) defines the overarching mission and objectives for those agencies that fall under the umbrella of the DHS[88]. It identifies the nation's need to: compete in a global market; proactively identify threats to the homeland; and, prevent potential natural and man-made events through proactive measures[89]. It stresses that the "Strategy—as an instrument of achieving national goals—should aim to put in place the infrastructure, laws, ideas, and capabilities that will enable the U.S. to be flexible in adapting to current and unforeseen threats."[90] Within the context of the phrase "homeland security," the strategy is a comprehensive document that provides the basis for advancing U.S. interests abroad, the security of the American people, economic growth and protection, and a focus on future challenges.

Where at the federal level the DHS is inclusive of the many agencies responsible for the federal homeland security mission, the state of New Jersey includes various state entities that serve in the homeland security mission but do not fall under the auspices of a single entity similar to the DHS structure.

In order to understand the dynamic of NJ's homeland security environment, it is imperative to have a full understanding of the agencies or entities that make up the homeland security enterprise as well as the structure of those organizations. Richard Daft

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[86] Susan P. Hocevar, Gail F. Thomas, and Erik Jansen, "Building Collaborative Capacity: An Innovative Strategy for Homeland Security Preparedness," in *Advances in Interdisciplinary Studies of Work Teams*, vol. 12, ed. Michael Beryerlein (Bingley, UK, 2006), 255–274.

[87] 9/11 Commission, *The 9 11 Commission Report*.

[88] White House, *National Security Strategy 2010* (Washington D.C.: White House, 2010).

[89] Ibid.

[90] "U.S. National Security Strategy 2010," *The National Strategy Forum Review* 19, no. 1 (Winter 2009): 1–4, http://www.nationalstrategy.com/NSFReview/Winter2009Vol19No1USNSS2010.aspx (accessed November 12, 2012).

defines organizations as social entities that are goal-directed, deliberately structured, and coordinated activity systems and are linked to the external environment.[91] Accordingly, organizational construct falls into two dimensions, structural and contextual. The structural dimension includes the internal characteristics (i.e., regulations, policy, specialization, hierarchy of authority, and centralization). The contextual dimension on the other hand is the whole organization, size technology, environment, and culture.[92]

The New Jersey Office of Homeland Security and Preparedness (NJ OHSP), Office of Emergency Management (OEM), and the Regional Operations Intelligence Center (ROIC) are recognized as the primary organizations for homeland security events. Subsequent to the following descriptions of the OHSP, OEM, and the ROIC are (Tables 1 through 4 depicting other supporting agencies that function within the homeland security environment. The tables are separated into four cornerstone groups.

The NJ OHSP was created in March of 2006 through Executive Order 5.[93] The order empowered the office to administer, coordinate, lead, and supervise New Jersey's counter-terrorism and preparedness efforts. The order states, "The goal of the Office shall be to coordinate emergency response efforts across all levels of government, law enforcement, emergency management, non-profit organizations, other jurisdictions and the private sector, to protect the people of NJ."[94]

Since its inception, the OHSP has become the state lead agency for counter-terrorism and homeland security preparedness efforts and the state coordinator of what the homeland security strategy describes as the "homeland security enterprise."[95] To fulfill this mission, the OHSP consists of two divisions, the Division of Operations and the Division of Preparedness. The Office is also designated as the State Administrative Agency (SAA) for all federal homeland security and preparedness funding.

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[91] Daft, *Organization Theory and Design*, 11.

[92] Ibid., 15.

[93] *State of New Jersey Executive Order #5* (Corzine, 2006).

[94] Ibid.

[95] New Jersey Office of Homeland Security and Preparedness, "New Jersey State Homeland Security Strategy 2012" (internal document, State of New Jersey, West Trenton, NJ, 2012), 11.

The NJ OEM was established in December 1980 by Governor's Executive Order 101.[96] The executive order established the office within the New Jersey Division of State Police, Department of Law and Public Safety. The Superintendent of the New Jersey State Police (NJSP) holds the title Colonel as well as Director of the OEM, giving him direct reporting responsibility to both the Attorney General as Colonel and the Governor as Director of OEM. The NJ OEM falls within the Emergency Management Section, Homeland Security Branch of the Division of State Police. The section is comprised of three bureaus: Recovery, Response, and Communications. With the establishment of the OEM, the Office is responsible for coordination of all federal and state natural disaster assistance operations and resources as well as the enforcement authority of defense and emergency policies, laws, rules, and regulations. The NJ OEM organizes, staffs, and coordinates activities of the State Emergency Operations Center (SEOC), facilitating the flow of information among the 21 county OEMs and state and allied agencies. The NJ OEM is also responsible for coordinating development of the State Emergency Operations Plan. The bureaus that make up the Emergency Management Section (EMS) are subdivided further into units that have various responsibilities.

Key units within the EMS include the Radiological Emergency Response Planning and Training Unit (RERP&T), the Urban Search and Rescue Unit (USAR), and the Emergency Response Bureau, Regional Units. The RERP&T Unit is responsible for the planning, training, and exercising of all first responders, municipal, and county officials within the 10-mile radius of the state's two nuclear facilities. The Unit is also responsible for the dissemination of more than one million dollars in funding to RERP&T agencies to support their preparedness efforts. The USAR Unit includes more than 200 first responders from around the state who train and support the unit during significant incidents that are beyond local control. All members are trained in the various skill sets necessary to meet the Federal Emergency Management Agency (FEMA), USAR standards. Also significant to the EMS is the Emergency Response Bureau's Regional Units. Members of the regional units are trained and equipped to liaison with county

96 "Emergency Management in New Jersey—A Historical Perspective," State of New Jersey, http://www.state.nj.us/njoem/press_emhistory.html (accessed November 20, 2012).

offices of emergency management in their prevention, preparedness, response, and recovery efforts. Representatives work directly in county emergency operations centers when activated to assist in all facets of response and recovery operations.

In 2006, the state of New Jersey formed the New Jersey Regional Operations Intelligence Center Task Force and opened the doors to its first fusion center, the "NJ ROIC." The NJ ROIC, whose foundation is the intelligence-led policing model, is a collective effort of multiple agencies that provide resources, expertise, and information to maximize the state's ability to detect, prevent, investigate, and respond to all crimes and hazards that may impact the state. The governance and oversight of the NJ ROIC, which includes a body of executive-level homeland security professionals, provides the basis for the many interorganizational partnerships that support NJ ROIC activities. The governance committee ensures that goals and strategies are developed through interagency collaboration while adhering to federal and state laws. All intelligence activities associated with information sharing remain consistent with the National Criminal Intelligence Sharing Plan, ensuring the protection of the privacy, civil rights, and civil liberties of individuals and organizations.[97]

The NJ ROIC consists of three major components: the Intelligence Watch and Warning Unit, the Analysis and Intelligence Unit, and the Fusion Liaison Intelligence and Training Unit. The Intelligence Watch and Warning Unit serves as the central notification point for all emergent operations throughout the state and also provides tactical information and intelligence through the utilization of a number of federal and state databases. The Analysis and Intelligence Unit serves as the intelligence analysis component, housing analysts and law enforcement officers from various federal and state agencies. Organized into two main program areas—threat analysis and crime analysis—these analysts and officers contribute to a wide range of intelligence products related to crime and homeland security, following an "all-threats, all-hazards, all-crimes" approach.

[97] "NJ ROIC Privacy Policy," (internal document, Regional Operations Intelligence Center, West Trenton, NJ, February 2011.

The Fusion Liaison Intelligence and Training Unit's primary responsibility is to share information with the private sector, including non-classified briefings related to potential homeland security threats.

Table 1. Group 1: NJ Organizations with Homeland Security as a Primary Mission

• New Jersey Office of Homeland Security and Preparedness (OHSP)	• NJ OHSP Infrastructure Advisory Committee (IAC)
• New Jersey State Police	• Urban Search and Rescue (USAR)
• New Jersey Regional Operations Intelligence Center (ROIC)	• NJ County and Local Offices of Emergency Management
• New Jersey Office of Emergency Management (OEM) including volunteer programs.	• Urban Area Security Initiative (UASI), Bergen, Essex, Hudson, Middlesex, Morris Passaic and Union county members
• NJ Department of Military and Veterans Affairs (DMAVA)	• Emergency Medical Services Task Force (EMSTF)
• NJ Domestic Security Preparedness Task Force (DSPTF)	• NJ Disaster Medical Assistance Team (NJDMAT):

Table 2. Group 2: Non-NJ Organizations with Homeland Security as a Primary Mission

• *Regional Catastrophic Planning Group* (RCPG): A consortium of NJ, NY, NYC, PA, and CT focused on creating plans and policies for response to large scale disasters affecting the four-state region.	• *Utilities/Critical Infrastructure Organizations*: Public and Private Sector organizations providing core functions or Lifeline Functions (i.e., gas, water, electricity).
• Federal Emergency Management Agency (FEMA): NJ falls within FEMA Region II and coordinates with FEMA's designated Region II representatives predominantly through the NJ Office of Homeland Security and during emergencies, through the NJ Office of Emergency Management.	• U.S. Department of Health and Senior Services Assistant Secretary for Preparedness and Response (HHS/ASPR) and Centers for Disease Control and Prevention. HHS/ASPR provides health and medical Regional Emergency Coordinators who liaison predominantly with the NJ Department of Health and Senior Services.
• U.S. Department of Homeland Security Critical Infrastructure, Office of Health Affair, and Science and Technology Directorate. (DHS CI/OHA/S&T): Organizations that support NJ homeland security through cooperative programs, funding, or research.	• Joint Terrorism Task Force (JTTF): FBI, DHS components such as U.S. Coast Guard, U.S. Immigration and Customs Enforcement, U.S. Customs and Border Protection, the Transportation Security Administration, and the U.S Secret Service.
• Department of Defense (DoD): Active Duty (Title 10 Forces) and National Guard forces.	• U.S. Department of Homeland Security Operational Assets (U.S. Coast Guard, Immigration and Naturalization, Customs and Borders, TSA etc.).
• NYC and Philadelphia Offices of Emergency Management.	• Non-Governmental Organizations including the Red Cross and the Salvation Army.
FBI	

Table 3. Group 3: Organizations with Homeland Security Functions or Programs

• NJ state agencies including Department of Health and Senior Services, Department of Environmental Protection, Board of Public Utilities, Department of Transportation, NJ Transit, Department of State, Department of Agriculture, Office of the Attorney General, Department of Education, and others.	• The U.S. Department of Homeland Security Command, Control, and Interoperability Center for Advanced Data Analysis located at Rutgers University
• NJ Preparedness College Consortium: Rutgers University, Richard Stockton College, NJ Institute of Technology, University of Medicine and Dentistry of New Jersey, Fairleigh Dickinson University, Monmouth University, Princeton University, Stevens Institute of Technology.	• County/ local government agencies including, law enforcement, fire, county prosecutors, and emergency medical service coordinators.
• Major corporations	• Special interest groups
• National laboratories	• NY/NJ Port Authority

Table 4. Group 4: Organizations with Homeland Security Interests

• Community leaders	• Academic programs
• Business community	• Major Convention Center/sports arenas/malls/amusement parks
• New Jersey League of Municipalities	

In the following two sections, 1 and 2, a hierarchical and ecosystem analysis of New Jersey's homeland security environment is presented.

1. Hierarchical Analysis

Much of the structure, bureaucracy, and hierarchical development of today's governmental organizations can be traced back to the classical perspectives of the organizational model developed during the Industrial Revolution. The mechanistic style of this model tends to be very specialized and has many written rules—a tall order of hierarchy and clear understanding of the organizations rules and regulations and well-

defined goals.[98] It is not by coincidence therefore that the command and management structure for homeland security emergency response activities includes a well-defined hierarchical structure. Today, that organizational structure is well ingrained in the Incident Command System (ICS).

On February 28, 2003, President George W. Bush issued Homeland Security Presidential Five (HSPD-5), which directs the Secretary of Homeland Security to develop and administer a National Incident Management System (NIMS).[99] The purpose of the directive was to develop a system for government and non-government organizations to work in an integrated approach in preparedness, prevention, response, and recovery incidents. According to DHS, "The NIMS represents a core set of doctrine, concepts, principles, terminology, and organizational processes to enable effective, efficient, and collaborative incident management at all levels."[100] One of the components of NIMS is the ICS, which defines the operation attributes and management structure that organizations will adopt for command and control of any incident. It is a system designed to enable effective and efficient incident management with a common organizational design.[101] ICS is designed to be to be used for all events.

Where the design of the ICS includes a single commanding officer, the model mirrors that of a traditional hierarchical organization. The incident commander has overall authority and responsibility of the incident. The hierarchical structure of the ICS is managed by objectives, which are established, approved, and directed under the coordination of the incident commander. The incident commander can perform any, all, or designate to others, the associated management responsibilities of the ICS. The ICS structure includes an operations section, planning section, logistics section, and a finance/administration section.

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[98] Daft, *Organization Theory and Design*, 31.

[99] U.S. Department of Homeland Security, *National Incident Management System* (Washington, D.C.: U.S. Department of Homeland Security, 2004), ix.

[100] Ibid.

[101] Ibid., 7.

Following the hierarchical model, the state of New Jersey created and empowered the NJ Office of Homeland Security and Preparedness (OHSP) as the responsible authority for developing the state's homeland security strategy. The strategy is a top down hierarchical planning model that includes the New Jersey's homeland security vision statement, which is:

> A safe, secure and well prepared New Jersey. The mission is to ensure that New Jersey is prepared to prevent and mitigate, to the fullest extent possible, the spectrum of destructive and injurious consequences resulting from manmade or naturally occurring catastrophic events and emergencies that have the potential to harm our state and nation.[102]

As described in the strategy, a considerable amount of guidance for the homeland security strategy is derived from the federal government: National Preparedness Goal, National Response Framework, National Infrastructure Protection Program, National Preparedness Guidance, and Target Capability List.

Using an all-hazards and terrorism risk assessment, the OHSP focused on threats, consequences, and vulnerabilities when developing the state's security strategy. The culmination of the threat analysis and supporting documents helps to define the term homeland security. The strategy defines homeland security as:

> Homeland Security: for New Jersey is meant to define an all hazards approach to state security that goes beyond acts of terrorism. Within our definition of Homeland Security is the deterrence of man-made acts to include acts of terrorism as well as industrial accidents that could imperil the health and safety of New Jersey citizens. Homeland Security also includes within its definition the planning, preparation and response to acts of nature such as hurricanes, wildfires and flooding.[103]

The framing of the homeland security environment includes a combination of the Homeland Security and New Jersey Office of Emergency Management Assessments. The environment includes terrorist, natural disaster, health, and environmental and industrial threats to New Jersey. The strategy not only identifies the threats the state must prevent,

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[102] "New Jersey State Homeland Security Strategy 2012" (internal document, New Jersey Office of Homeland Security and Preparedness, West Trenton, NJ, 2012).

[103] "New Jersey State Homeland Security Strategy 2012."

prepare, respond, recover, and mitigate but also the agencies responsible for leading the mission.

Additionally, leaders of many of the organizations within the homeland security environment develop separate agency strategic plans. The plans are often developed at the highest levels within the organization and then passed down to subordinates, who are responsible for accomplishing strategic objectives.

Within each of the agencies in the homeland security environment command and control is established through a hierarchy where agencies are broken into subsets often identified as bureaus or units. Control and efficiencies are created through organization design, standing operating procedures (SOPs), and agency defined roles and responsibilities. The specialized function of individual units within many agencies creates mission specific capable abilities with a narrowly focused set of responsibilities. Under this construct, patrol, investigations, and administrative functions are examples of how some law enforcement agencies in New Jersey function. The hierarchy and specialization of units allow commanders to quickly identify and allocate resources. The individual agencies subsequently share information through the agency chain of command. The specialization and individualization established through hierarchies influences agency culture.

Efficiencies are another common characteristic of government agencies. Where government agencies are not driven by a bottom line the same way business is in the private sector; however, customers (citizens) demand that agencies operate efficiently and with clear objectives and under strict direction from management. This demand results in efficiencies, which in turn can limit creativity. This can lead agencies to develop and strive for ideal solutions to ensure their decisions meet public expectations. Where the structure of the organization is one example of how agencies create efficiencies, there are still other noteworthy organizational behaviors in the hierarchical model.

Control and efficiencies are often created through organization design, standing operating procedures (SOPs), and agency strategies. The specialized functions of

individualized units create mission specific capabilities with a narrowly focused set of responsibilities. Under this construct, the silos created allow leaders to quickly identify and allocate resources in a way not practical under a linear agency model.

In this analysis, culture is defined as, "the set of values, norms, guiding beliefs, and understandings that is shared by members of an organization and taught to new members as the correct way to think, feel, and behave. It represents the unwritten, feeling part of the organization."[104] The NJ Homeland Security Environment includes a multitude of individualized agencies, each with their own identity and culture. The culture of an organization can strongly influence leaders and shape the behavior of individuals within the organization to conform to norms, creating an identity specific to the organization.[105]

The New Jersey homeland security environment has also created hierarchy within various committees, including the Domestic Security Preparedness Task Force and the ROIC governance board. Both groups are regulated, one through a set of policy by-laws and the other through a governors executive order. Leaders over see each group, where goals, objectives, and homeland security strategies are established.

Where this section provided an analysis of the New Jersey homeland security environment from a hierarchical perspective, the next section will analyze the same environment using the ecosystem framework.

2. Ecosystem Analysis

With the creation of a national homeland security environment and subsequent homeland security environment in the state of New Jersey, the addition of new government entities, policies, and practices led to enhancements that have created similarities to natural ecosystems. The term ecosystem, used, as an isomorphism is therefore an appropriate depiction in describing many of the characteristics found in the New Jersey homeland security environment. Therefore, the analysis focuses on the

[104] Daft, Organization Theory and Design, 317.

[105] Allison and Zelikow, *Essence of Decision*, 145.

following key characteristics, collaboration, interdependencies, information flows, diversity, emergence, networks, and strategic planning.

In 2003, President George W. Bush issued *Homeland Security Presidential Directive Five*.[106] The directive established the National Incident Management System. One component of NIMS is the use of ICS. Where the design of the ICS allows for the use of multiple commanders or a unified command, when used in that variation, command is shared between two or more department or agency leaders. The approach to unified command enhances collaboration and creates an additional level of interdependency between agencies. Where the adoption of the federal NIMS led to one example of collaboration between agencies, the state of New Jersey promoted yet other forms of collaboration through the creation of the OHSP.

The OHSP, the responsible authority for developing the state's homeland security strategy includes an all threats, all hazards approach that includes prevention, preparedness, response, recovery, and mitigation efforts with a "whole" of government approach. The strategy addresses the need for government and private sector collaboration. A similar strategy developed by the New Jersey Office of Emergency Management takes a similar approach; it also includes the collective force of all participating agencies in the state's emergency operations plan to collaborate in reaching the plans desired goals.

With the creation of the NJ ROIC, more than 20 county, state, and federal agencies have participated and supported the vision and mission of the state's fusion center. Where the primary objective of the ROIC is to be the point of information sharing for the state, an untold number of agencies have contributed to its success. The fusion center creates collaboration and enhances information sharing through its production of more than 15,000 messages and 1,600 intelligence products produced annually.[107] Furthermore, the ROIC's governance board includes a diverse membership of government leaders and the private sector creating a homeland security network.

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[106] "Homeland Security Presidential Directive-5," Federation of American Scientists, February 28, 2003, http://www.fas.org/irp/offdocs/nspd/hspd-5.html (accessed November 20, 2012).

[107] From this author's experience.

Chapter III included an overview of the research methodology and the research design, which included the framework for case study analysis. The chapter also included a description of those agencies that included in the NJ homeland security environment, followed by a hierarchical and ecosystem analyses focusing on those characteristics that encompass the analysis framework. In Chapter IV provides an overview of the two case studies, which will also be analyzed through the hierarchical and ecosystem lenses.

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IV. DATA COLLECTION

The case studies used for this research will be the primary source of data for the analysis. The two case studies, the National Socialist Movement protest of April 16, 2011 and the on-going Route 21 Corridor Violent Crime Suppression Initiative were chosen primarily for two reasons. Each case had a level of complexity that required the inclusion of local, state, and federal agencies in support of event objectives. Each case could also be described as events with a homeland security nexus and fell within the purview of the New Jersey state homeland security environment. The two cases presented include the most accurate depiction available using internal agency and open source documents.

A. THE NATIONAL SOCIALIST MOVEMENT RALLY

1. Background

On December 10, 2010, the Chief of Staff of the National Socialist Movement (NSM), Jason Heicke applied for a "permit to gather" for a political demonstration with the state of New Jersey. According to initial reports, the NSM expected between 75 and 150 members of the organization to participate in the rally, with an additional 1000 to 3000 counter protestors.[108] The date to protest was set for April 16, 2011. As the event was believed to potentially cause unrest and possible civil disorder with other organized political groups or counter protesters, a detailed security plan was developed. The plan required input from various agencies in order to ensure appropriate consideration was given to identify potential security issues and threats against the NSM protesters.

In the initial phases of planning the NJ State Police (NJSP), Troop C, Region III, Office of State Governmental Security, began to collect information and intelligence on the NSM. This information would be used to ensure their event planning initiatives would provide a full scope of background information on the group in order to maximize the safety and security of the protesters and their potential adversaries.

[108] "Event Advisory, National Socialist Movement" (internal document, Regional Operations Intelligence Center, West Trenton, NJ, April 2011), 2.

As the Office of State Governmental Security began to plan for this event, it identified the need to include multiple agencies at the federal, state, and local level to support its efforts. Collaboration between other NJSP agencies including, Field Operations, Special Operations, Emergency Management, Office of Attorney General, and the NJ Regional Operations and Intelligence Center (ROIC), including the FBI, and the U.S. Dept. of Justice, along with the Dept. of Corrections, Mercer County Sheriffs Dept., Trenton Police Dept., Trenton Fire Dept., the American Red Cross, and Salvation Army.

Through a series of meetings members of the NJSP developed a descriptive operational plan with input from partner agencies. The NJSP were identified as the lead agency in charge and worked with other agency commanders in the collection of intelligence and information sharing. As planning progressed, the operations plan became more complex requiring agencies to identify the resources that they would use to support the event.

Using available resources through New Jersey's Fusion Center, the ROIC, intelligence products were developed and shared with planners. It was learned that the NSM membership was approximately 300 to 350 members nationwide with approximately 10 members living in New Jersey.[109] Research also revealed that the NSM is one of the largest "neo-Nazi" organizations in the United States. Initial reports suggested that the rally would attract between 1000 and 3000 counter protestors.[110] The counter protestors were believed to be from organized groups, such as the Anti-Racist Action (ARA), the New Black Panther Party, and One People's Project groups.[111] It was also learned that groups who had protested the NSM in other venues often used violence and caused civil unrest.[112] The tactics used by protesters were of concern to law enforcement as is was not an uncommon for them to use rocks, bottles, pepper spray, and

[109] "Event Advisory," 2.

[110] Ibid., 3.

[111] Ibid., 4.

[112] Ibid., 5.

feces or urine filled balloons as projectiles.[113] In 2005, 600 protesters engaged in arson, criminal mischief, aggravated assault, theft, and civil disorder during an NSM rally in Toledo, Ohio.[114]

2. Concept of Operations

Based on the type and scope of event, a concept of operations was developed to create an organized command and control structure to support all required activities. The organizational structure was developed using the ICS model and written so as to ensure span of control, resources, information sharing, and tactical operations would be adequately supported.

The concept of operations consisted of seven parts: pre-event, event, special operations group (SOG) operations, audio visual, evacuation planning, public information staging, and post event. Each of the program areas was briefly described in the concept of operations manual and the incident commanders, prior to the start of the first operational shift briefed all associated parties.

The pre-event phase of the operation addressed staging for NSM members, viewing for protestors, and the specific objectives required to ensure the groups would not have access to one another. Staging areas were also designated for counter protesters with identified ingress and egress routes to allow control of individual movements of all protesters and observers. Perimeter control was considered as well as control of all rooftop access for law enforcement observation. Other pre-event considerations included, the placement for medical, logistics, communications, command, the placement of signage, and hour of operations for the incident command post.

The event section described places and times of operation for designated first responders including, NJSP Field Operations, Technical Emergency and Mission Specialists (SWAT), law enforcement investigators, and the Dept. of Corrections

[113] "Event Advisory," 6.

[114] Ibid.

personnel. Also detailed is the planned route and arrival of NSM members who were transported to the site from another location previously determined by the Chief of Staff of the NSM and NJSP commanders.

Other portions of the concept of operations provided similar information relative to the specific assignment and personnel required to fulfill that mission. The concept of operations was inclusive of all necessary activities related to the event and potential consequences of the event scheduled for April 16, 2011. An organizational structure and assignment list was also developed to correlate specific assignments with personnel.

The organizational structure or table of organization developed for this event followed the basic principles of the ICS. At the incident command and staff level, two members of the NJSP were assigned as incident commanders qualifying as a "unified command." The core areas of the organization consisted of a planning, logistics, operations, and finance section. Some of those sections were further broken down into branches and groups. In total, more than 300 troopers and other first responders were detailed to this assignment.

To support the planning for this event, command staff members used the NJ ROIC for its capability of providing information and intelligence related to the NSM and those groups that might protest the rally. Products developed by the ROIC Analytical Element Unit, provided background information on the NSM, pre-rally organized engagements, and the predicted number of people and times counter protesters might arrive at the rally site. Based on similar meetings and rallies associated with the NSM, analysts were able to provide some understanding of what law enforcement might expect in terms of weapons and methods of violence or disruption protesters might take.

3. The Event/Operations

Although not included in the operations plan the day prior to the protest, NSM members gathered for a meeting in Pemberton Borough, New Jersey, which is approximately 25 minutes from Trenton, their pre-selected demonstration site. During the meeting, which took place in a local church, members of the ARA gathered around the meeting place and enticed several of the NSM into a confrontation. The altercation

between the two groups quickly manifested itself beyond the capabilities of the local police. Pemberton Borough Police requested assistance from the state police who responded in force. After securing the scene, the NSM members were escorted by law enforcement to another town where they planned to stay the night in a local hotel.
Several members of the NSM were injured during the altercation and were transported to the local hospital for treatment and members of the ARA were arrested.

Analysis of the plans for the NSM event did not disclose information or other planning objectives that focused on the NSM events the night prior to the event. Law enforcement officials at all levels of government appear to have been unaware of the potential for the events of April 15. The local police indicated that they were unaware of the NSM's plans to congregate in their jurisdiction and the documented plans for the event did not indicate awareness of the pre-event either.

However, open source media sites were well aware of the events the NSM planned and even encouraged others to demonstrate by "call blocking," as referred to on the San Francisco Bay area Independent Media Center website.[115] The website provided detailed information about the meeting and scheduled rally at the Trenton State House the following day. The Independent Media Center site provided detailed information regarding the April 15 NSM rally in Pemberton Borough, and it encouraged followers to show their distaste for the NSM by calling the hotel and other locations. Based on what is known from the plans associated with the event, it is difficult to determine if it could have been prevented. However, by questioning the planning process, we might learn more about the leaders' decision-making process while preparing for this event.

The planning efforts that led to the eventual operations associated with the NSM included the deployment of more than 500 NJ State Troopers and additional support from local, county, state, and federal agencies. The written plans were created as a strategy for

[115] "Phone Jam to Shut Down Nazi Conference in Bordentown!" April 15, 2011, San Francisco Bay Area Independent Media Center, http://www.indybay.org/newsitems/2011/04/15/18677261.php (accessed August 10, 2012).

all security and intelligence strategies associated with the event scheduled for April 16, 2011. However, an incident prior to the event did force an unexpected response from law enforcement, for which they were not prepared.

On April 15, 2011, NSM members gathered for a meeting in Pemberton Borough NJ, approximately 25 minutes from the NJ State House in Trenton City where the rally scheduled for April 16 would take place. During the meeting, members of the Anti-Racist-Action group (ARA) confronted NSM members and a conflict ensued. Local police were quickly outnumbered and were forced to rely on assistance from other local and NJSP resources. The conflict between the two groups resulted in six NSM members being transported to a local hospital for assault related injuries, as well as the arrest of two ARA members. NSM members had to be escorted and provided security from their meeting place to their pre-booked hotel.

On April 16, the NJ State Emergency Operations Center (SEOC) was activated to support the NSM operations. The SEOC was staffed with personnel from the NJ OEM. A command post was established in Trenton City where all command-related decisions were executed. Pre-defined plans or incident action plans were closely followed to ensure continuity in operations. All participating agency personnel were briefed by supervisors prior to being deployed to their assigned area of responsibility.

The plans for controlling group movements included barricaded roadways and complete control of ingress and egress to the city of Trenton. All interested protestors or visitors were directed to one area where they were permitted to park their vehicles. Observers were then directed through several different checkpoints where they were provided specific instructions that forbid the carrying of bags, backpacks, or signs. Once past the various security checkpoints, observers were directed to locations where they would be permitted to listen and respond to the rally.

As people started to gather in the city of Trenton to either observe or protest the NSM rally, intelligence was gathered from various law enforcement sources and shared with commanders. Initial intelligence reports indicated that members of the ARA and Black Panthers were within close proximity to the State House, and members of the Hells

Angels outlaw motorcycle gang were expected to arrive at some point during the rally. Other intelligence reports stated that members of the One People Project group (a counter protest group) were intending on meeting at the Trenton Battle Monument, which is adjacent to the State House Complex prior to gathering in the rally area.

At 10:00 a.m., the NJ OEM published and distributed the first of two situation reports related to the NSM event. The situation report, which was authored by NJ OEM staff from the SEOC, included information assembled through direct information feeds from the command post in Trenton.[116] The report included an overview or current synopsis, incidents, resources deployed, activities, and weather conditions.

At 12:00 p.m., NSM members boarded Department of Corrections Busses and were escorted by NJSP to the State House in Trenton. As information and intelligence was received from the field to the command post, commanders were able to reassign and adjust tactical plans associated with the event. The information learned by plainclothes law enforcement along with observations from air support (state police helicopters) and tactical deployments of NJSP Tactical Emergency and Mission Specialists (TEAMS) from roof top positions was helpful by allowing law enforcement to stop advances of protesting groups whose intentions were to gain access to NSM members. The tactics deployed during the event proved to quell the intentions of anti-protestors from disrupting the NSM rally.

By 2:35 p.m., the NSM rally had concluded; all NSM members boarded the state provided transportation and were escorted back to their personal transportation parked at a nearby hotel where they had spent the previous night. In total, two arrests for disorderly persons offenses were made during the course of the day's event.

[116] "Situation Report #1, NJ OEM" (internal report, New Jersey Office of Emergency Management, West Trenton, NJ, April 16, 2011).

B. STRATEGY FOR SAFE STREETS AND NEIGHBORHOODS AND THE PASSAIC RIVER VIOLENT CRIME REDUCTION INITIATIVE

1. Background

New Jersey Governor Jon Corzine developed and delivered his *Strategy for Safe Streets and Neighborhoods* in the fall of 2007.[117] The impetus behind the strategy was an increase in murder and weapons possession cases. The report noted that 43 percent of the state's municipalities recognize the presence of criminal gang activity and attribute much of the violent crime to gang members.[118] The strategy was designed to focus on three distinct areas to address violent crime: enforcement, prevention, and reentry. The focus was on six communities: Asbury Park, Camden City, Newark, Paterson, Trenton, and Vineland. The plan called for the development of a Prevention Policy Board for each community that would include members from state, local, and the private sector to assist in developing policy to ensure cities could "connect the dots" in terms of understanding the entire picture of risk and protective factors to address crime-related issues.

The first goal, enforcement, included several action items that focus on law enforcement capabilities to assess and develop new technology to assist with crime fighting initiatives. The first action within goal number one required a continued assessment of gang related crime and suggested that law enforcement coordinate investigations.[119] It creates a violent crime coordinator from the NJ Attorney General's Office and identifies the ROIC as the collection point for gang-related information and analysis of crimes involving the use of a firearm. Also listed, as an action item under the first goal is the acknowledgement and requirement of community involvement, suggesting that active participation of the community in identifying neighborhood concerns will lead to enhanced communication, which could prevent crime.[120]

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[117] Jon S. Corzine, *The State of New Jersey: A Strategy for Safe Streets and Neighborhoods* (West Trenton, NJ: State of New Jersey, 2007).

[118] Ibid., 5.

[119] Ibid., 7.

[120] Ibid., 12.

The second goal, prevention, includes an overall safe streets strategy. The first action focused on state agencies, suggesting that collectively they have dedicated 35.6 million dollars towards collaborative coordinated funding and implementation of preventative programs[121]. The action items under this goal created a prevention coordinator (appointed by the Attorney General) and a prevention-funding guide.

The third goal, reentry, focused on recidivism reduction. The actions related to this goal supported the creation of a Reentry Coordinating Council, a reentry "Demonstration Project," increased support for youth returning from juvenile justice institutions, and the relief of impediments for persons who establish rehabilitation.[122]

Finally, the responsibility of oversight and accountability was assigned to a newly created accountability structure, led by the Governor's Oversight Committee for Safe Streets and Neighborhoods.[123] The structure of the committee included state agency executive leaders, as well as members from the public sector, and co-chairs of the Statewide Association of the County Youth Service Commission. An additional layer of coordinating councils was established to ensure collaboration and coordination existed between agencies. The three councils, law enforcement, prevention, and reentry were tasked with oversight of implementation and evaluation of strategic goals.

Then, in early 2008, a spike of violent crime in an area of New Jersey that has become known as the Passaic River Corridor led law enforcement agencies to collaborate and identify appropriate measures to thwart criminal activity. Since that time, federal, state, and local agencies have coordinated plans to accomplish a number of initiatives. Some initiatives required human resources, and others required intelligence analysis and the development of technological solutions, allowing agencies to communicate and share information in that regional. All of this has the purpose of reducing crime, while creating a better quality of life for residents.

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[121] Corzine, *The State of New Jersey: A Strategy for Safe Streets*, 13.

[122] Ibid., 19.

[123] Ibid., 25.

Analysts were asked to study criminal data in individual communities to identify potential interdependencies between neighboring cities and towns. Through their analysis, they noted that the demographics and geography of the state contributed to cross-jurisdictional issues with crime.[124] New Jersey, the most densely populated state creates a unique opportunity for the criminal element. To further complicate issues, the robust and intricate network of interstate and state highways provided the ideal conditions for criminal offenders to conduct illegal activities in multiple locations throughout the region. Analysis showed a significant number of violent crimes were being committed along the Route 21 corridor on a regular basis.[125] The area included four suburban municipalities, 32 urban suburbs, and six urban centers. In that region, all but one of the 42 Passaic Corridor cities are more densely populated than the state as a whole. The high levels of poverty and unemployment in that area were also believed to be contributing factors to the high crime rates. Of the 42 municipalities, 26 acknowledge the presence of gangs in their communities.[126] Furthermore, the Route 21 Corridor region included only 16.9 percent of the state population but could account for 31.6 percent of the violent crime, including 43 percent of the state murders and non-negligible manslaughters, 34.5 percent of the robberies, and 47.3 percent of all vehicle thefts.[127] The high crime activity plaguing the area led to the creation of the Route 21 Corridor violent crime initiative.

2. The Initiative

In May of 2008, the New Jersey ROIC developed a concept paper entitled *The Passaic River Corridor Information Analysis and Exchange Program*.[128] The premise was to develop an information-sharing environment between municipal police agencies along the Passaic River corridor.[129] The impetus behind the initiative was the murder of

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[124] New Jersey Regional Operations Intelligence Center [NJ ROIC], *Concept Paper: Passaic River Corridor Information Analysis and Exchange Program* (West Trenton, NJ: NJ Regional Operations Intelligence Center, 2008).

[125] Ibid.

[126] Ibid., 1.

[127] Ibid.

[128] Ibid.

[129] Ibid., 2.

Paterson Police Officer Tyron Franklin, a 23-year-old rookie who was shot in a local restaurant while off duty. During the initial investigation, the leads in the murder of Franklin were quickly exhausted. Paterson Police Department officials believed the suspected shooter was not a resident of the city but could be a resident of a neighboring community. Eventually police learned the suspect was in fact a resident of Irvington, a city that connects with Paterson via Route 21.[130] The circumstances of this crime stimulated the Director of the Paterson Police Department, Mike Walker, to conduct an analysis of the municipalities along the Passaic River Corridor, which yielded some interesting findings. The research showed that a percentage of violent crime was taking place in and around those jurisdictions adjacent to Route 21, which connects numerous municipalities between Essex and Passaic counties.[131] Shortly after that time, law enforcement at the local and state level started the process of discussing potential information sharing opportunities to assist in quelling crime in that region.

Between 2008 and 2012, a number of meetings were held and plans developed to meet the objectives of this initiative. Some of the plans included technological initiatives that were to be supported through grant funding to assist in the information sharing process; others included inter-agency collaboration with operations leading to multiple arrests for weapons, controlled dangerous substances, warrant, and fugitive arrests.[132]

In 2009, the cities of Paterson, Passaic, Newark, along with the ROIC and the New Jersey Urban Area Security Initiative (UASI), joined to start a pilot that would enable sharing of crime statistics and other crime related information across jurisdictions.[133] More than 100 users in 43 jurisdictions across three counties along with the New Jersey State Police participated in the program.[134] Information sharing products

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[130] Jerry Demarco, "Elite Unit Crosses Borders to Hunt Violent Criminals," Cliffview Pilot, September 2011, http://cliffviewpilot.com/elite-unit-crosses-borders-to-hunt-violent-criminals/ (accessed November 18, 2012).

[131] NJ ROIC, *Concept Paper*, 2.

[132] New Jersey State Police, "Operation Fourth Down Tackles Violent Bloods Set in Paterson," New Jersey State Police, June 2011, http://www.njsp.org/news/pr062311.html (accessed November 18, 2012).

[133] Passaic County Prosecutor's Office, *Cross-Boundary Information Exchange Pilot Project* (Passaic County NJ, February 2010).

[134] Ibid.

focused primarily on shootings, robberies, burglaries, automobile, and organized retail theft.[135] The concept behind the pilot was to develop a robust technological solution capable of providing efficiencies, including analytics.

In June of 2011, the Passaic County Prosecutor's Office submitted a Bureau of Justice grant application requesting funding to support the information sharing platform and infrastructure needed to allow law enforcement agencies to receive and submit "real time" criminal case information. Recognizing the limitations of information sharing systems, the grant application focused on the development of a technical solution that would provide features and data sharing capabilities not available elsewhere. In September 2011, the U.S. Department of Justice (DOJ), through the DOJ's National Justice Information Sharing initiative, awarded Passaic County $270,084.00 to support a data sharing solution to assist the region.[136]

A New Jersey based company, Tetrus, proposed a solution based on a virtual platform. The application, Sleuth, was designed on a cloud concept using social networking technologies to provide law enforcement users with the ability to share "real-time" criminal statistics and other crime related information across geographical boundaries. The Sleuth suite of applications included: message board technology; an intelligent suggestion system to analyze subscriber messages or posts; a dashboard that displays the most current messages; and an easy to use mapping system.[137]

In the early months of 2012, a series of meetings began to take place with agencies specific to the Passaic River Corridor to develop operational strategies, supported with criminal intelligence, provided by analysts from the ROIC. The operations associated with this initiative included more robust intelligence, information sharing, coordination, and planning, than previous initiatives.

On February 21, 2012, members of the NJ Attorney General's Office, along with high-ranking members of the NJSP, took part in a briefing that defined the multi-agency

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[135] Passaic County Prosecutor's Office, *Cross-Boundary Information,* 3.

[136] Passaic County Prosecutor's Office, "Congressman Pascrell Announces $270,084 Federal Grant to the Passaic County Prosecutor's Office" (Passaic County, NJ: 2011).

[137] James Sheehan, "Tetrus" (internal letter sent to Route 21 corridor agencies, November 11, 2010.

support operations of the Route (Rt.) 21 Corridor Violent Crime Suppression Initiative.[138] It was determined that those municipalities along the Rt. 21 Corridor with the highest crime rates be included in the initiative. The goal of the operation was to deploy limited police resources through a collected and controlled tactical plan to "surgically" target violent crime areas or targets based on shared intelligence. Leveraging the New Jersey ROIC for its analytical capabilities, law enforcement agencies provided crime data and in return received intelligence products related to criminal activity. The focus of the analytics for the ROIC analysts focused primarily on violent crime.

In order to understand and interpret the criminal environment, the ROIC developed an Intelligence Collection Cell (ICC).[139] The aim was to gather information necessary to identify violent offenders and their associates, geographical areas controlled by organized groups or gangs, locations that support violent crime, suppliers of drugs or weapons, identity of recidivist violent offenders, and the identification of patterns or trends related to criminal activity.[140] The operations required to collect data included: collaboration with local and county law enforcement agencies, the deployment of mobile automated license plate readers, surveillance operations, interviews and debriefs of arrested individuals, and the coordination with investigators on active criminal cases. To ensure intelligence collection objectives were met, an intelligence liaison from each participating agency was identified, trained, and provided the appropriate capabilities to connect with the ROIC ICC.

In describing the operational environment, three conceptual areas were identified that demonstrated how strategies and tactics would drive operations and that were based on the conditions of the criminal environment. Figure 1 illustrates that conceptual model.[141]

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[138] Regional Operations Intelligence Center, "Route 21 Corridor Violent Crime Suppression Initiative" (briefing at New Jersey State Division Headquarters, West Trenton, NJ. February 21, 2012).

[139] New Jersey State Police, "NJ ROIC Intelligence Collection Cell" (internal document, West Trenton, NJ: NJ Regional Operations and Intelligence Center, February 2012).

[140] Ibid.

[141] Jerry Ratcliffe, "The Effectiveness of Police Intelligence Management: A New Zealand Case Study," *Police Practice and Research* 6, no. 5 (December 2005): 439, doi: 10.1080/15614260500433038.

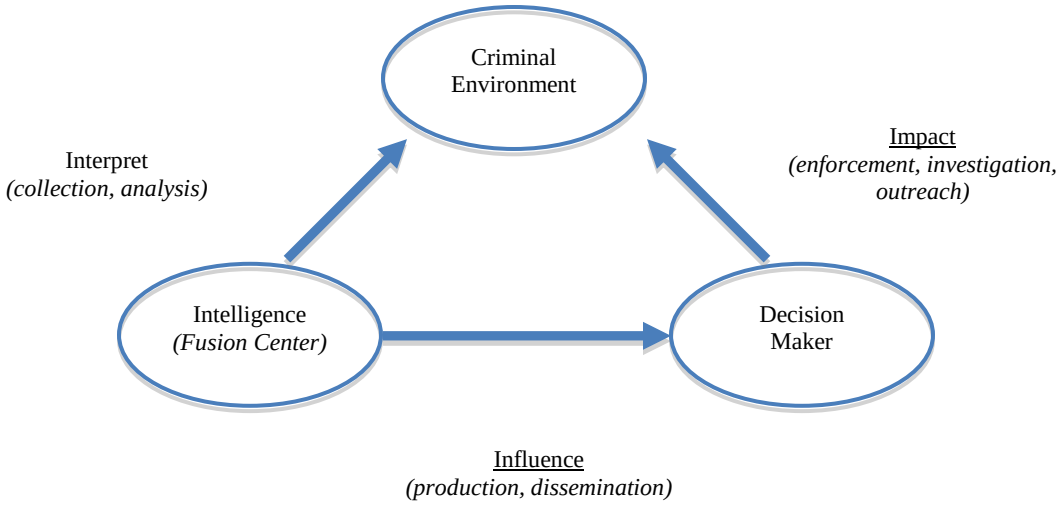

Figure 1. 3-i Model [142]

In March of 2012, the NJ ROIC developed a unified collection plan to provide a strategic framework, which was needed to align intelligence and operational personnel under a common goal that would support the Route 21 Corridor initiative.[143] The plan was for law enforcement agencies to develop intelligence that would drive operational objectives focused on violent crime. Using data from the Unified Crime Report (UCR) and the NJ POP helped to shape the scope of the plan. The major components of the plan included the following: enforcement aim objectives, investigative aim objectives, intelligence collection plan, and the intelligence collection cell.

The premise of each objective was as follows: the enforcement aim and objectives focused on target areas prone to violent criminal activity. This objective was realized through the use of high visibility patrols, surge deployments in high crime areas, and the exchange of information and intelligence that supports investigative activity. Investigative aim objectives focused on the identity and investigation of serial offenders and associates of violent crime. This objective was realized by identifying offenders and their criminal associates, the establishment of serial offender's modus operandi, the seizure of assets of crime to prevent further criminality, and the collection of evidence to

[142] Ratcliffe, "The Effectiveness of Police Intelligence Management."

[143] New Jersey State Police, "NJ ROIC Intelligence Collection Cell."

support the prosecution of offenders. The intelligence collection plan objective was to identify offenders, areas of criminal activity, crime trends, tactics and procedures that support violent crime, suppliers of drugs and weapons, funding streams assisting criminal activity, and the indication of criminal conspiracies among offenders. In order to meet these objectives, the plan required the use of an intelligence collection cell.

The intelligence cell included a compliment of personnel from the Paterson Police Department, Essex County Prosecutor's Office, and the NJ ROIC. To accomplish their mission, intelligence was collected through the use of technology, including the use of automated license plate readers (ALPR), ballistics evidence from crime scenes and confiscated weapons, narcotic stamps, arrest data debriefing forms from arrested individuals, and the exchange of information related to cases in the region. From the data and crime related information, intelligence products were produced.

Preliminary intelligence was provided to NJ State Police Commanders and Paterson Police Department officials. Based on the analysis, it was recommended that initial operations engage a four-block area, focus on violent crime, and quality of life operations.[144]

In May of 2012, the NJ ROIC Intelligence and Analysis Unit started the process of establishing fusion liaison officers for each of the 17 municipalities in the Route 21 Corridor region. Individuals were identified as fusion liaison officers to the NJ ROIC for each agency. Liaison officers were responsible for the dissemination of information and intelligence as well as serving as the point of contact for police executives on intelligence and information matters. Meetings between the liaison officers and police executives helped to establish a common operating picture of each agencies criminal environment, while also providing an opportunity for police executives to define their intelligence needs to support the Route 21 Corridor Initiative. With the intelligence collection cell and fusion center liaison officers in place, the NJ ROIC Intelligence and Analysis Unit created analytics to support law enforcement objectives.

[144] New Jersey State Police, "NJ ROIC Intelligence Collection Cell."

Initial operations were conducted at various times over a 28-day cycle. During the first 28 days, the focus or area of operation was in the city of Paterson. The Paterson Police Department conducted regular patrols and crime fighting programs using the analysis provided by the NJ ROIC. On June 21, 2012, law enforcement executives from the Route 21 Corridor gathered for their first Corr-Stat Meeting. The meeting established a collaborative mechanism for evaluating the impact of intelligence, investigative, and enforcement activities had on the region. The meeting included a total of 59 stakeholders, representing 26 federal, state, county, and local law enforcement agencies. Leaders discussed the current intelligence picture and anti-crime strategies in Paterson and Newark cities. Emerging crime issues were also addressed and solutions presented to address them.

Staff from the NJ ROIC provided a description of the most current intelligence picture. The analysis was geared toward violent crime, burglary and robbery patterns, heroin and firearms recovery, trafficking patterns, and violent recidivist offenders. It was stressed that continued analysis required sustained participation and support from all agencies in the Route 21 Corridor region. The keystone ingredients in the crime suppression initiative were identified as agency collaboration and information sharing. To ensure continued support, fusion liaison officers (FLOs) assigned to each agency were asked sustain the collection of data and intelligence.

One of the successful operational tactics used to support the initiative was the mobile deployment initiative in Paterson and Newark cities. The initiative included a collection of law enforcement agencies that acted as force multipliers through saturation details. Their focus was on pre-determined areas within a community based on threat assessment and trend analysis, which was provided through intelligence reports. It was noted that the cooperation and collaboration between agencies resulted in over 225 arrests, including the seizure of 45 firearms in a one-month period.[145] Other tactics, including prisoner debriefings, provided valuable information that led to the identification of criminal activity, criminal suspects, and the associates of criminal types.

[145] New Jersey State Police, "Operation Fourth Down."

The final agenda item included discussion regarding items of mutual interest. Leaders discussed various crime trends and issues that impacted the region. Specifically, they addressed burglaries and potential efforts to solve and prevent them. Also used in the initiative were investigative techniques, including identifying persons of interest, their associates, and the use of ALPR technology to track criminal suspects and their routes of travel. Other recommendations included: the creation of a data-base for pawn shops; the collection of residential, automobile, and commercial burglary information; the creation of a standard arrest debriefing report; analysis of cargo theft in the region; and a process for reporting alerts, warnings, and BOLOs to agencies within the region.

The efforts associated with the Route 21 Corridor crime suppression initiative have slowly developed into a strategy to leverage the collection, analysis, and distribution of intelligence products that support law enforcement leaders in their role to reduce crime.

With the description provided of each of the case studies in this chapter, Chapter V focuses on the analysis of each case through the "lens" or framework developed from the literature review and then thoroughly described in the Research Design and Analysis section in Chapter II.

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V. ANALYSIS

A. INTRODUCTION

The analysis in this chapter uses the hierarchical and ecosystem framework developed through the literature review, which was then presented in Chapter II. The framework used to analyze the cases through the hierarchical lens examine characteristics including organizational structures and their subsystems, command and control authorities, planning, information flows, organizational culture and behavior, SOPs, policy, and governance. The frameworks used to examine the cases through the ecosystem lens include strategic planning, cooperation, collaboration, interdependencies, information flows, diversity, emergence, and networks. Through both lenses, the analysis examines the relationship and impact framework characteristics have on agency decision makers.

B. NATIONAL SOCIALIST MOVEMENT RALLY

1. Hierarchical Analysis

In Dante Martinelli's research, *Systems Hierarchies and Management*, he describes through levels of classification the varying system complexities that exist within an organization[146]. The understanding that organizations consist of interconnecting hierarchically arranged decision-making units provides a foundation for defining the organizations level of complexity and therefore the manager or decision makers expected reaction to stimuli presented to him or her.[147]

In examining the NSM case study, the analysis starts with a description of the organizational structure of hierarchical government agencies involved with the NSM rally. In the NSM case, participating organizations, operated under organizational structures with varying layers of specialization and command. Under this construct, the effects of individuals and their specialized units are controlled so that they can achieve

[146] Martinelli, "Systems Hierarchies and Management."

[147] Ibid., 70.

the goals of the organization.[148] The model not only includes layers of bureaucracy but also subdivided levels of specialization. Most of the specialized functions were situated under divisions or branches.

As author Graham Allison noted in his book, *Essence of Decision: The Cuban Missile Crisis*, government behavior consists less of deliberate choices and more as outputs, which are congruent with standard behavior.[149] Therefore, the decisions made in the initial planning for the NSM rally were predictable, as leaders used specific pre-determined methods and resources to initiate action.

In planning for the NSM, the lead agency, the NJSP, used the hierarchical incident command model for command and control and all other operational aspects of the event. The incident command system provided a temporary organizational structure that was similar to the structure of most law enforcement entities in that it was hierarchical and subdivided into specialized units. This structure included layers of bureaucracy, specialized functions, and a top-down system where command initiated guidance and control over operations. Where multiple agencies contributed to the event, the NJSP assumed command. The ICS structure and guiding principles were used for the event. In a quasi-military setting, similar to a law enforcement agency, the structure provides leaders with clarity as to who is doing what work and for what specific purpose. The structure provides a high degree of control by providing personnel with specific roles and objectives that focus on commander's intent.

With more than 500 state troopers and many other law enforcement personnel in support of the event, the ICS provided leaders with command and control necessary to ensure incident action objectives were met. Layers of bureaucracy created supervisory to subordinate ratios according to ICS standards further ensuring strict accountability.

Academics who have studied organizations have demonstrated that the behavior of many individuals is influenced by the controlling purposes of the organizations to

[148] Alberts and Hayes, *Power to the Edge*, 41.

[149] Allison and Zelikow, *Essence of Decision*, 143.

which they belong.[150] Government agencies are not driven by a bottom line the same way business is in the private sector; however, customers (citizens) demand that agencies operate efficiently and with clear objectives and under strict direction from management. Therefore, law enforcement agencies develop and look for the ideal solutions to ensure their decisions meet public expectations. The ICS structure provided such efficiencies. The planning design focus was well understood, roles and responsibilities well defined, and operations controlled in strict adherence with written policy.

Control and efficiencies are also created by SOPs and agency strategies. The specialized functions of individualized units create mission specific capabilities with narrowly focused responsibilities. Under this construct, patrol, investigations, and administrative functions or operations are separate from one another. The silos created allow command to quickly identify and allocate resources in a way not practical under a linear agency model. In the NSM case study, specific specialized units were easily plugged into various roles in the ICS table of organization.

The organized structure of the event made it possible to create and ensure communications followed prescribed plans. During the event, radio and written plans were shared following regular SOPs and situational awareness protocols.

The analysis also examined how organizational culture influenced the outcome of the NSM event. As described by Graham Allison, "organizations create purposes and routines that arise from within, and that are tied to what James March has called 'the concept of identity', where the identity is a conception of self-organized rules for matching actions to situations."[151] Through these rules organizational culture is defined. It is further suggested that this approach to understanding organizational behavior sees organizations as more autonomous, which allows them to define and respond to tasks in a manner that conforms to the organizations capabilities.[152]

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[150] Allison and Zelikow, *Essence of Decision*, 147.

[151] Ibid., 53.

[152] Ibid., 151.

In the NSM event, the culture of the law enforcement entity in charge, the NJSP, contributed to the overall success of the event. The adherence to standard operating procedures, reliance on discipline, command and control, obedience to prescribed rules and regulations, and uniformity are recognized as part of the culture and ultimate successful outcome in preserving public safety during the event.

The hierarchical analysis of the NSM event demonstrates the advantage of the top down, command and control structure of the ICS. During the course of the event, leadership, shaped through organizational culture, used specialized units to their advantage in supporting specific roles and assuming certain responsibilities (e.g., specialized units for crowd control and air support. In the next section, the NSM will once again be analyzed through the ecosystem lens.

2. Ecosystem Analysis

Accomplishments of the natural world are often the products of the collective interactions of many connected players, where networks, energy flows, interdependencies, and interconnectedness create a balance in natural ecosystems.[153] In this section, the NSM event is analyzed through the ecosystem lens developed through this research using the framework that includes, strategic planning, collaboration, interdependencies, information flows, diversity emergence, and networks.

As the NJSP Office of State Governmental Security began to plan for this event, it identified the need to include multiple agencies at the federal, state, and local levels to support its efforts. Collaboration took place between other NJSP agencies including Field Operations, Special Operations, Emergency Management, Office of Attorney General and the NJ ROIC. Collaboration also included the FBI, and the U.S. Department of Justice, along with the Department of Corrections, Mercer County Sheriff's Office, Trenton Police Department, Trenton Fire Department, the American Red Cross, and Salvation Army.

[153] Iansiti, The Keystone Advantage, 19.

Where the emergence of new ideas is usually not considered a process that can be planned, collaboration and planning initiatives between specialized subsets of organizations and other supporting agencies can sometimes result in novel ideas. In preparation for the NSM, the agencies and subsets of those agencies that gathered to write the operations plan to support the event generated event-planning ideas through the diverse make-up and expertise of those involved.

With the authorization of HSPD-5 and development of the NIMS, subsequent principles were developed to enable effective, efficient, collaboration through the ICS. The use of the ICS, as analyzed through the ecosystem lens demonstrates its effectiveness by interconnecting and creating collaborative efforts between multiple agencies. During the NSM, a unified command was established using two NJSP commanding officers. Diversity was also created by incorporating those agencies responsible for certain responsibilities required for a model ICS plan (e.g., logistics, finance, communications, and a public information officer).

The leadership responsible for the NSM plans also leveraged the capabilities of the NJ ROIC. The NJ ROIC was asked to develop analysis products on the NSM that would assist in writing the operations plans. A thorough analysis of the group, their background (ideology), tactics, and potential threat to public safety was developed as requested. The NJ ROIC also acted as the conduit for information sharing during the course of the event, sending regular situational awareness reports to law enforcement and other supporting agencies.

Through the ecosystem lens, the analysis identified how collaboration, diversity, and interdependencies between agencies attributed to the planning and operations of the event. It further demonstrated how group diversity could lead to the emergence of ideas. Flows of information were described through written plans and information provided through the NJ ROIC. In the next section, analysis of the Route 21 Corridor initiative is conducted using both the hierarchical and ecosystem lenses.

C. ROUTE 21 CORRIDOR REGIONAL CRIME SUPPRESSION INITIATIVE

1. Hierarchical Analysis

The hierarchical analysis of the Route 21 Corridor initiative starts with a description of key agencies and their organizational structure. Examination of the Paterson Police Department table of organization depicts the agency as having a typical hierarchy, similar to that of other government led law enforcement agencies. The Paterson Police Department consists of approximately 600 members who are led by a police director and chief of police. Under the commander's control are four sections, each with defined roles and responsibilities. Similarly, the New Jersey Division of State Police has a comparable but much larger structure as it employs more than 3,500 enlisted and civilian members. The model not only includes layers of bureaucracy but also subdivided levels of specialization. Most of the specialized functions are situated under divisions or branches. The model of each law enforcement entity is designed in a typical top down command and control bureaucracy.

The structure of law enforcement agencies creates a high level of control and authority for leaders. The design further creates efficiencies by allowing for the command and control over large numbers of people assigned to complete various tasks. Therefore, it comes as no surprise that the Corr-Stat meetings, planning objectives, and operational decisions are made exclusively by executive leaders from each of the participating agencies. As demonstrated in the Route 21 Corridor initiative, executive leaders drive the objectives and missions associated with the event.

The analysis demonstrated that leaders at the all levels of government often make decisions and drive operations for smaller bureaucracies to provide solutions to problems. In Paterson, New Jersey, a rise in violent crime and shootings was in part attributed to a lack of police enforcement, which resulted from the layoffs of 125 police officers. The combination of layoffs with increased crime attracted media attention to the city of Paterson and the surrounding region. Consistent with the behavior of the hierarchical model, a top-down approach to addressing a noted increase in crime was initiated. Leadership from the NJSP, with encouragement from NJ's Attorney General's Office,

met with law enforcement officials to address and develop a crime fighting strategy. It was those officials who determined the role law enforcement would embrace and operations that would focus on violent crime.

As previously described, a characteristic of the hierarchical organization includes a top-down approach to problem solving, providing leaders the luxury of "fitting" capabilities together to create strategies. This approach can result in developing less than complex solutions to address complex situations by focusing on efficiencies and creating strategies based on the capabilities of agency specific resources limiting the leaders' creativity. The analysis revealed that this was the case in New Jersey, as demonstrated through Governor Corzine's *Strategy for Safe Streets and Neighborhoods*.[154]

The strategy called for the development of a prevention policy board, violent crime coordinator, reentry coordinating council, and a governor's oversight committee. Each of these functions was created at the state level where it added additional layers of bureaucracy within state government. The structure created authorities through a hierarchical command and control system that put state agency leaders in decision-making positions to ensure objectives were met in the most efficient manner.

As agencies adopted the strategy, they assessed their capabilities to determine if they could meet plan objectives. Following the hierarchical model, the crime strategy evolved into law enforcement and non-law enforcement centric missions working independently of one another.

The goals and objectives of the *Strategy for Safe Streets and Neighborhoods*[155] strategy follow both the hierarchical model of strategic planning outlined by Mintzberg et al., and Graham Allison's analysis of organizational behavior.[156] In his research, Graham Allison describes how fixed standards, operating procedures, and capabilities frame organizations;[157] we see how the decision-making process of leaders is influenced.

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[154] Corzine, *The State of New Jersey, A Strategy for Safe Streets*.

[155] Ibid.

[156] Mintzberg, Ahlstrand, and Lampel, *Strategy Safari*; Allison and Zelikow, *Essence of Decision*.

[157] Ibid., 145.

The behavior of the organization can be explained in terms of organizational purposes and practices common to the members of the organization. The leaders of the organizations focus on their agency capabilities to solve problems, which forces the organization into a preset solution to problem solving. This model follows what Mintzberg et al., would refer to as decomposition, where strategies are broken down into sub strategies for successful implementation.[158] This process gives rise to a whole set of hierarchies, each with its own time perspectives: short, medium, and long term.[159] Analysis of the Route 21 Corridor initiative demonstrates this philosophy. As agencies were pulled into the strategy, they focused on their capabilities to solve problems while also creating objectives or other strategies within their own departments.

The Route 21 Corridor case study also demonstrates how culture can drive organization behavior. The leaders of the law enforcement agencies involved in the crime suppression initiative focused their efforts and attention to law enforcement activities. This would appear to be a logical approach since each agency followed specific standard operating procedures that guided its mission and directed the choices leaders made in executing strategies. The actions of the varying agencies represented in these cases led to the conclusion that the outcome of the hierarchal model and agency culture tends to lead organizations and their leaders to focus on internal integration, where members develop a collective identity and learn to work together with efficiency. The culture can be further described as a bureaucratic culture, which has an internal focus and consistency[160] orientation for a stable environment. This culture, described by Richard Daft, supports a methodical approach to doing business; its success is in its efficient design[161].

Through the hierarchical analysis of the Route 21 Corridor initiative, several characteristics associated with hierarchical organizations and their influence on decision makers were identified. The case started with an analysis of the *Strategy for Safe Streets and Neighborhoods*, identifying the hierarchical role and top down, command and control

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[158] Mintzberg, Ahlstrand, and Lampel, *Strategy Safari*.

[159] Ibid., 53.

[160] Daft, *Organization Theory and Design*, 325.

[161] Ibid.

culture of government agencies.[162] The strategy empowered state agency leaders to oversee committees, which, in turn, developed problem-solving objectives. Similar observations were also noted in the roles of executive leaders who participated in the Route 21 Corridor initiative, most of whom were law enforcement executives. The initiative demonstrated how government agencies and their leaders often limit their focus on problem solving using only those capabilities most familiar and available to them. Finally, the analysis looks at how organizational logic and culture influences decision makers. As described by Graham Allison, "Organizations create purposes and routines that arise from within, and that are tied to the concept of identity, where the identity is a conception of self-organized rules for matching actions to situations."[163]

2. Ecosystem Analysis

New Jersey Governor Jon Corzine developed and delivered his *Strategy for Safe Streets and Neighborhoods* in the fall of 2007.[164] The impetus behind the strategy was an increase in murder and weapons possession cases. The strategy focused on, violent crime enforcement, prevention, and reentry. The plan called for the development of a Prevention Policy Board for each community that would include members from state, local, and the private sector to assist in developing policy to ensure cities could "connect the dots" in terms of understanding the entire picture of risk and protective factors to address crime-related issues.[165] Implementation of the strategy resulted in the creation of a Prevention Policy Board and Municipal Advisory Board and Municipal Advisory Council for each of six urban areas initially targeted for implementation. Their primary focus was to serve the role of designated youth planners for each city. The plan was written with the concept of creating collaboration and including feedback from constituents. The creation of the boards would also permit the development of networks and connectedness between agencies.

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[162] Corzine, *The State of New Jersey, A Strategy for Safe Streets*.

[163] Allison and Zelikow, *Essence of Decision*, 53.

[164] Corzine, *The State of New Jersey, A Strategy for Safe Streets*.

[165] Ibid.

The first goal, enforcement, focused on law enforcement capabilities including an assessment to develop new technology that would assist with crime fighting initiatives and an assessment of gang related crime that recommended that law enforcement coordinate criminal investigations through an assigned violent crime coordinator from the NJ Attorney General's Office. The plan also identified the ROIC as the collection point for gang related information and analysis of crimes involving the use of a firearm. Finally, listed as action item under this goal was the acknowledgement and requirement of community involvement, suggesting that active participation of the community in identifying neighborhood concerns will lead to enhanced communication, which could prevent crime.[166]

The second goal, prevention described those efforts that would prevent crime. The strategy describes the state's dedication of 35.6 million dollars towards collaborative coordinated funding and implementation of preventative programs.[167] The action items under this goal also identify a prevention coordinator (appointed by the Attorney General) and a prevention-funding guide.

The third goal, reentry focused on recidivism reduction. The actions related to this goal supported the creation of a reentry coordinating council, a reentry "demonstration project," increased support for youth returning from juvenile justice institutions, and the relief of impediments for persons who establish rehabilitation.[168]

Finally, the responsibility of oversight and accountability was assigned to a newly created accountability structure led by the Governor's Oversight Committee for Safe Streets and Neighborhoods.[169] The structure of the committee included state agency executive leaders, four members from the public sector, and co-chairs of the Statewide Association of the County Youth Service Commission. An additional layer of coordinating councils was established to ensure collaboration and coordination existed

[166] Corzine, *The State of New Jersey, A Strategy for Safe Streets*, 12.

[167] Ibid., 2.

[168] Ibid., 19.

[169] Ibid., 25.

between agencies and that goals would be met. The three councils, law enforcement, prevention, and reentry, were tasked with oversight of implementation and evaluation of strategic goals.

The strategy described how 35.6 million dollars was allocated to 10 state agencies towards the collaborative, coordinated, and implementation of prevention programs.[170] The 10 agencies included the Department of Child and Families; Department of Human Services; Department of Health and Senior Services; Department of Transportation; Department of Community Affairs; Department of Agriculture; Department of Environmental Protection; Department of Corrections; Department of Military and Veterans Affairs; Department of Education, New Jersey State Police; Motor Vehicle Commission; and the Governor's Council on Drugs and Alcohol. The plan demonstrates how collaboration, diversity, and interdependencies can be developed between government agencies through strategic planning.

The *Strategy for Safe Streets and Neighborhoods* incorporated several of the characteristics identified in the ecosystem framework.[171] The plan called for an assessment of current technologies that could potentially be enhanced to support information sharing and feedback loops that in turn would enhance collaboration and ultimately lead to success in crime fighting and prevention programs. The plan also created a violent crime and crime prevention coordinator who could develop increased levels of connectivity between participating agencies by identifying and exploiting interdependencies. By establishing an oversight committee, the plan created possibilities for network opportunities between agency leaders and the public. Furthermore, the diversity of participating agencies identified in the plan allowed for opportunities to create and solve problems with novel ideas.

The release of the strategic plan led other government agencies at the county level to use the plan as an opportunity to develop county level crime strategy plans. County prosecutors and law enforcement entities developed individual plans and subsequently

[170] Corzine, *The State of New Jersey, A Strategy for Safe Streets*, 14.

[171] Ibid.

initiated county operations. The Morris County Prosecutors Office, in turn, developed and posted on their website a strategy outlining its adoption of the state strategy.

Although there was no identified objective in the Safe Streets and Neighborhood strategy to initiate the Route 21 Corridor initiative there is some connection to that the initiative, which emerged more than two years after the release of the strategy did have some connectivity to the strategy.

The strategy of the Route 21 Corridor can best be described as a joint effort of local, state, and federal officials who have collaborated on crime fighting strategies. The developments in the Route 21 Corridor were attributed to an increase of crime during the year 2008, which led to the development of a strategy through the collaborative efforts of what became the "Corr-Stat," which is a meeting opportunity where local, county, state, and federal partners shared information and strategies for crime fighting. The environment included almost 20 municipalities. Discussions led to learning, which subsequently lent itself to the establishment of a strategy that created an information sharing environment in that region, one that led to the analysis of crime and criminals that supported law enforcement activities. The strategy, not formally written, emerged through the collaborative efforts of law enforcement officials. The emergence of this strategy came as a result of meetings where the sharing of information, crime data, and lessons learned through enforcement efforts made up the agenda. As the initiative grew, leaders recognized the need for a more robust information-sharing environment.

Funding through a federal grant was identified to support and bring the concept of an information-sharing environment to fruition. The grant supported the design and implementation of a software solution where law enforcement would be able to share "real-time" crime data and other law enforcement information seamlessly across jurisdictions.

The ecosystem analysis of the Route 21 Corridor crime suppression initiative identified all of the characteristics of the ecosystem framework. Examples of planning, collaboration, interdependencies, information flow, diversity, emergence, and networks were present; some exhibited greater influence on organizations and their decision

makers then others. The state's strategic plan included objectives that would initiate collaboration between local, county, and state agencies, which, in turn, would create interdependencies. Identifying the NJ ROIC as the central point for information collection, analysis, and sharing also created information flows. Finally, diversity was established by creating committees that included public and private officials from various levels of government with various levels of expertise.

In the following chapter, Chapter VI, the findings of this research are presented along with the application of both hierarchical and ecosystem characteristics presented through a model where the coalescence of both models are presented through an actual case. The chapter also includes a presentation of recommendations and a conclusion section.

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VI. FINDINGS, APPLICATION, RECOMMENDATIONS, AND CONCLUSION

A. FINDINGS

The research was conducted with the premise that prevention strategies for complex manmade threats to our nation require collaboration and knowledge sharing among government agencies in order to enhance prevention, preparedness, response, and recovery efforts; a dictum that resulted in the creation of the "homeland security" environment. This environment includes many individual hierarchal agencies, where leaders perform in a non-linear manner as they attempt to connect, share information, and collaborate in a rugged environment that calls for characteristics closely mirroring those of a complex adaptive system.

This research therefore asked, "What can be learned through a comparative analysis of the New Jersey homeland security environment through both a hierarchical and ecosystem lens and what influence do those models have on decision makers?" Through the analysis the research also set out to answer the following second tier of questions:

1. What are the prominent links that connect government agency leaders within the New Jersey State homeland security environment?
2. What element, processes, laws, and or strategies, direct decision makers in their homeland security mission?
3. How does an ecosystem perspective inform the design of future fusion center knowledge sharing and collaboration initiatives within the New Jersey state homeland security environment?

The analysis was conducted by first creating two sets of frameworks or lenses from the literature review. Case studies, which represented examples of complex events that fell within the parameter of New Jersey's homeland security environment, were described and then analyzed through those lenses.

The analysis of the case studies through the hierarchical lens demonstrated how command and control, efficiencies, specialization, SOPs, and organizational culture can impact decision makers and lead to the successful planning and operations associated with a pre-planned event. The NSM event was planned using the advantages of the hierarchical organizational characteristics which ensured clarity in direction, command, and control. The many layers of bureaucracy, specialization, and management allowed commanding officers to easily assign roles and responsibilities to line officers and identify those with special roles (canine, swat, etc.) to fulfill mission specific assignments.

In both cases, it was apparent that organizations demonstrate behavior where individuals are influenced by the controlling purposes of the organization to which they belong.[172] In the NSM and the Route 21 Corridor initiative, government agencies relied on agency culture, SOPs, and internal resources to create efficiencies.

Strategic planning was also identified as a critical piece within the analysis. In the NSM, event planning followed the ICS proving the model provided appropriate levels of command, control, and management. The planning model used by the Corzine administration for the Safe Streets and Neighborhoods strategic plan followed the traditional planning school model where the mission, vision, goals, and objectives were developed and controlled by executive leaders at the highest levels of government. Where the plan called for collaboration, interdependencies, and a whole of community approach to address issues at the local level, little documentation was available to demonstrate how the plan was implemented at the local level.

The framework for the ecosystem lens included strategic planning, collaboration, interdependencies, information flows, diversity, emergence, and networks. The analysis discovered that collaborative properties existed throughout both cases. As one might expect, large complex events require the input, cooperation, and resources of various agencies. The planning model of the ICS, and the Safe Streets and Neighborhoods plan both resulted in agency collaboration and information sharing.

[172] Allison and Zelikow, *Essence of Decision*, 147.

Information sharing was also a critical characteristic in both cases. The NJ ROIC was identified in both cases, as the focal point for information collection, analysis, and sharing. The recognition of the NJ ROIC as the primary point of information sharing in New Jersey allowed leaders of the Route 21 Corridor initiative to accomplish intelligence led policing objectives that would not have been possible otherwise.

The analysis demonstrated how plans could easily create diversity in the ecosystem environment by bringing agencies together that would not normally be considered as having a role in a homeland security initiative. The NJ ROIC, as described in the New Jersey homeland security environment, incorporates local, state, and federal partners in its day-to-day operations, which creates connectedness and collaboration. This dynamic allows for the introduction of varying opinions when addressing complex issues.

The findings from the research and analysis exposed some of the many characteristics of the hierarchical and ecosystem analysis, and how those characteristics can influence agencies and their leaders. In the following section, the lessons learned from this research are outlined through the experience of an actual event that created opportunities for the NJ ROIC to integrate both ecosystem and hierarchal model characteristics to meet the demands of their customers.

B. APPLICATION

On October 26, 2012 the NJ ROIC elevated its operational status to a level two in preparation for tropical cyclone, "Hurricane Sandy," which at that time was bearing down on New Jersey's coastline. By October 29, 2012, the state's governor, Chris Christie had declared a state of emergency, and by 8:00 p.m., Hurricane Sandy made land fall in the general area of Atlantic City. This, the most severe storm to ever impact the state, passed through the region leaving a devastating trail of ruin to the environment, entire communities, and much of the state's public and private infrastructure. In the aftermath, the NJ ROIC would not only continue its role in support of local, state, and federal government agencies but would also embrace new challenges in support of the response and recovery missions that followed.

The models described in the research include frameworks that incorporate strategic planning, cooperation, collaboration, interdependencies; information flows, diversity, emergence, command and control, SOPs, and networks. Although the NJ ROIC organizationally fits into a hierarchy within state government, it offers the greatest capacity to adapt, share information and knowledge, offer opportunity for collaboration, embrace diversity, and foster emerging trends and solutions to complex problems. The environment of a fusion center is prime for the application of both models described throughout this body of work. What follows in this section will be participant observations of the five mission objectives that emerged at the NJ ROIC during the disaster management phases of Hurricane Sandy. These five mission objectives not only underscore the value of coalescing the two disparate models, but they provide a future roadmap for homeland security development.

1. Enhanced Information Sharing—Dissemination of Disaster Information

According to disaster emergency operations plans, government agencies at all levels have a prescript plan they are expected to activate in order to coordinate response and recovery efforts during and in the aftermath of a disaster. The NJ ROIC's primary mission under those conditions is to act as the information sharing point for the state. Primarily, the role is to disseminate situation, weather, and traffic reports to its broad spectrum of customers. Following the SOPs and policies, which are characteristic of the hierarchical model, the NJ ROIC accomplished this task; however, the complexity and magnitude of the event placed an even greater demand for information sharing, leading the NJ ROIC to assume non-traditional roles in support of the event. With local and county offices of emergency management overwhelmed with requests for resources in response to the disaster, leaders were unable to provide a complete description of their operating environment. Through the NJ ROIC's outreach program and partnership with the All Hazards Consortium and data provider Hughes Network Systems, the NJ ROIC was able to provide the private sector with information on the most current status of fuel, food, hotel, and pharmacy locations and levels of operation. Messages were sent daily that assisted the private sector by providing this awareness.

2. Enhanced Information Sharing—Gathering of Disaster Related Information

Using the established law enforcement network created by the NJ ROIC with the Monmouth and Ocean County Prosecutors' Offices and the chiefs of police (in those areas most severely impacted by Hurricane Sandy), the NJ ROIC Fusion Liaison Intelligence and Training Unit, along with the Intelligence and Analysis Unit, began the process of developing a reporting mechanism that would create an information flow of data related to criminal activity in the affected areas. Analysts also produced a collection reporting template for the 300 NJ State Troopers and 290 other out of state troopers deployed from various parts of the country in support of the safety and security missions associated with the disaster. The template was used to capture criminal behavior including, arrests, suspicious activity, and signs of crime (e.g., signs of forced entry). Later, troopers assigned to the NJ ROIC were detailed to each county to work directly with each prosecutor's office, allowing for an even greater collection of information. Each day, prior to the close of business an intelligence product was disseminated to law enforcement officials outlining all arrests and criminal trends related to the storm. The information provided a balance of factual information for the Attorney General, his staff, and the executive leaders in each of the impacted communities.

3. Production of Disaster Intelligence for Senior Government Executives

As the NJ ROIC continued to further define its role in support of the disaster, an emergence of suspected criminal behavior became a concern of NJ Attorney General Jeffrey Chiesa. Anecdotal stories from local politicians and media reports declaring that crimes of "looting" (theft) and burglary were rampant in disaster affected areas resulted in another requirement of the NJ ROIC. The NJ ROIC was charged with providing analysis of this situation—a task never before required of it, as it was being asked to verify the reports of crime, when in fact criminal acts, if legitimate would not yet have been reported by property owners. Using various sources, analysts confirmed, through social media and interviews, that there was a strong suspicion of criminal behavior in

those communities. To make policy-level decisions, the Attorney General was provided intelligence about the fragile and unstable operating environment as it related to law enforcement operations and criminal activity.

4. Production of Disaster Intelligence for Field Personnel

With the deployment of over 500 law enforcement officers into the impacted areas along the coast, the need for updated law enforcement related information, maps, and other general public safety messaging was necessary to better inform commanders and their subordinates. The NJ ROIC developed an "out of state, state police" distribution list, where critical information was e-mailed to constituents on a regular basis. Maps of the region were also provided to the entire contingent of law enforcement personnel providing before and after depictions of the storms impact, as well as situational awareness related to each municipality.

5. Focused Collection Efforts to Support FEMA and NJ OEM Operations

In response, a plan was developed that created collaboration through a networking of local police chiefs and personnel from the NJ ROIC. The network created information flows that provided invaluable information used in the protection and rehabilitation of those communities most severely impacted by the storm. Through the chiefs of police network, NJ ROIC personnel were deployed into the field and began the process of collecting information related to the condition of various municipal government buildings and infrastructure. The reports were developed for the NJ OEM to share with FEMA and the Army Corps of Engineers to further prioritize mission assignments.

6. Observations

The events that followed the devastating impact of Hurricane Sandy created a chaotic environment; the subsequent multi-disciplinary approach to problem solving demonstrated how the NJ ROIC can adapt and embrace the characteristics of the ecosystem model, which influenced decision makers. The fusion center model's characteristics, which include, collaboration and cooperation between multiple

government and private sector agencies, an emergence of ideas to solve complex problems, information flows, leadership principles that create a culture that allows for and encourages creativity and planning, helped to foster an environment that allowed for the solving of complex issues.

Where the research set out to analyze the impact the homeland security environment has on decision makers through the analysis of two separate lenses, the ecosystem and hierarchical lens, attributes from both models proved to be invaluable to the success of today's homeland security environment. What follows in section C are recommendations to further embrace the ecosystem characteristics, incorporating them into the NJ homeland security enterprise.

C. RECOMMENDATIONS

Within the federal government, it was the events of 9/11 and subsequent realization that the threats of terrorism from state sponsored and individual terrorist organizations, or radical fundamentalists, brought to the forefront a level of complexity current government entities were not prepared to address. The need for information sharing is one of the most obvious weaknesses addressed in the aftermath of the 9/11 attacks. The result of this catastrophic event led to a reorganization of federal government agencies and the creation of the DHS. Strategies that followed centered on information and resource sharing with an emphasis on collaboration. Networking between governmental agencies and the privates sector, along with the leveraging of resources from partner agencies, is now the expected norm. The demands on leaders to operate in this new paradigm creates an inherent impediment in that hierarchical organizational models that are believed to have created a culture, where a leaders command and control mindset does not always fall in line with the open, networked system envisioned through the creation of a homeland security enterprise.

Understanding the inherent difficulty in a government's ability to reorganize, the recommendations include minor changes to certain processes currently in place at the state level. They also describe how strategic planning, technology, and training can

influence leaders, while also altering culture, enhancing collaboration, flexibility, and connectedness throughout the homeland security enterprise.

In order to develop a better model to support the New Jersey state homeland security mission, the state should consider amending App.A:9–64, the "New Jersey Domestic Security Preparedness Act." This amendment would dissolve the New Jersey Domestic Preparedness Task Force and create the NJ Homeland Security Task Force. The newly created NJ Homeland Security Task Force would include the members of the previous task force along with other representatives from the federal government who are currently members of the NJ ROIC Governance Board. The current Domestic Security Planning Group (established through the Domestic Security Preparedness Act) and the NJ ROIC Governance Board would both fall under the Homeland Security Task Force as the fusion center and preparedness collaborative advisory committees. NJ's fusion center governance board structure and by laws, which currently relegate authority to the Director of the OHSP as the chief executive and decision maker, would not apply to either of the advisory committees. Both committees would allow leaders a more active role in decision-making and strategic planning. Once established, both advisory committees would focus on developing and contributing to a statewide information-sharing environment to enhance homeland security collaboration.

The research also recognized the need for organizational change, understanding that many agencies including "state police organizations are well known for custom and tradition—meaning change is painful and slow. As a result, reform efforts are more dependent on cultural aspects that yield change than creative ideas that win support from change advocates."[173] To change organizational culture that will impact the decision-making process for leaders the use of scenarios and a blend of strategic planning methods are suggested.

As noted throughout the research most of today's government agencies and organizations structure follow a hierarchical model. This research provides some recommendations to enhance collaboration, while broadening leaders' decision-making

[173] Raymond Guidetti, "Policing the Homeland: Choosing the Intelligent Model" (master's thesis, Naval Postgraduate School, 2006), 18.

capacity by introducing knowledge and information. These suggested changes would not necessitate the need for drastic change to the existing hierarchies within. To understand complex issues, decision makers will have to collaborate with the "whole" homeland security enterprise. As depicted in the research, it is suggested that governance boards with hierarchical structure, by-laws and top-down management, should consider the establishment of collaborative advisory committees in lieu of the formal governance board structure. This would allow leaders to present and develop solutions to solve issues relevant to them and the overarching homeland security program through an open networked solution. The use of collaborative advisory boards gives representatives more access and control to other board members without forcing agencies to enter into memorandums of understanding, which can be an obstacle in establishing working relationships between government entities.

Finally, key to the success and advancement in learning, sharing knowledge, and collaboration is in the development and participation of a robust information-sharing environment. Cultural changes that lead to leaders' acceptance and participation in this endeavor will be key to its success. As leaders begin to share information with other government agencies, the private and public sector, they will gain knowledge through feedback loops, broadening their understanding and awareness of complex problems, therefore allowing them the decision making skills needed in the homeland security environment.

Currently, the Route 21 Corridor initiative is working towards the creation of a cross-jurisdictional information-sharing environment to assist law enforcement agencies in that region, while also establishing connectivity to the NJ ROIC for further support for analytics and information sharing capabilities. This virtual tool is meant to leverage cloud computing and social networking technologies that will provide law enforcement with better opportunities to share information in that region. This project initiative is meant to break down cultural barriers that currently exist due to the many disparate technologies in existence today that inhibit agencies from having a true, real time information sharing environment for crime fighting professionals. The information-sharing environment will also broaden agency leaders' perspectives on crime trends and criminal related concerns

of neighboring or other cross-jurisdictional partners. Where this cloud based initiative provides the first step in generating interconnectedness between law enforcement agencies, the next step should expand on the ability to include a more complex solution that could integrate other non-law enforcement agencies and the public to access this virtual environment. As the environment grows and includes additional users, their ability to post and share information will assist agencies in solving crime, better understanding the concerns of the public, and developing or enhancing relationships.

Recognizing the need for a statewide information sharing environment platform, the state of New Jersey began the early stages of designing a scope of work that will define how the state can meet this goal. Based on a technology assessment conducted by the Integrated Justice Information System Institute, a recommendation was made that outlined a course of action for the state, based on the concept that the NJ ROIC would become the focal point for information sharing, which connect state and local entities to the federal government.

The key difference between this design and that of existing platforms is that it will be a "smart" platform design that will include automated analytical processes. Furthermore, the cloud-based environment will allow users to provide information automatically through current systems and pull or analyze data without the assistance of fusion center analysts. In this environment, private sector partners could upload suspicious activity reports, retail theft, and other crimes or behavior (i.e., purchases of large quantities of certain precursor chemicals known for their use in homemade explosives). The program design will also allow for the automated collection of ALPR information and records management system feeds. To truly allow for a holistic approach to public safety and homeland security, this environment will also allow non-law enforcement entities to contribute their data and automatically search and create analytics from open source, social media sites.

Where technology will play a significant role in its contribution to the ecosystem model, the interaction and needed cultural shift between agency leaders in the homeland security profession will take place, in part through strategic planning. Here, both the methodology, along with the solutions generated through strategic planning efforts, will

change how leaders engage problems, people, and, ultimately, how they are influenced in decision-making processes. Strategic planning must incorporate processes that will influence leaders to explore solutions to problems that might entail the capabilities and resources of other non-similar agencies to leverage their professional expertise and perspective. To accomplish this goal, leaders must embrace the concepts of complex leadership.

Complex leadership differs from traditional leadership styles in several ways. According to Marion and Uhl-Bien, "complex leadership argues that organizations and their leaders are products of interactive dynamics. That is, leaders do not create the system but rather are created by it, through emergence."[174] The complex leadership style is not top-down driven; rather, it fosters bottom-up behavior, enhancing creativity by truly empowering subordinates at the lower levels. A major role of the leader is to foster relationships to create interdependencies and connectedness between agents. In turn, complexity changes the perspective of the leader and subordinate role, which in turn can have an impact on the culture of the organization and how it views its leaders and handles problems.

In order to foster an environment that influences decision making, encourages, creative thinking, solving problem, collaboration with partner agencies and the community, leaders should focus on the use of contemporary strategic planning philosophy. Using a hybrid of styles, leaders should be encouraged to provide organizations with a broad vision, using the entrepreneurial school model where the central concept is to create a mental representation of strategy by the leaders of the organization.[175] Leaders then need to step back and allow strategies to emerge holistically. Leaders should also encourage diversity and collaboration in building teams

[174] Russ Marion and Mary Uhl-Bien, "Complexity Theory and Al-Qaeda: Examining Complex Leadership," *Emergence* 5, no. 1 (2003): 55.

[175] Mintzberg, Ahlstrand, and Lampel, *Strategy Safari*, 124.

to address agency needs and response to agency demands. Strategies should encourage this behavior, which will create novel ideas and initiatives to deal with complex homeland security issues.

The analysis, developed from information and data received through a robust information sharing environment would drive strategic planning objectives, where the overarching mission would be to address public safety issues to enhance the quality of life for individuals through the reduction or prevention of crime. Strategic planning would allow for flexibility, create learning, encourage change, and by design have feedback loops for continued adaptation. The strategic response capability would also enable leaders to respond quickly and cost-effectively to challenges and opportunities in this complex environment.[176] Figure 2 is an illustration of this strategic planning process.

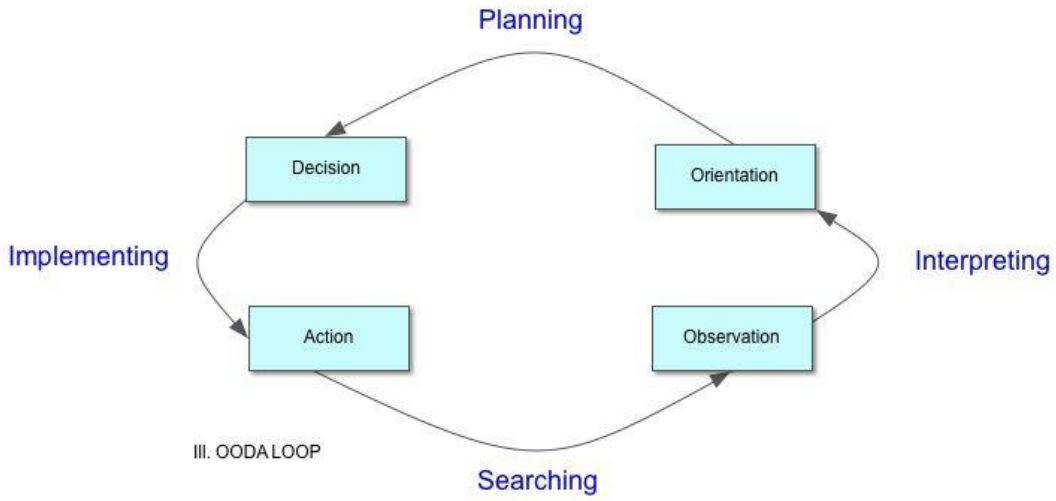

Figure 2. OODA LOOP[177]

[176] Hans Bandhold and Mats Lindgren, *Scenario Planning: The Link between Future and Strategy*, 2nd ed. (New York: Palgrave Macmillan, 2009), 7.

[177] Alberts and Hayes, *Power to the Edge*, 49.

One of the challenges for leaders will be to balance between stability and flexibility, where the stability of strategic planning and decision processes do not overshadow the necessary amount of instability that allows for continuous change and adaptation in this complex environment.[178]

Leaders should also be encouraged to use scenario based planning whenever appropriate. Scenario based planning assists organizations in their development of policies to guide the organization. The difficulty in planning is in the realization that there is uncertainty and ambiguity in the environment, which creates for an unpredictable future.[179] According to author Kees Van Der Heijden:

> Strategic planning requires the following six elements: acknowledgement of aims, through an external mandate, or the organic purpose of survival; assessment of the organization s characteristics, including its capability to change; assessment of the environment current and future; assessment of the fit between the two; invention and development of policies to improve the fit; and decisions and action to implement the strategy.[180]

The use of scenario planning is one approach to dealing with all six characteristics. According to Godet, "In this process a scenario is the set formed by the description of a future situation and the course of events that enables one to progress from the original situation to the future situation."[181]

By applying these methodologies to the Safe Streets and Neighborhoods, strategic plans would have resulted in initiatives that focused on bottom up strategies rather than the top-down hierarchical plans used by the Corzine administration. The objectives and local efforts would then be based on community concerns and interdependencies with other jurisdictions.

The inherent value of the ICS model would suggest agencies continue its use for events planning. However, leaders should also develop objectives that might expose

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178 Bandhold and Lindgren, *Scenario Planning*, 13.

179 Michael Godet, "The Art of Scenarios and Strategic Planning: Tools and Pitfalls," *Technical Forecasting and Social Change* 65 (2000): 15.

180 Ibid.

181 Ibid., 11.

potential obstacles or threats to public safety. Through collaborative-based strategies, participating agency leaders would engage in facilitated conversations in planning for the event. A shift from approaching the planning process from an agency role and responsibility philosophy to a holistic, network systems mindset would enhance and influence the decision-making process for leaders. Using a blend of red-team and scenario based strategies, leaders would be exposed to the potential gaps in tactical plans while also running through scenarios that provide a narrative that would "shift the thinking" so that leaders would see things from a different perspective—challenging decision makers to engage the whole environment rather than their role in the environment.[182] The illustration in Figure 3 is a depiction of the steps that would be included in the scenario planning process.

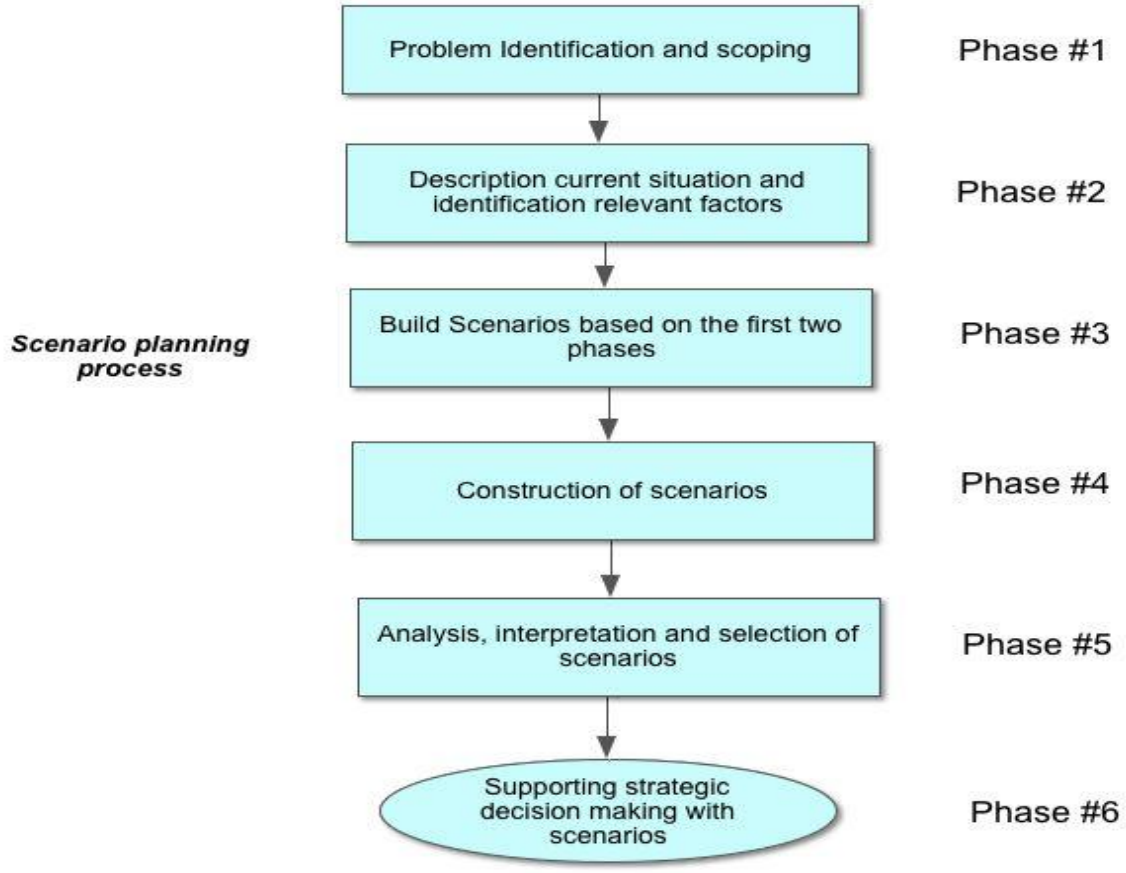

Figure 3. Scenario Planning Process

[182] Louis van der Merwe, "Scenario-Based Strategy in Practice: A Framework," *Advances in Developing Human Resources* 10, no. 2 (May 2008): 16, doi: 10.1177/1523422307313321.

The use of scenario analysis is often used for complex issues where there is an uncertainty about the outcome of an event. Scenario analysis brings decision makers together and can have a strong impact on decision makers thinking.[183] Essential to this model is the inclusion of planners, analysts, and decision makers in the scenario planning and analysis processes.

Applying the scenario planning process to the NSM, leaders would have started by identifying the issues, which in this case would include all aspects that could have an impact on public safety resulting from potential events surrounding or related to the NSM event. In the second phase of analysis, the NSM, its history/background, past behavior, and other information would be collected, along with information related to the physical environment, counter protestors, and the potential risk posed to public safety. This information would then be analyzed and used for scenario planning. It is during this process that the future originates from the present and takes shape through complex interactions between various agents from a multitude of organizations.[184]

Applying this methodology to the NSM would have created dialogue between the various leaders of many of the organizations that participated in the planning and operations for the event. The outcome of the scenarios would have prompted questions about NSM activities prior to the event, potentially leading to plans that would have included the threat to the NSM members during their visit and pre-rally meeting in Pemberton Borough, New Jersey. This hypothesis is derived from the facts learned about the actions of the protestors who assaulted the NSM members after the event. An investigation discovered that protestors used social media to incite others to "phone-jam" the Comfort Inn and 449 Club in Pemberton where the NSM were holding their pre-rally meeting. The collaboration of agency leaders and use of scenarios may have led to questions about potential outbreaks of violence and means of identifying collection points

[183] Richards Heuer and Randolph Pherson, *Structured Analytic Techniques for Intelligence Analysis* (Washington DC: CQ Press, 2011), 123.

[184] Ropert Bood and Theo Postma, "Scenario Analysis as a Strategic Management Tool" (Groningen, The Netherlands: University of Groningen, 1998), 5.

(social media) for law enforcement leading up to the day of the event. The use of social media as a tool for gathering information that would be shared in this environment leads to the final recommendation.

Critical to this model is the information-sharing environment that broadens leaders' decision-making processes. Information sharing is critical to the collaboration and decision-making processes used to shape agency strategies. The information-sharing environment would allow agencies to use data from sources not currently available to potentially connect criminals to associates, evidence to potential criminals, and criminal activity to terrorist organizations or threats. The leaders' role in supporting this collaborative environment will need to be one that supports and understands the need to engage multiple agencies of all scales, where diversity is common place, individual missions vary, and interdependencies and connectedness to other entities is uncommon from each individual leaders perspective. The overwhelming impact for leaders in their decision-making will come from the information and knowledge they share with partner agencies. To that end, leaders will look to solve problems through available options that are supported using resources and knowledge from their own or other agencies. Using advanced technology, NJ ROIC analysts would pull information from the information-sharing environment and conduct "predictive" analysis to assist local operations. The analysis would focus on cross-jurisdictional associations and other public safety issues that contribute to a holistic approach and understanding of the community. Decision makers would use this analysis to support initiatives. The use of social media, input from the public, and data from local records management systems would create a holistic picture—the, who, what, where, when, and why, analysis of the criminal environment.

The information-sharing environment builds on the current conceptual model being considered for development in New Jersey. This model includes a plan to have a cross jurisdictional capacity that reaches homeland security agents throughout the state. The environment includes a "smart" platform that enables automated analytical processes, allowing partner agencies to conduct analysis independently without the use of fusion center analysts. The information-sharing environment will not only allow for greater analysis and problem solving opportunities but also will change the culture of

organizations and broaden the aperture of the lens leaders view their environment through. The dynamic created through the information-sharing environment impacts leaders understanding of their role, its impact on the community as well as the culture of the organization.

In the complex homeland security environment, technology creates a paradigm shift for leaders, requiring them to adjust their roles and perceptions. Agency leaders have traditionally focused on their agency specific responsibilities and capabilities when engaging public safety or other issues; however, once exposed to the robust information-sharing environment in the ecosystem model, leaders will leverage lessons learned from partner agencies and use collaborative strategies to solve problems. Through this process, leaders' intent, understanding of complex problems, eventual development of policy to encourage further collaboration and resource sharing will result in a culture shift. This will change organizations and their modus operandi in the way they engage other agencies and complex problems.

D. CONCLUSION

Organizations in the private sector have used the term ecosystem as a metaphor to describe their working environment. The advent of the homeland security has also created a similar phenomenon. The model of the homeland security ecosystem should therefore thrive to create characteristics commonly found in organizations that resemble open networked systems with the understanding and benefit of knowing that the characteristics of the ecosystem can influence and benefit the decision-making process of agency leaders when dealing with complex homeland security issues.

In both case studies, the research has noted there are advantages of the ecosystem as well as the hierarchical model. For example, the ecosystem model requires leaders to move away from a traditional fragmented approach to problem solving, to one of collaboration. The model encourages dialogue and problem solving that takes into account the various perspectives of decision makers, which in turn creates networks. Although the model creates diversity, it is also understood that diversity can create challenges to communication and understanding, but interdependences can create the

incentive to overcome these challenges, which lead to greater learning and trust.[185] This holds true for other attributes of both models, which will require leaders to have a full understanding of the environment work in and how best to adapt when confronted with complex issues.

Information sharing also emerged as a critical attribute through the analysis in both case studies. The concept of creating information sharing platforms and networks that allow connectivity within the homeland security environment has been and will continue to be paramount to the future success in homeland security's all hazards, all crimes, and all threats approach to public safety. The impact strategic plans can have on decision makers is also identified in both models.

The strategic plan developed by Governor Jon Corzine, *Strategy for Safe Streets and Neighborhoods*,[186] followed a traditional hierarchical model of planning while incorporating the concepts attributed to open system thinking or "ecosystems thinking" as referred to by this author. It was evident that the plan did not develop out of emerging ideas from the communities it was meant to assist with support from the highest levels of government. Rather, it was written and delivered with a hierarchical top down approach. The result; its effectiveness was limited as it did not have feedback loops and learning that would have encouraged communities to adapt, learn, and develop new strategies on a reoccurring basis.

Finally, the research set out to answer the question, "What can be learned by examining the New Jersey Homeland security environment through both hierarchical and ecosystem models and what influence can those heuristic templates do to aid organizational decision making?" The case study analysis identified characteristics of both models, paramount to the contribution in solving complex issues. A third model was identified and presented in the application section of this research, which clearly described how the combination of both the ecosystem and hierarchical models influenced decision makers. The NJ ROIC, during the operational period associated with the events

[185] Innes and Booher, Planning with Complexity, 197.

[186] Corzine, *The State of New Jersey, A Strategy for Safe Streets.*

of Hurricane Sandy demonstrated how both ecosystem and hierarchical characteristics can influence decision makers and allow for an emergence of ideas to solve complex homeland security related issues.

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LIST OF REFERENCES

Alberts, David and Richard Hayes. *Power to the Edge : Command, Control in the Information Age*. Washington D.C.: CCRP Publication Series, 2003.

Allison, Graham T. and Philip Zelikow. *Essence of Decision : Explaining the Cuban Missile Crisis*. New York: Longman, 1999.

Bandhold, Hans and Mats Lindgren. *Scenario Planning: The Link between Future and Strategy*, 2nd ed. New York: Palgrave Macmillan, 2009.

Bellavita, Christopher. "Changing Homeland Security: What Is Homeland Security." *Homeland Security Affairs Journal* 4, no. 2 (June 2008): 1.

Benhamou, Eric. "Digital World Mirrors Life of Ecosystems." *Computer Reseller News* (February 1996): 36.

Bood, Ropert and Theo Postma. "Scenario Analysis as a Strategic Management Tool." Groningen, The Netherlands: University of Groningen, 1998.

Briscoe, Gerard. *Creating a Digital Ecosystem: Service-Oriented Architectures with Distributed Evolutionary Computing*. London: Imperial College London: 2009 (abs 0712.4159).

Briscoe, Gerard, Suzanne Sadedin, and Philippe Wilde, "Digital Ecosystems: Ecosystem-Oriented Architectures." *Natural Computing* 10, no. 3 (August 10, 2011): 1143–1194. doi: 10.1007/s11047–011–9254–0.

Corzine, Jon S. *The State of New Jersey: A Strategy for Safe Streets and Neighborhoods*. West Trenton, NJ: State of New Jersey, 2007.

Daft, Richard L. *Organization Theory and Design*. 10th ed. Mason, Ohio: South-Western Cengage Learning, 2010.

Demarco, Jerry. "Elite Unit Crosses Borders to Hunt Violent Criminals. Cliffview Pilot." September 2011. http://cliffviewpilot.com/elite-unit-crosses-borders-to-hunt-violent-criminals/. Accessed November 18, 2012.

"Emergency Management in New Jersey—A Historical Perspective." State of New Jersey. http://www.state.nj.us/njoem/press_emhistory.html. Accessed November 20, 2012.

"Event Advisory, National Socialist Movement." Internal document, Regional Operations Intelligence Center, West Trenton, NJ, April 2011.

Godet, Michael. "The Art of Scenarios and Strategic Planning: Tools and Pitfalls." *Technical Forecasting and Social Change* 65 (2000): 15.

Guidetti, Raymond. "Policing the Homeland: Choosing the Intelligent Model." Master's thesis, Naval Postgraduate School, 2006.

Hartig, John, Michael Zarull, Thomas Heidtke, and Hermang Shaw. "Implementing Ecosystem-based Management: Lessons from the Great Lakes." *Journal of Environmental Planning and Management* 41, no. 1 (1998): 45–75.

Herrmann, Thomas, Kai-Uwe Loser, and Isa Jahnke, "Sociotechnical Walkthrough: A Means for Knowledge Integration," *The Learning Organization* 14, no. 5 (2007): 450–464, doi: 10.1108/09696470710762664.

Heuer, Richards and Randolph Pherson. *Structured Analytic Techniques for Intelligence Analysis*. Washington DC: CQ Press, 2011.

Hocevar, Susan P. Gail F. Thomas, and Erik Jansen. "Building Collaborative Capacity: An Innovative Strategy for Homeland Security Preparedness." In vol. 12, *Advances in Interdisciplinary Studies of Work Teams*, Ed. Michael Beryerlein. Bingley, UK, 2006.

"Homeland Security Presidential Directive-5." Federation of American Scientists. February 28, 2003. http://www.fas.org/irp/offdocs/nspd/hspd-5.html. Accessed November 20, 2012.

Iansiti, Marco. *The Keystone Advantage : What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability*. Boston, MA: Harvard Business School Press, 2004.

Innes, Judith E. and David E. Booher, *Planning with Complexity an Introduction to Collaborative Rationality for Public Policy*, 1st ed. New York: Routledge, 2010. http://public.eblib.com/EBLPublic/PublicView.do?ptiID=481030. Accessed September 14, 2012.

Kim, Hyeyoung, Jae-Nam Lee, and Jaemin Han. "The Role of IT in Business Ecosystems." *Communications of the ACM* 53, no. 5 (May 2010): 151. doi:10.1145/1735223.1735260.

Lavrin, Anton and Miroslav Zelko. "Knowledge Sharing in Regional Digital Ecosystems." *Organizaija* 39, no. 3 (March 2006): 191–199.

Leedy, Paul D. and Jeanne E. Ormrod. *Practical Research : Planning and Design*. Upper Saddle River, NJ: Merrill, 2010.

Marion, Russ and Mary Uhl-Bien. "Complexity Theory and Al-Qaeda: Examining Complex Leadership." *Emergence* 5, no. 1 (2003): 55.

Martinelli, Dante P. "Systems Hierarchies and Management." *Systems Research and Behavioral Science* 18, no. 1 (January 25, 2001): 69. doi:10.1002/sres.390.

Mintzberg, Henry, Bruce Ahlstrand, and Joseph Lampel. *Strategy Safari: A Guided Tour through the Wilds of Strategic Management*. 1st ed. New York: Free Press, 1998.

Moore, James. "The Advent of Business Ecosystems." *Upside* 7, no. 12 (December 1995): 30.

Moore, James. "Predators and Prey: A New Ecology of Competition." *Harvard Business Review* 71, no. 3 (June 1993): 2.

National Commission on Terrorist Attacks upon the United States. *The 9 11 Commission Report : Final Report of the National Commission on Terrorist Attacks upon the United States*. New York: Norton & Co, 2004.

New Jersey Office of Homeland Security and Preparedness. "New Jersey State Homeland Security Strategy 2012." Internal document, State of New Jersey, West Trenton, NJ, 2012.

New Jersey Regional Operations Intelligence Center. *Concept Paper: Passaic River Corridor Information Analysis and Exchange Program*. West Trenton, NJ: NJ Regional Operations Intelligence Center, 2008.

"New Jersey State Homeland Security Strategy 2012." Internal document, New Jersey Office of Homeland Security and Preparedness, West Trenton, NJ, 2012.

New Jersey State Police. "NJ ROIC Intelligence Collection Cell." Internal document, West Trenton, NJ: NJ Regional Operations and Intelligence Center, February 2012.

New Jersey State Police. "Operation Fourth Down Tackles Violent Bloods Set in Paterson." New Jersey State Police. June 2011. http://www.njsp.org/news/pr062311.html. Accessed November 18, 2012.

"NJ ROIC Privacy Policy." Internal document, Regional Operations Intelligence Center, West Trenton, NJ, February 2011.

Passaic County Prosecutor's Office. "Congressman Pascrell Announces $270,084 Federal Grant to the Passaic County Prosecutor's Office." Passaic County, NJ: 2011.

Page, Scott E. *Understanding Complexity*. Chantilly, VA: The Teaching Company, 2009.

"Phone Jam to Shut Down Nazi Conference in Bordentown!" April 15, 2011. San Francisco Bay Area Independent Media Center. http://www.indybay.org/newsitems/2011/04/15/18677261.php. Accessed August 10, 2012.

Ratcliffe, Jerry. "The Effectiveness of Police Intelligence Management: A New Zealand Case Study." *Police Practice and Research* 6, no. 5 (December 2005): 439. doi:10.1080/15614260500433038.

Regional Operations Intelligence Center. "Route 21 Corridor Violent Crime Suppression Initiative." Internal document, Regional Operations Intelligence Center, West Trenton, NJ. February 21, 2012.

Sagarin, Rafe. Learning from the Octopus: How Secrets from Nature can Help Us Fight Terrorist Attacks, Natural Disasters, and Disease. New York: Basic Books, 2012. Kindle edition.

"Situation Report #1, NJ OEM." Internal report, New Jersey Office of Emergency Management, West Trenton, NJ, April 16, 2011.

Starr, Cecie. *Biology : Concepts and Applications*. 2nd ed. Belmont, CA: Wadsworth Publishing Company, 1994.

State of New Jersey Executive Order # 5 (Corzine, 2006).

Trist, Eric. *The Evolution of Socio-Technical Systems : A Conceptual Framework and an Action Research Program*. Toronto: Ontario Ministry of Labour, Ontario Quality of Working Life Centre, 1981.

U.S. Department of Homeland Security. *National Incident Management System*. Washington, D.C.: U.S. Department of Homeland Security, 2004.

"U.S. National Security Strategy 2010." *The National Strategy Forum Review* 19, no. 1 (Winter 2009): 1–4. http://www.nationalstrategy.com/NSFReview/Winter2009Vol19No1USNSS2010.aspx. Accessed November 12, 2012.

van der Merwe, Louis. "Scenario-Based Strategy in Practice: A Framework." *Advances in Developing Human Resources* 10, no. 2 (May 2008): 16. doi:10.1177/1523422307313321

von Bertalanffy, Ludwig. *General System Theory*. Rev. ed., 9th printing. New York: Braziller, 1984.

White House. *National Security Strategy 2010*. Washington D.C.: White House, 2010.

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