

COLLABORATION AND THE POLICY DEVELOPMENT PROCESS:
INTRASTATE EFFORTS TO IMPROVE PUBLIC SAFETY

By

KIMBERLY D. MARTIN

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To my mother for always believing in me

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TABLE OF CONTENTS

	<u>page</u>
ACKNOWLEDGMENTS	4
LIST OF TABLES	7
LIST OF FIGURES	9
LIST OF ABBREVIATIONS.....	11
ABSTRACT.....	14
CHAPTER	
1 INTRASTATE RELATIONSHIPS, INTEROPERABILITY, AND POLICY DEVELOPMENT	16
Introduction.....	16
Evolution of Intergovernmental Relations	17
What is Interoperability?	18
Intrastate Collaboration & Interoperability	24
State and Local Policy Development.....	26
Research Questions and Methods.....	29
Unit of Analysis.....	31
State Selection	31
2 COLLABORATION AS A POLICY INPUT	34
Explanation of Terms	37
Explanation of Collaborative Inputs.....	39
Explanation of Political Systems.....	54
Case Analysis.....	59
Qualitative Measurement of Collaborative Success	60
3 COLLABORATION BY STATE	68
Louisiana.....	69
Arkansas	79
Rhode Island	86
Texas.....	92
California	102
Illinois	113
Washington	121
New York.....	129
High, Moderate, and Low Levels of Collaboration.....	140
Pattern Matching and Propositions.....	146

4	POLICY DEVELOPMENT BY NETWORK.....	163
	Louisiana.....	169
	Arkansas	170
	Rhode Island	172
	Texas.....	173
	California.....	175
	Illinois.....	177
	Washington.....	178
	New York.....	179
	Which Network Structures Lead to Collaboration?.....	181
5	CONCLUSION.....	195
	Louisiana.....	196
	Arkansas	198
	Rhode Island	199
	Texas.....	200
	California.....	201
	Illinois.....	202
	Washington.....	204
	New York.....	205
	Keys to Successful Collaboration: Policy Inputs and Political Systems	206
	Keys to Successful Collaboration: Networks.....	208
	Future Research	209
	Implications for Federalism and Localism	210
APPENDIX		
A	INTEROPERABILITY BACKGROUND AND TERMINOLOGY	213
B	STATEWIDE COMMUNICATIONS INTEROPERABILITY PLAN CRITERIA	216
C	STATE INFORMATION TABLES.....	218
	LIST OF REFERENCES.....	220
	BIOGRAPHICAL SKETCH	234

LIST OF TABLES

<u>Table</u>	<u>page</u>
2-1 Case selection.....	63
3-1 Federal funding awarded to Arkansas in millions.	150
3-2 Federal funding awarded to California in millions.....	151
3-3 Federal funding awarded to Illinois in millions.....	152
3-4 Federal funding awarded to Louisiana in millions.	154
3-5 Federal funding awarded to Rhode Island in millions.....	154
3-6 Comparison of racial demographics in New York State	155
3-7 Federal funding awarded to New York in millions.	156
3-8 Federal funding awarded to Texas in millions.....	157
3-9 Federal funding awarded to Washington in millions.....	158
3-10 Comparison of governance structures.....	158
3-11 Comparison of leadership	159
3-12 Statewide networks available.....	159
3-13 Comparison of funding across states	160
3-14 Comparison of training available across states.....	160
3-15 Comparison of SOPs across states.....	160
3-16 Statutory authority	161
3-17 Comparison of political history	161
3-18 Comparison of risk level.....	161
3-19 State demographics	162
3-20 Fulfillment of propositions according to state	162
C-1 Indicating whether the state has UASI regions.....	218
C-2 US Census Bureau 2009 population estimates	218

C-3	Grant totals by state from 2006 to 2010 in millions	218
C-4	Local discretionary authority	219

LIST OF FIGURES

<u>Figure</u>	<u>page</u>
2-1 Collaboration as a policy input for interoperability policy.....	62
2-2 Subject-specific organizational structure.....	63
2-3 Regional governance structure.....	64
2-4 Conventional organizational structure.....	64
2-5 Leveraged organizational structure.....	65
2-6 Policy inputs present in the “ideal” collaborative state.....	66
2-7 Political systems present in the “ideal” collaborative state.....	67
3-1 Emergency management regions.....	150
3-2 Hierarchical depiction of Arkansas’ governance structure.....	150
3-3 Hierarchical depiction of California’s interoperable governance structure.....	151
3-4 CalSIEC planning areas and mutual aid regions.....	151
3-5 Illinois regions.....	152
3-6 Illinois’ governance structure.....	152
3-7 Louisiana homeland security regions.....	153
3-8 Louisiana’s communications governance structure.....	153
3-9 Current LWIN availability.....	154
3-10 Communications systems currently being integrated into Gulf WIN.....	154
3-11 FCC regional planning committees in New York.....	155
3-12 New York State’s former governance structure.....	156
3-13 State planning regions and disaster district boundaries.....	156
3-14 Hierarchical depiction of Texas’s communications governance structure.....	157
3-15 Regional homeland security coordination districts.....	157
3-16 Washington State’s communications governance structure.....	158

4-1	Network density and structural holes.....	184
4-2	Direct and indirect ties to the state.....	184
4-3	Louisiana post Katrina 2005	184
4-4	Louisiana’s network model in 2007 after instituting a regional structure.	185
4-5	Louisiana based on service type	185
4-6	Arkansas by government type.....	186
4-7	Arkansas by service type	186
4-8	Rhode Island Communications Working Group members in red.....	187
4-9	Organizations receiving an interview in blue.	187
4-10	TxRC subcommittee members make up the internal portion of the network.	188
4-11	Texas based on regions.	188
4-12	Texas based on service type.....	189
4-13	California based on government level	189
4-14	California based on service type.....	190
4-15	PSRSPC members serve as gate keepers	190
4-16	Illinois SIEC members in blue.....	191
4-17	Illinois by government level	191
4-18	Washington’s network by government type.	192
4-19	Washington’s network by service type.....	192
4-20	Washington’s SIEC membership.....	193
4-21	New York based on government level.....	193
4-22	The SWN Advisory Council formed a close knit group.....	194
4-23	New York based on service type	194
A-1	Basic components of a land mobile radio communications system.	213
A-2	Public safety agency radio frequency bands.....	214

LIST OF ABBREVIATIONS

ADEM	Arkansas Department of Emergency Management
AICC	Arkansas Interoperable Communications Committee
AICEC	Arkansas Interoperable Communications Executive Committee
ARSCIP	Arkansas Statewide Communications Interoperability Plan
AWIN	Arkansas Wireless Information Network
CALCORD	California On-Scene Emergency Coordination Radio Plan
CalSCIP	California Statewide Communications Interoperability Plan
CalSIEC	California Statewide Interoperability Executive Committee
CLEMARS	California Law Enforcement Mutual Aid Radio System
COML	Federal Communications Unit Leader training program
CWG	Communications Working Group
DIS	Department of Information Systems
DPS	Department of Public Safety
EMAC	Emergency Management Advisory Council
EMD	Emergency Management Division
EOC	Emergency Operations Center
FCC	Federal Communications Commission
GDEM	Governor's Division of Emergency Management
GOHSEP	Governor's Office of Homeland Security and Emergency Planning
Gulf WIN	Gulf of Mexico Wireless Information Network
ICS	Incident Command System
IECGP	Interoperable Emergency Communications Grant Program
IEMA	Illinois Emergency Management Agency
ISB	Information Services Board

ISCIP	Illinois Statewide Communications Interoperability Plan
ISPERN	Illinois State Police Emergency Radio Network
ITTF	Illinois Terrorism Task Force
LACIR	Louisiana Advisory Council on Intergovernmental Relations
LA SCIP	Louisiana Statewide Communications Interoperability Plan
MOU	Memoranda of Understanding
NOAA	National Oceanic and Atmospheric Administration
NIMS	National Incident Management System
NIPC	Northern Illinois Planning Commission
NYSCIP	New York Statewide Communications Interoperability Plan
OEC	Office of Emergency Communications
OES	Office of Emergency Services
OFT	Office for Technology
OHS	Office of Homeland Security
P25	Refers to Project 25 compliant technology
PSIC	Public Safety Interoperable Communications Grant Program
PSRSPC	Public Safety Radio Strategic Planning Committee
RIEMA	Rhode Island Emergency Management Agency
RI SCIP	Rhode Island Statewide Communication Interoperability Plan
RISCON	Rhode Island Statewide Communication Network
RoIP	Radio Over Internet Protocol
RPC	Regional Planning Committee
SAFECOM	Federal Safe Communications Program
SCIP	Statewide Communications Interoperability Plan
SEMS	Standardized Emergency Management System

SIEC	Statewide Interoperability Executive Committee
SIPO	Statewide Interoperability Planning Office
SOC	State Operations Center
SOP	Standard Operating Procedure
SoS	System of Systems
STARCOM 21	State Radio Communications for the 21 st Century
SWN	Statewide Network
TARC	Texas Association of Regional Councils
TICP	Tactical Interoperable Communications Plan
TRCIP	Texas Radio Communications Interoperability Plan
TxRC	Texas Radio Coalition
TxSCIP	Texas Statewide Communications Interoperability Plan
UASI	Urban Area Security Initiative
UHF	Ultra High Frequency
USGS	United States Geological Survey
VHF	Very High Frequency
WASCIP	Washington Statewide Communications Interoperability Plan
WSP	Washington State Police

Abstract of Dissertation Presented to the Graduate School
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By

Kimberly D. Martin

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Harold Seidman (1998) writes that by finding the correct formula for effective intergovernmental collaboration we can “reconcile the irreconcilable, harmonize competing interest, and overcome irrationalities in our government structures.” I discuss a specific type of collaboration, that of local and state emergency management agencies and the interoperability plans which require them to collaborate.

Interoperability has been the highest priority of state and local governments since September 11th (Reddick 2008; NGA 2009a). Interoperability includes wireless voice and data communication. An effective interoperability system would allow a “rapid and coordinated response” between local and state agencies during emergency incidents.

There are several barriers to effective interoperable communication which have created the need for greater collaboration between state and local governments. Emergency management agencies have different procedures, missions, protocols, and many agencies operate on different radio frequencies. The most troublesome barrier is the inability of many state and local governments to overcome the historical and structural barriers that prevent them from collaborating.

Given the same expectations from the federal government, why are some state and local governments able to form a collaborative bond while others are not? This research focuses on the policy development process as a crucial starting point for facilitating collaboration between states and local governments. Content analysis of statewide plans and interviews with local, state, and federal officials is utilized to develop case studies describing the collaborative efforts of eight U.S. states. Pattern matching and network analysis is also employed to determine which policy inputs result in greater levels of collaboration.

In short, I argue that the propensity of states to create an environment where local governments willingly collaborate for the sake of interoperability depends on the political tools or inputs that the state is willing to invest and the influence of political systems on those inputs. When inputs and political systems combine, they will either produce successful or failed policy. Impediments to collaboration can be addressed by determining what characteristics prevent states and local governments from working together.

CHAPTER 1
INTRASTATE RELATIONSHIPS, INTEROPERABILITY, AND POLICY DEVELOPMENT

Introduction

There is a fine line between gaining the benefits of collaborating and making the situation worse.

Chris Huxham and David McDonald 1992

Harold Seidman (1998) writes that by finding the correct formula for effective intergovernmental collaboration we can “reconcile the irreconcilable, harmonize competing interest, and overcome irrationalities in our government structures.” I examine a specific type of collaboration, that of local and state emergency management agencies and the interoperability plans which require them to collaborate. This research focuses on the policy development process as a crucial starting point for facilitating collaboration between states and local governments.

Why have some state and local governments been unable to form a collaborative bond while others seem to effortlessly maneuver through the policy process? In short, I argue that the propensity of states to create an environment where local governments willingly collaborate for the sake of public safety depends on the political tools or inputs the state is willing to invest and the influence of political systems on those inputs. Successful collaboration also depends on the structure of the relationship and communication between each level of government.

This chapter discusses how intrastate relationships have evolved over time and describes how September 11th increased the need for intrastate collaboration. This research specifically follows the development of the Statewide Communications Interoperability Plan: a shared policy that the states are tasked with developing alongside their respective local governments. The SCIP is also introduced in this chapter, along with the corresponding research questions and methods that will be used to explore this topic.

Evolution of Intergovernmental Relations

Successful intergovernmental collaboration has not always been so difficult to achieve. During the early half of the 20th century many scholars observed an increase in intergovernmental collaboration due to the rapid expansion of bureaucratic agencies (Corwin 1937; Clark 1938, V.O.Key 1937; Anderson 1946). This increase in collaborative activity was seen as an example of cooperative federalism where each distinct level of government began to share responsibilities and work toward a common goal (Grodzins 1966).

The adjective cooperative implies that intergovernmental relations are “peaceful and friendly” (Elazar 1991). In reality, cooperative federalism has come to “refer to the fact that governments must co-operate” not necessarily work and function in a cooperative manner (Elazar 1991). A great many intergovernmental relationships are not at all cooperative or peaceful. This led Grodzins (1966) to coin the phrase “antagonistic cooperation” which occurs when governments work together, at times unwillingly, and at times pursuing contradictory goals. Antagonistic cooperation entails continuous tension among organizations who must balance between positive cooperation and autonomy.

As cooperative federalism progressed, the practice of collaboration became widespread and necessary. “Collaboration is a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships; it is a process involving shared norms and mutually beneficial interactions” (Thomson and Perry 2006). Collaboration requires a more advanced relationship than cooperation and coordination; both of these terms ambiguously indicate that groups will work together. Gray (1989) writes that cooperation and coordination are part of the early stages of collaboration. Collaboration is a long term process “through which parties who see different aspects of a problem explore their differences and search for solutions beyond a limited vision of what is possible” (Gray 1989).

By the end of the 1960s governmental attempts at collaboration had turned to coercive federalism (Elazar et al. 1969). Efforts at policymaking and implementation went from a system where each level of government – federal, state, and local – was considered equal, to the federal government playing a sizeable role in policymaking. State and local governments soon began to suffer sanctions if they did not comply (Elazar 1991).

Post 9/11 intergovernmental relations. Post-September 11th federalism has once again distorted the lines between federal, state, and local control over a high stakes issue. Homeland security and emergency management were generally thought to be the domain of state and local governments before terrorist attacks took place on American soil (Walters 2001; Bentley 2004). Since September 11th there have been many instances where the federal government has taken control over homeland security issues.

What is Interoperability?

The ability of first responders – EMS, fire, police, and public health officials – to communicate with each other during an emergency is essential for protection of people and property (GAO 2004b). “Public safety officials generally recognize that effective ‘interoperable’ communications is the ability to talk with whom they want, when they want, when authorized, but not the ability to talk with everyone all the time” (GAO 2004b). An effective interoperability system would allow a “rapid and coordinated response” to any incident whether it is as large as Hurricane Katrina or as small as a highway oil spill.

Interoperability includes wireless voice and data communication. Most interoperable communication occurs when first responders use wireless radios to report to emergency headquarters or other first responders. Interoperability can also include wireless data transfer such as transfer of criminal records, building layouts, health information, or picture or video transmissions. Effective interoperability occurs when different electronic communications

systems – agency to agency, local to local, and state to local - are able to connect with one another in a timely manner (GAO 2007).

Interoperability has been a priority for the federal government and states since the September 11th attacks. In remarks before the U.S. House Appropriations Subcommittee on Homeland Security on March 4, 2004, Department of Homeland Security Secretary Tom Ridge said, "Our first responders are first on the scene and often the last to leave. Their ability to communicate and work together in the event of a crisis is paramount. So let me emphasize that we want to ensure that when federal money is spent ... it fosters interoperability."

To understand the importance of intrastate interoperability we need look no further than the local response to September 11th. The company tasked with analyzing the local response to the plane crash at the Pentagon declared that Arlington County's response was "a model that every metropolitan area should emulate" (Titan 2002). Arlington's fire department worked closely with the FBI. The fire chief in Alexandria sent a battalion chief to Arlington's command post to offer necessary support. Arlington County was later praised for its highly skilled and competent officials and field staff who were able to effectively react to the crisis by communicating quickly and efficiently with one another (Titan 2002). This success was based on a foundation of interoperable coordination which had begun years earlier. Arlington had already developed a response plan with an integrated command structure, mutual aid agreements for advanced communication with neighboring counties, a stable emergency team, and simulations within their own jurisdiction and among other local governments in the years before the attack took place (Titan 2002).

Alternatively, the consulting company which investigated New York City's response found that communication to commanders in the World Trade Center Buildings was irregular and

unreliable (McKinsey & Company 2002). Command centers were not able to transmit necessary information about what was happening to the two buildings outside. The New York Police Department had a helicopter circling around the Towers but because the two departments had no mutual aid agreement the fire chiefs inside had no way of receiving police assessments. The police department had no representatives at the fire department's command posts and vice versa. New York fire departments had never established a formal method for requesting mutual aid from neighboring communities (McKinsey & Company 2002). Finally, there was no method for incorporating other agencies. The World Trade Center facility was the responsibility of the Port Authority's police force which was left out of the coordination loop entirely (McKinsey & Company 2002).

Granted, the scale of the World Trade Center attack was at a much greater level than that of the Pentagon. The attacks on New York involved two buildings and larger planes. The design of the Pentagon kept the building from collapsing and aided emergency personnel in their efforts to evacuate; the World Trade Centers were not so lucky. It would be easy to argue that even the most prepared and best managed organizations would have struggled to overcome the crisis that New York's emergency management departments had to deal with that day (Kettle 2003).

The former examples were not meant to belittle the achievements of New York's emergency management departments. They simply demonstrate that homeland security and emergency management are only as effective as the coordinating efforts put into place before the incident. They also demonstrate that effective interoperability is imperative to saving lives and is also a crucial factor that must be considered when developing a plan for effective intergovernmental collaboration.

Why is collaboration difficult? There are several barriers that states must overcome to achieve effective interoperable communication. Clearly, local and state agencies both have different procedures, missions, and protocols, but they also operate on different radio frequencies. “Wireless technology requires radio frequency capacity in order to function and existing wireless technology is designed to work within specified frequency ranges” (GAO 2007). Varied radio frequencies have created obstacles to effective communication and, thus, have created the need for greater collaboration between state and local agencies.¹

The variation in radio frequencies across agencies has led to incompatible communication systems and has hindered the ability of agencies to collaborate. The incompatibility of many communications systems can be blamed on the myriad of manufacturers who produce and sell incompatible products (GAO 2007). However, incompatibility also stems from changes in frequency bands. Over time agencies were assigned higher frequencies as lower frequencies became more congested. Unfortunately, older equipment cannot transmit and receive all frequency bands. Differences in equipment and frequency bands make it difficult for first responders to communicate with other first responders in different jurisdictions because technology was purchased without regard for interoperability (GAO 2007).

Agencies that choose to collaborate have developed several technical approaches for improving interoperable communications across jurisdictions. Some of these techniques include swapping radios, patching incompatible radio systems together, developing mutual aid channels, and internet based systems.

Technical issues are not the only barriers to collaboration among local and state agencies. In 2004, the GAO reported that “the fundamental barrier to effectively addressing wireless

¹ For a more detailed discussion of interoperability terminology and problems, refer to Appendix A.

interoperability problems for public safety has been the lack of effective, collaborative, interdisciplinary, and intergovernmental cooperation and planning” (GAO 2004b).² According to a GAO report (2007), states find it difficult to collaborate with their local governments because: 1.) many local and state agencies are reluctant to give up control over their current communication methods, and 2.) public safety officials continue to defend their individual locality rather than coming together to solve regional and statewide issues. To ameliorate this problem, GAO suggests that an operation structure should be employed that strictly defines who is in charge and under what circumstances – voice, data, or both. In essence, the solution is to create a static organizational structure where reactions to different emergency scenarios are identical across the entire country (GAO 2004a).

The federal government believes that they can provide “leadership, long-term commitment, and focus to help states and local governments” meet the federal government’s goals (GAO 2004b). Leadership and support would come in the form of a “national architecture that identifies communications requirements and technical standards, a national database of interoperable communications frequencies, a common nomenclature for those frequencies, and statewide interoperable communications plans” (GAO 2004b).

Acknowledging the gaps in state and local interoperability after the September 11th attacks, the Office of Management and Budget (OMB) established the federal Wireless Public Safety Interoperable Communications Program in 2001, otherwise known as SAFECOM (GAO 2004b). The goal of SAFECOM is to “unify efforts to achieve national wireless communications interoperability” (GAO 2004b). SAFECOM now resides in the Department of Homeland Security’s Office of Interoperability and Compatibility (OIC) and the Office of Emergency

²In testimony before the Subcommittee on National Security, Emerging Threats, International Relations and the Committee on Government Reform, July 20, 2004.

Communications (OEC) due to its limited authority to coordinate federal and state efforts (GAO 2004b).³

Until 2007, the federal government's attempts to develop a national plan were unorganized and lacked a comprehensive strategy to coordinate grant funding or manage statewide interoperability planning. While DHS has made great strides toward their goals,⁴ in many respects their collaborative efforts could be considered coercive. DHS now requires states to implement a Statewide Communications Interoperability Plan (SCIP). "The approval of the SCIPs allows states and territories to receive Public Safety Interoperable Communications Grants (PSIC) and Homeland Security Grant Program (HSGP) funds" (DHS). Since April of 2008, all states and territories have developed and submitted a SCIP.⁵

Practitioner collaboration has become the centerpiece of SAFECOM's strategy for increased state and local collaboration. SAFECOM worked with officials in Virginia to develop its statewide communications plan which included opportunities for state and local input and partnership. DHS asked every state to complete a planning process, similar to the strategy developed in Virginia, which relies on the expertise of local and state level practitioners (SAFECOM 2007). A list of criteria was established for each state to follow while developing

³ The Department of Homeland Security felt that moving SAFECOM to the Office of Interoperability and Compatibility would give the program greater authority to coordinate state and local efforts. The OIC supports SAFECOM's research, development, testing, and evaluation efforts and is housed under the Science and Technology Directorate in DHS. SAFECOM is also supported by the OEC through development of tools meant to guide local and state governments in their efforts to develop interoperability plans. The OEC is managed by the Directorate for National Protection and Programs. (www.safecomprogram.gov/SAFECOM/about/default.htm accessed March 29, 2009).

⁴ GAO-07-301 states that "no process has been established for ensuring that states' grant requests are consistent with statewide plans." The report suggests that until DHS resolves this issue states and local governments will not be able to improve their interoperability capabilities.

⁵ Office of Emergency Communications, in conjunction with its partners at the Department of Commerce's National Telecommunications and Information Administration and the Federal Emergency Management Agency facilitated a two-part peer review process. This included individual peer reviews and peer panel discussions to evaluate the SCIPs as well as the PSIC Investment Justifications (www.dhs.gov/xprepresp/programs/gc_1225902750156.shtm, accessed, March 29, 2009).

their plan (DHS and SAFECOM 2008a; DHS and SAFECOM 2008b). Many of the required criteria will become variables in this research.

Intrastate Collaboration & Interoperability

Intrastate collaboration is discussed in the literature on intergovernmental collaboration as it pertains to the overall relationship between federal, state and local governments (Anderson 1946; Beder 1984; Gray 1985; Huxham and McDonald 1992; Alexander 1995; Linden 2002). These publications suggest that state and local governments confront the same challenges as federal and state governments. While this may be true in many situations, the complex relationship between states and local governments is hard to deny. This relationship has its own distinct history that varies considerably from state to state (Stratton 1989; Chubb 1991; McGuire 1991; Radin 1996; Eisenger 2006; Reddick 2008).

Why is it important to examine intrastate efforts to collaborate separately from federal and state inter-organizational collaboration? First, many authors refer to the relationship between states and local governments as horizontal (Bardach 1998; Mattessich and Monsey 1992; Van de Ven and Walker 1984) but in reality state and local interaction is far from horizontal or equal. States and local governments continuously struggle for power. The power of state legislatures, the tendency of courts to rule in favor of states, coupled with a history of Dillon's Rule, give states extraordinary levels of control over local governments.

Some states also feel that cooperation from local governments must be coerced. They dangle funding or statutory requirements over the heads of local governments in exchange for compliance (Wisconsin 2001). Successful collaborative agreements require states to maintain a level of respect for local governments. States could coerce but that would cause distrust and suspicion. Coerced collaboration will lead to certain failure in the long-term.

Secondly, “homeland security and emergency management take many of the traditional problems of organizational coordination, multiplies them enormously, and vastly raises the stakes for success and failure” (Kettle 2003). There are two main characteristics of homeland security and emergency management that raise the stakes for collaboration: (1) the zero-error-tolerance environment and; (2) the rising levels of responsibility put on emergency management agencies absent any real trade-offs or increases in resources. These two characteristics are unique to emergency management and hinder the ability and desire for individual agencies to collaborate with other agencies.

A fundamental difference between homeland security and other government programs is that there is “zero-error-tolerance” for mistakes (Kettle 2003).⁶ Governments can only guarantee their best efforts in crisis situations; they can train, plan, and budget accordingly but they will never be able to handle every obstacle in every situation. Citizens expect 100% protection in times of crisis (Kettl 2003). One need look no further than the Hurricane Katrina debacle to find evidence of this proposition.

The amount of pressure and responsibility put on emergency management agencies makes it necessary for them to collaborate. Bureaucratic development has historically been the result of a series of trade-offs: for example, getting more of one thing (autonomy) in exchange for less of another (usually funding and resources) (Light 1997). Emergency management operates on a much different system. Agencies are asked to increase our security without sacrificing the existing mission of their organization (Kettl 2003). States and local governments are tasked with

⁶ NASA is an example of this type of organization. While studying zero error tolerance organizations, Frederickson and LaPorte (2002) conclude that complex systems suffer from Type I and Type II errors. Type I errors occur when a system falsely identifies an error and resources are devoted to preventing this false error. Type II errors occur when hazardous situations are not identified. The entire system suffers because resources were not devoted to the incident. Clearly, managers want to minimize Type II errors but successful prevention often means increasing Type I errors. However, the public and many elected officials have low tolerance for Type I errors. The process becomes a vicious cycle when reducing Type I errors translate into additional Type II errors (Kettle 2003, 266).

producing more security during high risk incidents without abandoning their original missions. Coordinating for “important missions that present themselves daily, coupled with emergency situations that occur only sporadically – is a challenge that lies beyond existing organizational theory” (Kettl 2003).

During the September 11th attack, local officials were expected to continue to respond to traffic accidents, fires, and criminal activity. Terrorist attacks introduce three types of uncertainty into the operations of response agencies (Wise and Nader 2002). First, state and local officials must understand the consequences of various weapons. Next, they must plan for a lack of warning time. Finally, they must predict public reactions to various types of hazards (Falkenrath 2000).

Luckily, terrorist attacks and natural disasters occur less often than day to day incidents. It would be inefficient for many state and local governments to create agencies that specifically responded to unexpected events. This is why most state and local governments must expand the mission of their existing agencies during times of crisis (Kettle 2003). Because state and local governments cannot afford to create new agencies they must instead generate greater levels of collaboration amongst themselves to solve high risk problems and ameliorate environmental uncertainty.

State and Local Policy Development

Policy development is the process whereby policy makers choose between a set of alternatives to resolve a public problem (Stewart et al. 2008). When developing a statewide emergency communications policy, states do not have many alternatives. They could buy their own equipment, rely on local governments, or seek federal grant money. To achieve their ultimate goal, 100% interoperable communications in all localities by an expected date, they

must achieve an even greater objective; convince all local and state entities to surrender some of their own power, trust the members of the collaborative group, and work as a team.

Federal officials put the burden directly on states to create a collaborative environment, even though they may already be plagued by a negative relationship with their local governments. The policy development process is a crucial starting point for facilitating and improving or developing a collaborative relationship. In many instances, the success or failure of a policy can be traced back to its original design (Goldsmith and Eggers 2004).

In 2007, the federal government began requiring all states to develop a Statewide Communications Interoperability Plan (SCIP). The SCIP affects all federal, state, local, and non-governmental public safety and emergency management agencies operating in a particular state, from the state police to tribal fire stations and private ambulance services.

The SCIP serves as the test policy in this analysis because its development provides an excellent example of a high stakes policy where state and local governments were required to come together and develop a shared plan. States who did not take advantage of the opportunity that the SCIP provided to strengthen relations with local governments and who were ultimately unable to form a collaborative bond as a result of the SCIP, may need to reevaluate their capacity to collaborate on other policies.

There is a lot at stake in the development of a successful SCIP. As a major piece of public policy, the goal of the SCIP is to coordinate seamless communications among the state's first responders through development of a statewide communications network or by patching or bridging current systems.

The SCIP has specific implications for each individual state. In Washington, the SCIP is a blueprint for the state's first ever wireless communications network. In Louisiana, the SCIP

outlines a plan worth \$200 million to expand, complete, and maintain the state's current wireless network. New York's communications plan, outlined in the SCIP, was worth over \$1 billion. Furthermore, many states have specifically established permanent governing bodies and committees through legislative or executive action to develop and implement the SCIP.

States began writing the SCIPs mid 2007 and turned the final version into DHS by that December. SCIPs range in length from 100 to 900 pages. The development of the SCIP was a monumental undertaking for most states. Prior to its development, only a handful of states had written a similar communications plan. Unfortunately, most states had not ever assessed their communications capabilities, nor had they even begun to formulate a statewide plan to coordinate emergency management efforts.

States as populated as California and states with smaller populations like Arkansas, all see the SCIP as a guide for statewide planning. More than one state described the SCIP as the "glue holding together and guiding various interoperability efforts" (CalSCIP). Once again, the SCIP development process provided an opportunity for states to truly develop a piece of substantial policy with their local governments. Before the development process began, each state expressed the desire to include voices from state, local, tribal, NGOs, and the federal government in the process so that all stakeholders would feel a vested interest in the final policy.

Through the SCIP, states can persuade local entities through incentives, manipulation, or force. The policy tools that states bring to the development process are entirely their prerogative. However, academic literature and practical experience show that some tools are more effective than others at facilitating collaboration. The policy development process is a crucial starting point from which states have the opportunity to persuade local governments to work with them by employing policy tools that encourage collaboration.

Research Questions and Methods

This research seeks to understand why some states are able to form a collaborative bond and develop successful policy while others are not. The overarching theme of collaboration is explored throughout this dissertation through analysis of two focused research questions. These questions, either separately or in conjunction with one another, help us better understand what is necessary for successful collaboration. The first research question will be explored in Chapters 2 and 3 while the second research question will be addressed in Chapter 4.

Research question #1: Do high levels of collaboration during the policy development process increase the likelihood of successful policy outcomes?

The policy development process can be reduced into a series of inputs and outcomes (Easton 1957). The outcome of interoperability policy is clear: to reach the goal of complete and seamless emergency communications for all public safety personnel throughout the state. Governance structures that encourage local participation, development of technology that can be utilized throughout the state, support for local governments in their efforts to acquire funding, and strong leaders who support the project and see it through to fruition, are all policy inputs that have the potential to facilitate collaboration. In this sense, inputs are not simply items that go into a policy to achieve a particular outcome or goal (Birkland 2005); they also serve as a catalyst for gathering support and producing successful outcomes. States may be able to reverse a negative relationship by offering support and the aforementioned resources to cautious local governments.

In Chapters 2 and 3, eight states are evaluated based on their capacity to collaborate via structured case studies. These cases illustrate whether states were able to successfully encourage local buy-in through the use of collaborative inputs, such as decentralized governance structures, technology, funding, training, mutual aid, and leadership.

The cases also take into account “political systems” (Easton 1957) or factors acting against collaborative inputs that may hinder or help the success of the policy. For example, while states may make every effort to act in a collaborative manner, the nature of the state’s relationship with its cities or counties may make collaboration difficult. In these cases, what are states doing to resolve these issues? Collaborative inputs and political systems are discussed more fully in the “Explanation of Terms” portion of Chapter 2.

Research question #2: How does the structure of relationships between organizations during the policy development process contribute to the success or failure of a policy?

Network analysis techniques are utilized to determine exactly who was encouraged to participate in the development process. Data for this chapter was collected from the SCIPs, meeting minutes, and other state and local documents. What local organizations were involved? Was involvement representative of a cross discipline approach? Who truly has the most power over the development process; is it the state or some other gate keeping organization? Policy development by network is discussed more fully in Chapter 4.

Data collection. Data for this analysis was obtained from SCIPs, interviews with state and federal officials, the U.S. Census Bureau, the National Oceanic and Atmospheric Administration (NOAA), the Department of Homeland Security (DHS), the Office of Emergency Communications (OEC), the National Governor’s Association (NGA), meeting minutes, and various state and local documents such as executive orders.

Information regarding each state’s current and long-term communications plans was derived from a content analysis of the SCIP.⁷ SCIPs were acquired directly from state officials

⁷ States are required to follow a set of criteria while completing their SCIPs. They must answer specific questions before the SCIP can be approved. A list of these questions used in this research are available in Appendix B.

or from a search of the internet. States update SCIPs on either a yearly or biannual basis and are not required to distribute the updated reports to federal officials.

Unit of Analysis

No one state has an interoperability system that is identical to another state. Eight states were chosen for development as structured cases studies: Arkansas, California, Illinois, Louisiana, New York, Rhode Island, Texas, and Washington.

State Selection

Eight states were chosen based on their ability to produce generalizable statements about collaboration for interoperability in states across the U.S. These eight states will be developed into comparative case studies and utilized in the analysis in Chapter 2 and 3. The results of the cases also inform the research on network structure and communication in Chapter 4.

This analysis utilizes eight cases based on the replication techniques employed by experimental researchers (Yin 2003). If experimenters have a significant finding based on the results of a single experiment, they will choose to replicate the findings by conducting additional experiments. They may even change the conditions surrounding the first analysis to see if the results hold (Yin 2003). The product will be cases with similar results or contrasting results but for predictable reasons (Yin 2003). The number of replications depends on the certainty that the researcher wants to have regarding their multiple-case results (Yin 2003).

The cases chosen serve a specific purpose within the scope of the research design (Yin, 2003). While random sampling was not necessary, I chose to start my selection of cases by picking from a random sample to ensure the generalizability of the cases selected. Final case selection was based on case study literature which suggests satisfying three criteria for case selection: “Selecting comparable cases, selecting cases that vary on the dependent variable, and

selecting cases across subgroups” (Przeworski and Teune 1970; Lijphart 1975; Kaarbo and Beasley 1999; Yin 2003).

Choosing comparable cases is the basis for Przeworski and Teune’s (1970) “most similar systems design.” The premise being that similar cases are chosen to minimize explanatory variables. If cases are not comparable, we would not know if variation among cases is due to the explanatory variable or because of other differences between cases (Lijphart 1975). The states selected in this analysis are comparable because they were all asked to complete the same task, using the same procedure, to reach a similar outcome (produce a workable SCIP which includes local participation), regardless of where they are located.

This research refers to collaborative inputs, which are the dependent variables in this analysis, and political system indicators or independent variables (political history, state demographics, and risk level). When selecting cases I chose states that varied within both of these factors. States were chosen based on whether they have a positive or negative relationship with their local governments. The state’s population may also create difficulties with collaboration and, therefore, population was included as a deciding factor. States are included that have both high and low terrorism and natural disaster risk levels. States with UASI regions have higher risk levels, as categorized by the federal government. Some states with high risk levels, such as Florida, were not included in the analysis because complete data was not available.

Finally, cases should represent population subgroups. “Researchers should consider choosing cases with an alternative explanation. What the researcher attempts to do is demonstrate that the relationship holds across different subgroups in a population” (Kaarbo and Beasley 1999). Analyzing cases that vary according to geographic region allows for an increase

in generalizability instead of producing results that are only applicable for a certain area. While I argue that location does not indicate whether a state is more or less likely to collaborate, this analysis would be unable to draw conclusions about trends in certain geographic regions if they were not included.⁸ See Table 2-1 for a comparison of each state.

The following four chapters address the topic of collaboration among state and local governments during the policy development process. Chapter 2 introduces a collaborative model where policy inputs are combined with political influences which will hopefully lead to success. In this chapter, I also define the terms that will be utilized during the analysis of each case. Chapter 3 tells the story of how each state developed a policy that they hoped would increase emergency communications in their state. Comparative case studies are grouped into high, medium, and low categories of success and the factors that lead to their success or failure is discussed. Chapter 4 uses network analysis to examine the structure of state and local relationships to determine whether this structure played a role in their success. Finally, Chapter 5 examines the results of both research questions and identifies which analysis better helps us understand why collaboration was strong or weak in a particular state.

⁸ Results suggest that states in certain parts of the country (south, northwest, northeast) do not necessarily adopt similar structures. In fact, states directly next to each other may have vastly different interoperability plans.

CHAPTER 2 COLLABORATION AS A POLICY INPUT

Policy development is the process whereby policy makers choose between a set of alternatives to resolve a public problem (Stewart et al. 2008). Experienced policy makers focus on the goal of the policy, or the expected outcome, and then work backward to create a sound causal model; if I do X then Y will happen.

Research question #1: Do high levels of collaboration during the policy development process increase the likelihood of successful policy outcomes?

With regards to interoperability, the expected outcome is clear in every state: to achieve 100% interoperable communications in all localities by an expected date. The alternatives that states must choose from in order to achieve this goal are not necessarily as simple as whether they should buy their own equipment, rely on local governments, or seek federal grant money. The obvious goal is to achieve interoperable communications, but realizing that goal means achieving an even greater feat, that is, all local and state entities must surrender some of their own power, trust the members of the collaborative group, and work as a team. Because the federal government makes it the state's responsibility to develop a communications plan, the burden falls on the state to create an environment where local and other public safety officials agree to collaborate.

David Easton (1957) famously wrote that inputs keep political actions in motion. Inputs are converted by the political system into outputs which "have consequences both for the system and for the environment in which the system exists." Simply put, inputs are introduced into the policy making process and after being acted upon by the political system itself, these inputs result in an output which will, with any luck, thoroughly address the public problem. By input, I am referring to "things" that go into a policy to achieve a particular policy outcome or goal"

(Birkland 2005). Outputs are ‘things’ that the policy process produces such as laws, regulations, and rules. Outcomes are also frequently referred to in the following chapter. Outcomes are the results of the implementation of a policy (Birkland 2005). Some outcomes are positive and some are negative and result in unforeseen consequences. However, policy makers, and we will assume for our goals, public safety policy makers, always strive for positive outcomes.

Easton (1959) believes that there are two types of inputs: demands and supports. Supports are particularly important when we consider collaboration as an input. The state is supporting local public safety agencies when it acts on their behalf. Supportive behavior may “consist of actions promoting the goals, interests, and actions” of local public safety agencies (Easton 1957). For example, the state might seek out grant funding specifically for local governments to improve their communications capacity or they can offer training to aid local use of a statewide communications network.

Support can be achieved through many means; state governments can persuade, manipulate, or force, local agencies to adopt the statewide plan. Though a state, or any government for that matter, who relies on force alone to implement its policy is not likely to reach its intended outcome. Easton (1957) suggests that a supportive state of mind is necessary for the maintenance of a political system. States showcase the amount of effort that they are willing to put into creating a collaborative environment through the language of the SCIP. From the SCIP, we can get a sense of whether states are truly attempting to include local dialogue in the policy development process.

Rather than focus on whether a policy maker will decide to build a statewide communications network or buy new radio equipment, these inputs are also seen as opportunities to facilitate collaboration. Policy makers must decide what level of collaboration they plan to

devote to the success of the policy. Not only is technology or technical training an input in the traditional sense, states offer technical training to reach the goal of 100% interoperability, but they also serve as a mechanism through which the state can offer support and facilitate collaboration.

Consider two states that equally plan to implement a statewide communications network. Both states require local public safety agencies to purchase equipment that meets federal standards. State A provides technical training throughout the state, teaching local first responders how to use the new equipment and connect to the statewide network. State A stresses the importance of the statewide network and works with local first responders to acquire funding to buy the new equipment. State B assumes that local agencies will provide technical training for their own staff and tells local officials that they must seek out funding on their own. After several months, state officials cannot understand why local governments do not work with them. Unfortunately, this scenario is all too real. Policy makers must choose between alternatives to make collaboration attractive and seamless or make it difficult.

Admittedly, state attempts at collaboration, as well intentioned as they may be, will not always be met with enthusiasm from local governments. The social, historical, and physical environment in the state also influences local willingness to collaborate (Dye 1966). An individual state's "political system" consists of the social, historical, and physical characteristics unique to that state (Dye 1966). The level of collaboration is a function of how well the state's inputs (governance structure, technology, funding, training, and mutual aid agreements) respond to the political systems acting on them.

For purpose of this research, the social, historical, and physical environment interacting with collaborative inputs are political history, risk level, and state demographics. Unfortunately,

local governments with a historical aversion to working with the state will find it difficult to behave differently. As figure 2-1 suggests, both the inputs and political system act on each other to produce outputs and outcomes.

The state's political history with its local governments is not the only factor contributing to the political system schema. Each state's risk level and state demographics, such as city size and racial make-up, all contribute to the success of the collaborative inputs. States with an elevated risk for natural or manmade disasters may be able to overcome a bad relationship with the state. States with large autonomous cities may find it difficult to work with the state regardless of whether each entity has a history of cooperation. With enough foresight, state officials can consider their state's unique political system when deciding which collaborative inputs to stress. Officials must consider the changing environment and adapt to these specific issues.

Explanation of Terms

First, it is important to define "successful collaboration" as it pertains to interoperability. Documents published by DHS suggest that collaboration is successful when local governments have approved the statewide plan and are in the process of implementing the plan in their jurisdiction (DHS 2008c). At that point, local governments are considered to have sufficiently achieved a reasonable level of "buy-in."

DHS acknowledges that achieving buy-in is a process that may take several years to fully attain. They also recognize that American federalism, in its current state, makes it difficult for local governments, who wish to maintain autonomy, to fully buy-in to the statewide plan. Again, DHS believes that the best method for achieving buy-in is to encourage local government participation in all phases of the planning process by implementing a bottom-up approach to policy design (DHS 2008c).

Interestingly, the word compliance is also used in DHS (2009) documents in conjunction with the term local buy-in. DHS encourages states who have difficulty achieving buy-in from their local governments, to develop executive orders mandating compliance, encourage compliance through grant withholding, and passage of legislation that mandates compliance. In other words, if “carrot” type incentives are not effective, states should not be afraid to use the “stick.”¹

In an effort to address gaps in emergency communication at the federal, state, and local levels, Congress requested that the Office of Emergency Communications (OEC), located in DHS, develop a plan that would “align the planning efforts of all levels of government through a common vision and set of goals” (DHS 2008c). The result was the National Emergency Communications Plan (NECP) which “defined a series of goals that establish a minimum level of interoperable communications and deadlines for federal, state, local, and tribal agencies to meet those minimum levels” (DHS 2008c).

The NECP focuses first on measuring interoperable communications in Urban Area Security Initiative Regions (UASI).² UASI regions are large metropolitan areas throughout the United States which are considered “high-risk” areas. There are seven Tier 1 high risk areas which include Los Angeles, Bay Area (CA), National Capital Region, Chicago, Newark (NJ), New York, and Houston (DHS 2008d). The remaining 55 UASIs are set at a Tier 2 threat level.

The goals outlined in the NECP are as follows: (1) “By 2010, 90% of all high-risk urban areas within the Urban Area Security Initiative (UASI) must demonstrate response level

¹ The literature on managerial craftsmanship advises managers to use harsh incentives sparingly. These incentives may be effective at coercing compliance in the short run but will create an environment of mistrust and cause disloyal employees in the long run (Axelrod, 1984; Powell, 1990; Ostrom, 1991).

² DHS uses a risk methodology to determine risk for urban areas who apply to the Homeland Security Grant Program. Metropolitan areas are judged based on “intelligence assessments, population size, density, economic impact, and proximity to national critical infrastructure” (DHS, 2008d).

emergency communications within one hour for routine events involving multiple jurisdictions; (2) By 2011, 75% of non-UASI jurisdictions must demonstrate response within one hour; and, (3) By 2013, 75% of all jurisdictions must demonstrate response within three hours.” An interview with an official in the Office of Emergency Communications revealed that DHS assumes that local governments who demonstrate these response level qualifications by the deadline have sufficiently bought into the statewide plan (2009). This makes sense when we consider the goals of DHS, to ensure that interoperability is achieved.

The federal measure of collaboration may be interesting to readers because, according to the federal government, state and local collaboration is successful when technical goals have been met. As interested observers, we recognize that meeting technical standards does not translate into organizations that work well together or even work together at all.

Participatory measurements are used in the analysis to assess whether states and local governments are collaborating. For example, in some states, participation in the statewide plan is nearly universal; in others, locals barely contribute. Participation is a powerful indicator because it shows that the state was able to gather enough support to encourage involvement. Participation may result from a range of factors including statutory coercion, funding, recent terrorist attacks or natural disasters, and the availability of technology. Case analysis will put each factor into context and make it easy to pinpoint which factors play the greatest role to encourage participation.

Explanation of Collaborative Inputs

Formal governance structure: When an engineer is asked to build an engine, he must first and foremost consider the purpose of the engine so that it can serve the needs of the buyer. Will the engine be used in farm equipment or in a luxury sedan? These considerations greatly influence the type of engine that he will construct. Likewise, when government organizations

are constructed, the goals and purpose of the organization determine its structure and also serve as a guide for assessing organizational effectiveness (Litterer 1969).

States and local governments were required to build a structure for combating emergency communications issues during development of the SCIP. Their current structure is a reflection of the state or local government's needs and goals (Radin 1996). For example, New York City has very different needs than the rest of the State of New York; therefore, New York State's organizational structure reflects a variety of considerations specific to states with large cities.

The GAO conducted four case studies in 2007 on the progress of state and local collaboration. Among those case studies were Florida and New York, who have contrasting organizational structures. Florida's interoperability structure is based on a regional system. Decision making capabilities are supported by a hierarchy of communications committees that include local representatives. Local governments are able to use their existing communications systems and are not obligated to use the statewide system unless they need to interoperate with the state or other local governments (GAO 2007). The system is meeting the needs of all parties as indicated by a 95% participation rate among local governments in Florida (GAO 2007).

In contrast, New York State officials believed that their pre-2007 governance structure was deterring local governments from utilizing the statewide system (NYSCIP 2008). Before 2007, there were several different groups throughout New York that coordinated interoperability. These groups were not connected through a hierarchical or network structure. Individual cities and counties were not willing to relinquish their ability to determine their own interoperability requirements or give up autonomy (GAO 2007). By December 2006 only one agency in New York City and 7 out of 62 counties in New York had decided to partner with the state.

DHS recommends that states employ a decentralized governance structure by including local stakeholders in every step of the decision making process. The literature on decentralized organizational structures argues that decentralization is able to expand the number of potential participants in the implementation process (Lipsky 1971; Hjern et al. 1978). “This approach emphasizes the importance of street level bureaucrats and locally based organizations to the success or otherwise of policy implementation” (Fitz et al. 1994). The decentralized approach takes the emphasis away from control by central authority and places emphasis on interaction at the micro level.

Like decentralized structures, networks are also meant to prevent certain organizations from feeling subordinate to others (O’Toole 1996). The network model follows the assumption that the collaborative group is made up of many government agencies, non-profit and for-profit organizations (Agranoff and McGuire 1998). Successful collaboration in a decentralized or network system requires participants to negotiate and adjust their own behavior in order to attain compromise. However, decentralized and network systems are hindered by a lack of accountability as participants are required to measure their own progress. In addition, decentralized systems typically do not provide a mechanism for quality assurance and feedback (Adler 2001).

The other option available to states is the traditional hierarchical structure which has, until recently, been the most commonly employed organizational structure. Traditional hierarchy assumes that structure will “facilitate implementation” (Wise 2002). Hierarchy is generally seen as an authoritative means to compel large numbers of people to complete a set of tasks (O’Toole and Meier 1999). Each member of the hierarchical relationship has specific roles and their

performance is assured through accountability standards. “Knowledge is treated as a scarce resource and is concentrated at higher levels in the organization” (Adler 2001).

Modern public administration has moved away from hierarchical coordination, which many feel contradicts the principles of federalism, toward a mixture of network and decentralized structures (Chisholm 1989; Elazar 1991; Agranoff and McGuire 1998; Agranoff 2006). Hierarchy is criticized because it is based on the assumption that collaborating organizations can be identified and that their relationships with one another is understood. Furthermore, hierarchy is based on the assumption that mission and task objectives have been agreed upon (Wise 2002). Research has concluded that hierarchical structures are efficient when the collaborative organizations involved are performing routine tasks rather than tasks involving new knowledge and innovation (Adler 2001).

Governance structures and interoperability: The OEC began to evaluate and summarize each state’s governance structure after all 50 states and territories submitted their SCIPs in December of 2007. They found that each state’s structure could generally be sorted into one of four categories. These categories are: (1) the Subject-Specific Approach; (2) the Regional Approach; (3) the Conventional Approach; and, (4) the Leveraged Approach (DHS 2008c).

The Subject-Specific Approach focuses on individual committees that concentrate on issues specific to interoperability such as management, training, technology, and SCIP implementation (DHS 2008c). Committees are composed of experts from around the state who work together to solve a specific problem.

Some states include regional committees in addition to subject-specific committees and working groups. However, the Subject-Specific Approach focuses more on gathering information from the subject-specific committees than collaborating through regional groups

(DHS 2008c). The advantage to this approach is that the subject-specific committees are able to focus on the entire state instead of a particular area, guaranteeing consistency across regions. The reverse logic is also the disadvantage of this structure; subject-specific committees focus on the entire state instead of particular regions which may have specific needs (DHS 2008c). DHS recommends that states who have not already adopted regional committees should consider this option because high levels of practitioner input are necessary for success and involvement will increase local buy-in (DHS 2008c).

The Regional Approach organizes each area of the state into regional committees. Individual regions report directly to the statewide emergency committee and consist of their own subject specific committees and / or working groups (DHS 2008c).

States utilizing the Regional Approach draw on existing planning regions when organizing for interoperability; for example, regions already designated as public safety regions or UASI regions (DHS 2008c). States who use existing regions will be able to organize quickly.

One advantage of the Regional Approach is that it involves a large number of local officials. Regional committees focus on issues plaguing their specific region, making it easier to spot problem areas. However, the focus on regional issues may cause committees to neglect problems pertinent to the entire state. Regional committees may also find it difficult to collaborate with one another (DHS 2008c). Furthermore, states who use this approach must be sure that regional groups focus specifically on interoperability as they will most likely have many other responsibilities. The Conventional Approach does not have regional or subject specific committees. One committee is responsible for planning interoperable services for the entire state.

The hierarchical structure is the greatest disadvantage of the Conventional Approach because it leaves little room for regional and subject-specific input. Buy-in may be difficult to achieve because there is insufficient, and in some states, no participation from local officials. The lack of regional input may also lead to a lack of understanding regarding the needs of individual regions (DHS 2008c).

The Leveraged Approach is structured like a traditional hierarchy but instead of emergency communications advisory committees and working groups, the Leveraged Approach utilizes existing resources in state agencies. Membership on each committee consists of state level agency directors and executives (DHS 2008c).

States that employ the Leveraged Approach are more likely to save time and resources during the planning stage because this organizational structure makes use of existing state agencies and state personnel. However, the state centered hierarchy of the Leveraged Approach leaves no room for local input and involvement. The lack of regional input may lead to confusion over the needs of specific areas. Also, state agency staff may not be able to focus sufficient time and energy on project implementation, especially if their main priority is to focus on law enforcement, fire control, or general emergency management (DHS 2008c).

While local input is encouraged to some degree in each organizational model, save for the Leveraged Approach, it is strikingly clear that each model includes an element of hierarchy. The Subject-Specific Approach takes the form of a network hierarchy, where many different participants from various backgrounds come together to solve subject-specific problems. They form a network of expertise by including participants from across the state. These committees must inevitably report back to the statewide interoperability committee but the governance structure and policy development process encourages participants to take ownership in the plan

and buy-in to the statewide system. The Regional Approach also has the potential to achieve sufficient buy-in through a semi-decentralized hierarchy. Sufficient buy-in is more likely in an environment where regional groups develop information and make critical decisions even though they must report to a statewide emergency committee. Alternatively, some states feel comfortable maintaining a traditional hierarchy and therefore, utilize the Conventional Approach. Other states maintain complete control by employing the Leveraged Approach which is state centered hierarchy and leaves insufficient room for local input.

The literature on top-down management focuses on coordination, clarity of roles, and monitoring procedures (Scharpf 1993; Wise 2002). These factors are also emphasized in the literature on collaboration but they take on a new role in a collaborative relationship where power is horizontal: for example, the relationship between states and local governments (Van de Ven and Walker 1984; Mattessich and Monsey 1992; Bardach 1998). Collaboration becomes even more complex when administrators realize that even decentralized structures will need a central position for coordinating communications and disseminating information (Thomson and Perry 2006).

Adding hierarchy and structure into the governance system does not necessarily mean that the result must be authoritative or constraining (Huxham and McDonald 1992). Collaboration is complex because participation is typically (not always) voluntary and participants are autonomous. These factors limit the effectiveness of traditional hierarchy because success is based on personal relationships and contractual agreements (Huxham and McDonald 1992; O'Toole 1996; Powell 1990). However, creating structures does imply that participants are directly responsible for reaching agreement and following through on decisions made for the group (Gray 1985). Successful collaboration includes participants who are willing to monitor

themselves and each other and are willing to sanction noncompliant partners (Thomson and Perry 2006). Accomplishing these goals requires at least some degree of centralization.

Organizations who decide to collaborate must agree to make joint decisions about the rules that will govern their relationship (Thomson and Perry 2006). Collaborative intergovernmental partners must work collectively to develop sets of rules to decide which organizations or individuals will make decisions, what information must be reported, and how costs and benefits will be distributed to members (Ostrom 1991). In essence, participants must create a centralized structure to reach consensus and accomplish goals (Wood and Gray 1991).

The previous example of Florida's regional organizational structure suggests that creating a hierarchy has become a complicated process. Hierarchy is no longer the centralized pyramid that it once was. While the State of Florida provides the leadership and resources to sustain interoperability they must also respect the autonomy and ideas of local governments if they want to continue successful long term collaborative efforts. The key to getting states and local governments to accomplish joint collaborative goals is to find the right balance between coordination through hierarchy and building relationships; using a mixed method approach to address an age old problem.

In this analysis, utilization of the Regional Approach indicates that highest level of collaboration. The Subject Specific approach is also highly collaborative, as long as the committees include local actors and not simply governing board members. The Leveraged and Traditional approaches indicate that the state is not as willing to collaborate. This assertion leads to the first proposition in the model. A combination hierarchical and network approach will yield greater levels of collaboration. Governance structures should specifically include regional councils and/or subject specific committees with high levels of local participation.

Leadership: Many argue that the most essential component of successful long term collaboration is strong leadership (Wood and Gray 1991; Mattessich and Monsey 1992; Bardach 1998; Linden 2002; Lewis 2001). Virtually every success made through collaborative agreements can be traced back to a group or individual leader. Bardach (1998) writes that success is not a “product of individual will alone but is a product of the interaction between individual will and certain conditions in the surrounding environment.” This statement is profoundly applicable to this research. It suggests that certain conditions must be present for successful collaboration but the influence of leaders, or what he calls “purposive practitioners,” is the final ingredient around which all the conditions come together.

Successful leaders must possess many qualities. Handbooks on excellence in management recommend that leaders have a compelling vision and clear performance goals. Leaders in collaborative agreements ensure that all parties are represented during the decision making process and build mechanisms for feedback and quality assurance into the system (Lewis 2001).

Leaders have the opportunity to create a sense of shared purpose among participants (Linden 2002). Wood and Gray (1991) argue that the main role of the leader is that of a convenor or coordinator. The convenor’s job is to identify the key stakeholders and facilitate conditions which will entice these stakeholders to come to the proverbial table and collaborate. The convenor must have legitimate authority in the eyes of participants (Wood and Gray 1991). They must take an unbiased approach to the problem and carry out their role with fairness so as not to lose credibility among participants (Mattessich and Monsey 1992). The convenor must appreciate the collaborative efforts and goals of the group (Gray 1989; Wood and Gray 1991).

DHS suggests that each state hire a full-time interoperability coordinator (DHS 2008c). A full-time interoperability coordinator can focus exclusively on interoperability issues and can

build close relationships with stakeholders. According to officials at the OEC, a coordinator is most effective if they are unassociated with the governor's office or another state agency.

The National Governor's Association (NGA) (2009b) believes that states with statewide governing bodies or State Interoperability Executive Committees (SIEC) will generate high levels of collaboration. SIECs are typically composed of representatives from state and local agencies. They are created by formal legislation or executive order and in some states provide the only means of gathering data from local governments. It is also possible for members of the SIEC to play a leadership role.

Keeping all of the above information regarding leadership in mind, the second proposition states that a strong figurehead, such as a governor, can create a sense of shared purpose and facilitate collaboration by including all relevant parties.

Technology: Several states have a statewide interoperability network in place and others do not, mainly because of a lack of funding or geographical constraints. Statewide interoperability networks are usually provided by a private company such as Motorola or SunCom and managed by the state SIEC. In many states, local governments are not required to connect to the statewide network unless there is an emergency situation where communication with officials from other jurisdictions is necessary. States with mountainous and less densely populated regions have a difficult time including all localities in a statewide network. In addition, many densely populated regions do not have the necessary funding to buy the correct equipment to connect with the network.

Funding is often one barrier to the creation of a statewide network. As mentioned in Chapter 1, many local governments have old equipment which does not operate on the same frequency as newer equipment. The federal government has designated Project 25 (P25) as the

new standard for design and manufacturing of all new public safety radio equipment. Equipment that is P25 compliant must meet a minimal set of requirements. Organizations with P25 compliant radios can communicate with one another (project25.org). However, at \$4,000 to \$5,000 per radio, it is not possible for all public safety agencies to buy new equipment.

States with an interoperability network have an advantage over those who do not. If the state provides access to an established network then it will be easier for local governments to connect with the state. However, states without networks should not be penalized; as mentioned, statewide networks are not reliable or appropriate in all states. States can make up for a lack of statewide technology by taking action to patch local radios, help local governments swap radios, or by seeking out grant funding for local governments to buy new radio systems.

Based on the information discussed regarding the role of technology in the collaborative process, proposition 3 asserts that states with established statewide technology networks will more easily be able to collaborate. States without statewide networks can facilitate collaboration by finding an alternative method for bridging or patching existing technology.

Funding: The degree of state dominance over fiscal matters plays a significant role in determining local willingness to collaborate (Stephens 1974; Nathan and Lago 1990; Zimmerman 1995). Throughout the past 50 years, local and state funding from the federal government has cycled through increases in federal grants in aid through President Johnson's creative federalism to the "top-sided" federalism of President Nixon, where federal and state spending grew faster than local. Finally, the "fend-for-yourself" federalism of the Reagan era has set the tone for decreases in local aid throughout the 90s and into the present (Nathan and Lago 1990). The current recession has forced states and local governments to reevaluate their

financial situation. In 1990, Pagano wrote that successful state and local collaboration depends on the fiscal health of both entities. In other words, bad fiscal health equals bad relationships.

Classic liberalism suggests that organizations enter into collaborative situations because without collaboration they would not be able to achieve their own goals (Thomson and Perry 2006). Classic liberalism has also been described in terms of dependency theory (Pfeffer and Salancik 1978). Dependent collaborative agreements are formed because certain organizations control critical resources (Wood and Gray 1991). Participating organizations take chances to obtain necessary resources for their own self interest by negotiating with the competing interests and value systems of other organizations. Huxham and McDonald (1992) argue that self interest is necessary for successful collaboration because it provides a means for the organization to justify why they have become part of the collaborative effort.

Bardach (1998) writes that collaboration is only valuable when it produces “better organizational performance or lower costs than can be had without it.” This is absolutely the case with interoperability. Local governments and many states do not have the necessary funding to sustain interoperability plans. States rely on the federal government and local governments rely on the states because they are not eligible to apply for grant funding on their own with the exception of UASI regions.

Stephens (1974) measures financial responsibility by determining where the majority of local expenditures originate. In a centralized state, the funding for the majority of local services are paid for by the state. This funding comes either directly from the state or from federal aid funneled through the state. In a decentralized state, local governments pay for most public services through their own revenue or from grants received directly from the federal government (Stephens 1974).

In the case of interoperability, funding comes from two potential sources, the federal government and the state. Federal funding comes in the form of both grants-in-aid and block grants from DHS. It is usually distributed to the state who then allocates it to local organizations. Completion of the SCIP allows local governments to receive Public Safety Interoperable Communications Grant funding (PSIC) and Homeland Security Grant Program (HSGP) funding. HSGP grant funding is allocated via an 80/20 rule; 80% of the award must go to the local government within 45 days of receipt.³ HSGP funding includes UASI funding and State Homeland Security Program funding to tribal nations. For example, in 2009 Texas received \$60 million in HSGP funding from DHS; \$48 million of which was awarded to local governments. Texas's five UASI regions were awarded \$73.3 million. Texas was not awarded tribal government funding.⁴

PSIC grants include the Interoperable Emergency Communications Grant Program (IECGP). Only State Administrative Agencies (SAA) are eligible to apply for PSIC funding, meaning that local governments must go through the state to ask for funding. The IECGP is awarded to states in order to support goals and plans that align with the SCIP. As an example, Texas was awarded \$3.5 million in IECGP funding.⁵

States are expected to find ways to sustain funding because the federal government will not continue to fund these grants indefinitely (DHS 2008c). Some states have met this challenge either through one-time grants to local governments or designation of an ongoing funding source. Other states have not contributed any funding, and still others have used their funding unwisely.

³ DHS State Contracts and Grant Information. <http://www.dhs.gov/xgovt/grants/>

⁴ Ibid.

⁵ Ibid.

States that adhere to the 80/20 rule are making an effort to fairly distribute funding to local governments. Interestingly, not all states adhere to this rule. Furthermore, some states have developed a comprehensive funding plan while others have not begun the process. Creation of an equitable funding plan will signal to local governments that the state has their best interest in mind and can be trusted to maintain local programs.

We can ascertain whether states are creating a collaborative environment through the funding process by researching whether the state is adhering to the 80/20 rule, by looking at states' commitment to funding projects, or by analyzing the plan that the state has in place to obtain future funding. Each factor is included in this analysis.

DHS (2007) asserts that local governments who lack funding will see the statewide plan as an unfunded mandate and be less likely and unwilling to collaborate. Therefore, proposition 4 states that provide a continuous designated funding source will encourage participation. In other words, states in good fiscal health can expect positive relationships with its local governments.

Statewide training: DHS (2008d) states that increasing opportunities for professional development will not only keep practitioners abreast of current developments but will also give them a chance to learn about the statewide communications plan and interact with state officials. I record whether training opportunities are made available to local practitioners. More importantly, how often is training available and to whom? In some states, training opportunities are only accessible to certain regions and specific types of emergency management personnel.

Proposition 5 states that opportunities for professional development will keep local governments informed, increase chances for networking, and facilitate collaboration.

SOPs and MOUs: When we discuss collaboration among states and local governments to achieve interoperability, communication is the resource that must be shared and distributed

among participants. New York's performance during the 9/11 attacks is an example of the failures associated with non-existent formal communication. For Gray and Wood (1991), formal communication is a means for increasing information among the participants in a collaborative effort. Structures, such as standard operating procedures (SOPs), and memoranda of understanding (MOU) are put into place to facilitate formal communication.

Communication is also facilitated by relationships among participants. Himmelman (1996) describes communication as the willingness of participants to share information for the good of the partnership even if they risk compromising individual autonomy. Members of a successful collaborative group "interact often, update one another, discuss issues openly, and convey necessary information to one another (Mattessich and Monsey 1992).

Are formal relationships (SOP and MOU) present in each state and are they available to local governments statewide? What can these agreements tell us about the likelihood of success between collaborative partners? As such, proposition 6 states that uniform agreements facilitate communication, increasing collaboration.

Statutory authority, sanctions, and incentives: Most statewide interoperability plans are supported by legislation or executive order. Legislative or executive action brings legitimacy to the statewide plan and encourages local governments to accept the plan and begin implementation (NGA 2009b; Henry 2010).

Legislative or executive action also gives governance bodies, such as the SIEC, the "formal authority to act" (Henry 2010). They allow the governance body to negotiate MOUs, seek funding, coordinate statewide efforts, oversee equipment purchases, and reduce redundancy. Governance bodies that are not backed by legislative or executive action could face mistrust which would lead to poor management of the statewide plan.

However, some states use executive orders and legislation as sanctions to force local governments to cooperate with the state. For example, South Carolina is exploring legal options to require local governments to adopt the Palmetto 800 Network. This analysis takes note of which states are using legislative and executive action to strengthen collaborative bonds and which states are using it to coerce (SC SCIP).

Based on the above information, proposition 7 asserts that legislative or executive action brings legitimacy to the plan or governing body and encourages local officials to accept the policy and collaborate.

Explanation of Political Systems

Political History: “Political culture, which varies from one state to another and even within sections of a state, influence the distribution of political power and the exercise of power granted to local units” (Zimmerman 1995).⁶ These characteristics contribute to either a loss or expansion of local authority. The negative impacts of these characteristics make it more difficult to create a collaborative environment (Zimmerman 1995).

While the federal government and states fought over power and authority in an increasingly federally dominant environment, local governments fought their own battles for greater authority and autonomy. Local discretionary authority refers to the level or amount of independent authority that local governments are permitted to exercise over affairs within their jurisdiction. Joseph Zimmerman, a former member of the now defunct U.S. Commission on Intergovernmental Relations, is the last author to write at length on the topic of state and local

⁶ Dr. Joseph Zimmerman was formerly a member of the now defunct U.S. Advisory Commission on Intergovernmental Relations (ACIR). The Commission closed its doors on September 30, 1996 after 37 years in operation because Congress and the Clinton Administration agreed that its services were no longer necessary.

relations.⁷ Zimmerman (1995) writes that any given state or local political power lies somewhere between the “local controlling sphere” on one end, where local officials are completely responsible for certain duties, and the “state controlling sphere,” where state officials are completely responsible. For example, officials at the Department of Homeland Security (DHS) and the General Accountability Office (GAO) assert that communication for homeland security will only be achieved if governance over the statewide plan lies in the shared state/local sphere (GAO 2007; SAFECOM 2008).

To what degree states should preempt local authority has been and remains to be a controversial issue (Zimmerman 1981). During the 19th century, local government officials lobbied the federal government to adopt constitutional protections. They argued that local governments were closer to the people and that increased autonomy would allow citizens greater control over local affairs (Zimmerman 1981; Zimmerman 1995). Unfortunately, the local bid for constitutional protections was unsuccessful. Without constitutional status, state governments imposed the Ultra Vires Rule on local governments, meaning that they could only exercise the powers given to them explicitly (Zimmerman 1995).

⁷ The Advisory Commission on Intergovernmental Relations (ACIR) has published several reports which measure local discretionary authority. The first, written in 1974, looks at the state revenue system as a source of state dominance. States were classified as either dominant, strong, or junior fiscal partners with their local government. This report was revised in 1977 to include indicators of fiscal resources and responsibility over expenditures (Zimmerman 1990). Around that same time, University of Missouri professor G. Ross Stephens was also attempting to document quantifiable measures of state authority (Stephens 1974). Stephens (1974) used government census data to rank states according to three criteria that “reflect the distribution of power between states and local governments.” These criteria are: “1.) financial responsibility; 2.) determination of the level which delivers each of 15 major functional activities; and 3.) distribution of public personnel between levels of governments” (Stephens, 1974). During the 1980s and early 1990s, the ACIR developed additional measures of local discretionary authority, drawing from Stephens’ criteria of finance, function, and personnel, adding structure as the fourth criteria. They criticized Stephens’ use of government census data as too limiting (Zimmerman 1990). Staff analysts at ACIR researched legal documents, state constitutions, statutory provisions, and court decisions to collect their data (Zimmerman 1990). They also collected data through a mail survey sent to local and state officials and state – local relations experts. These mail surveys inquired about the officials’ perception of the local authority possessed and utilized by their government.

In 1868, Judge John Dillon ruled that “municipal corporations owe their origin to, and derive their powers and rights wholly from the legislature. It breathes into them the breath of life, without which they cannot exist” (*City of Clinton vs. Cedar Rapids* 1868). Henceforth, Ultra Vires was known as Dillon’s Rule. Dillon’s Rule was challenged by Michigan Supreme Court Judge, Thomas Cooley in 1871, who wrote that “some rights of local self government are inherent in municipalities” (*People vs. Hurlburt* 1871). However, the constitutionality of Dillon’s Rule was upheld by the U.S. Supreme Court in 1903 (*Atkins vs. Kansas* 1903) and in 1923 (*City of Trenton vs. New Jersey* 1923), stating that “Such corporations are the creatures, mere political subdivisions of the state...They may only exert such powers as are expressly granted to them.”

Local governments were finally legitimized as a “third partner” under Lyndon Johnson in the mid 1960s (Kincaid 1991). During that time, some local governments went directly to the federal government for funding. The federal government began allocating grant money directly to local governments giving them political leverage over states (Kincaid 1991). In 1978, all 50 governors asked Jimmy Carter to stop local governments from bypassing states because they felt that the hierarchical relationship between states and local governments was the most effective means for managing scarce resources (Kincaid 1991). The governors’ plea to Jimmy Carter was successful and local governments have had limited success in reclaiming their partnership status following through the Reagan, Bush, and even Clinton years (Kincaid 1991).

The legal relationship between states and local governments can tell us about the history of their relationship and the likelihood that states will be willing to give local governments increased authority. The ACIR developed measurements in 1980 (Zimmerman 1995) which ranks states according to whether they have given local governments: (1) constitutional grants of

power; (2) statutory grant of power; (3) or they can be considered a Dillon's Rule state.⁸ Case analysis provides the context from which we can draw conclusions regarding whether the historical distribution of power continues to influence state and local relationships.

Interoperability politics: A section on the current political context of communications interoperability helps identify some of the challenges and even some of the positive contributions of political actors in each state.

Risk level: Civic republicanism suggests that organizations entering into collaborative agreements are doing so because of a commitment to a greater purpose. Successful collaborative partners share a similar vision, an agreed upon mission, objectives and strategy (Mattessich and Monsey 1992). Differences between organizations are seen as a basis for "deliberation in order to arrive at mutual understanding, a collective will, trust and sympathy and the implementation of shared preferences" (March and Olsen 1989).

Emergency management agencies are what Thomas (1997) refers to as epistemic communities. Epistemic communities are "like minded networks of professionals whose authoritative claim to consensual knowledge provides them with a unique source of power in the decision making processes" (Thomas 1997). These facts put intrastate collaboration to achieve interoperability on a different level than dependent collaboration, which typically includes organizations with divergent goals and resources. It is quite possible that emergency management organizations agree to collaborate to achieve effective interoperability because of a commitment to protecting their citizens in the event of an emergency, no matter the administrative costs.

⁸ Few states strictly adhere to Dillon's or Home Rule. The ACIR data and the National Association of Counties data will help to understand the context behind the history of the state.

Why do local and state governments decide to collaborate? “Environmental complexity, uncertainty, and turbulence” are just a few of the many obstacles facing organizations (Wood and Gray 1991; Pfeffer and Salancik 1978). Perhaps states create an environment conducive to collaboration to partner with local governments and create a united front against factors which threaten to endanger public safety. Likewise, local governments believe in a central goal or mission - public safety - and depend on the resources of other organizations to meet those goals. All in all, state and local agencies will collaborate because of a dependence on resources, and the underlying motivation to seek those resources is a deep commitment to public safety.

Wise (2002) argues that a state’s risk level and the frequency with which natural or manmade disasters occur, can play a role in how eager states and local governments are to collaborate. For instance, a local government which has recently experienced a terrorist attack or a natural disaster will feel a sense of urgency and is therefore, more receptive to collaboration. An example of this is Hurricane Hugo which hit South Carolina in 1989 (SC SCIP). The devastating aftermath of Hurricane Hugo convinced the State of South Carolina and many of its local governments to work collaboratively and establish the Palmetto 800 Network.

States with a high-risk for natural disasters or terrorist attacks will be more willing to collaborate. The number of Tier 1 and Tier 2 UASI regions in the state is indicative of the risk level designated to each state by the federal government. Regions are designated as UASI areas because they are at greater risk of terrorist attacks or natural disasters. The SCIPs provide information regarding which hazards states are planning for and the frequency with which they have occurred in the past. I also use data collected from the National Hurricane Center, the US Geological Survey and NOAA. Risk level and frequency will play a role in a state’s willingness to collaborate and may encourage greater cooperation.

State demographics: State demographic information provides a clearer picture of the forces influencing local authority in each state. States with many local entities will have difficulty creating a collaborative environment: for example, Illinois with 6,722 local governments versus Hawaii with only four. States with a large number of local units will find it difficult to incorporate input from hundreds of stakeholders and will resort to a traditional hierarchy to maintain control (Zimmerman 1995).

The previous section details the questions that will be examined in the case studies. The reader should expect each case to answer the following questions.

Governance structure: What organizational structure is utilized? Regional Approach, Subject-Specific Approach, Conventional Approach, and Leveraged Approach. **Leadership:** (1) Is there a full time interoperability coordinator; (2) Is the governor or some other individual taking on leadership roles? **Technology:** Is a statewide network available? If not, how is the state helping local governments make connections? **Funding:** (1) Does the state adhere to the 80/20 rule; (2) What federal funding has been allocated and has the state set aside a designated funding source; (3) Is the state developing a plan to continue funding? **Training:** Is technical training available to local governments? To whom and how often? **SOP and MOU:** 1) Are mutually agreed upon formal communications and operational structures in place? **Statutory authority/ incentives:** (1) Is there a legislative or executive order establishing the statewide plan or SIEC; (2) Do states use legislation or executive orders as coercion; (3) What incentives do locals have to work with the state?

Case Analysis

Easton's policy development model is explored in Chapter 3 by utilizing the comparative case method. Stonecash (1996) writes that covariation studies have advanced our knowledge of state politics but they do not explain the political process or policy outcomes. Stonecash (1996)

asserts that the most effective means for understanding policy outcomes is to move from covariation to the comparative case study method.

Alexander George (1979) writes that the comparative case method can best be described as a “method of structured, focused comparison.” The method is “focused because it deals selectively with only certain aspects of the case...and structured because it employs questions to guide the data collection in that case” (George 1979). The case method can be utilized for several different purposes including: (1) simply narrating an event; (2) using a theory to explore and interpret a case; (3) using cases to develop theory; (4) using cases to refine theory, and 5) using cases to test theory (Kaarbo and Beasley 1999). The purpose of the case analysis in this research is to test a theory or confirm the arguments regarding collaboration made in the literature on intergovernmental relations. The cases will be confirming in the sense that they either “support the predictions of the hypotheses or call them into question” (Eckstein 1975).

The advantages of case study research are better understood when we contrast the logic used to employ case studies versus the logic used when developing large n studies (Yin 2003). Large n studies are typically employed when a researcher “wishes to determine the frequency of a particular phenomenon” or make an educated argument about the probability that an event will occur (Yin 2003). Case study research helps us understand the question why or how rather than how much or how frequently a phenomenon occurs. In case study research, the context of the case is the most important consideration.

Qualitative Measurement of Collaborative Success

Pattern matching is a process whereby a theoretical pattern is matched with an observed pattern occurring in the data (Trochim 1989). The theory is supported or rejected based on the extent to which the observed patterns match the theoretical patterns.

The literature on intergovernmental collaboration can be used as a guide to develop a model of the “ideal” collaborative state. The ideal collaborative state uses its governance structure, leadership abilities, standard operating procedures, financial resources, training opportunities, technology, and legislative or executive mandates as policy inputs to increase its political capital and improve local buy-in. Furthermore, this ideal state has the perfect combination of political history, risk factors, and state demographic information acting on the aforementioned policy inputs to increase the likelihood of collaboration between the state and its local governments.⁹ Figure 2-6 outlines the ideal pattern that, according to the literature, each state should adopt to increase the likelihood of successful collaboration.

The written product contains an overview of general background information regarding interoperability in each case state. Finally, the report includes a section that tests and explains each pattern in an attempt to match the hypothesized patterns with observed patterns (Yin 2003).

Each of the eight cases is categorized as either a high, moderate, or low collaborative state. In order for a state to be considered highly collaborative it must have given considerable effort to include the greatest number of collaborative inputs as politically and administratively possible. In a highly collaborate state, either an input or political system or combination of inputs and political systems will be the factor that determine whether that state was successful. For instance, the highly collaborative states in this analysis were able to secure designated, long term funding sources or were faced with a high risk situation that led to collaboration.

Moderately collaborative states satisfy a number of the collaborative input and political system requirements but instead of one of these factors leading to success, as in the case of

⁹ It should be noted that the ideal political state mentioned in this analysis, encompasses factors specific to successful public safety communications policy development and is not a general model for collaboration. The policy inputs necessary for other types of issues, health care, education, transportation, will be slightly different than the inputs discussed here.

highly collaborative states, this factor lead to failure. For example, many states worked diligently to include local governments or create a highly advanced network, but funding or diverse terrain made it impossible for them to achieve 100% success. In other words, complete success is beyond their control and did not result from a lack of effort. Other states included in the moderate category were moderately successful at creating a technological network but were not quite able to garner crucial local buy-in because of some other factor. In the case of one state, organization was difficult because of the sheer number of local government entities.

States which are grouped into the low category committed an action or actions that severely hindered the trust of local governments in that state. Not only was their program unsuccessful but they were absolutely unable and unwilling to make the necessary changes to improve a negative relationship with their local governments.

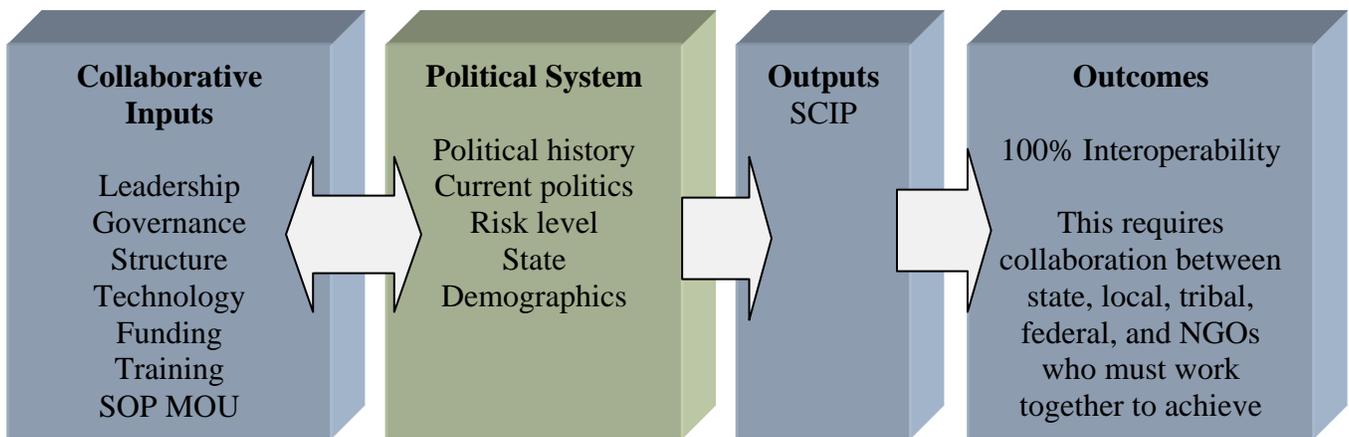


Figure 2-1. Collaboration as a policy input for interoperability policy.

Table 2-1. Case selection.

	Location	Relationship	UASI	Risk Level	Population
Arkansas	South	Strong county	No	Low	Small
California	West	No trust	Yes	High	Large / diverse
Louisiana	South	Strong county	Yes	High / natural disaster	Medium / diverse
Illinois	Midwest	Local autonomy	Yes	High	Large
New York	Northeast	City vs. state	Yes	Very High	Large / diverse
Texas	Southwest	Many counties	Yes	High	Large
Rhode Island	Northeast	Few local govt's	Yes	Very Low	Small
Washington	Northwest	Home rule	Yes	Moderate	Medium

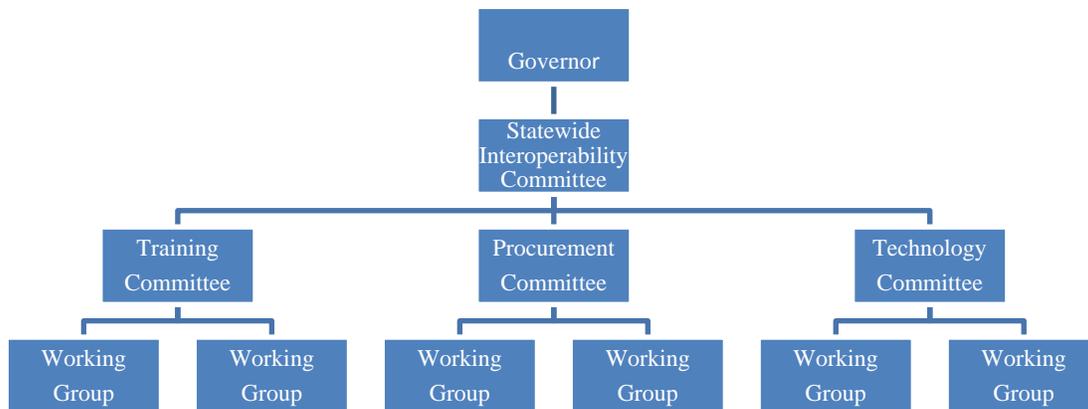


Figure 2-2. Subject-specific organizational structure.

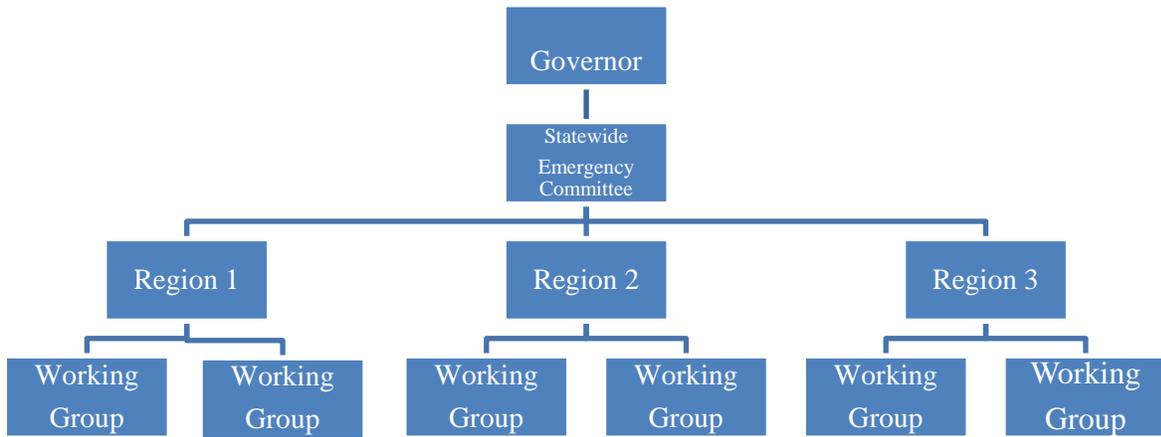


Figure 2-3. Regional governance structure.



Figure 2-4. Conventional organizational structure.

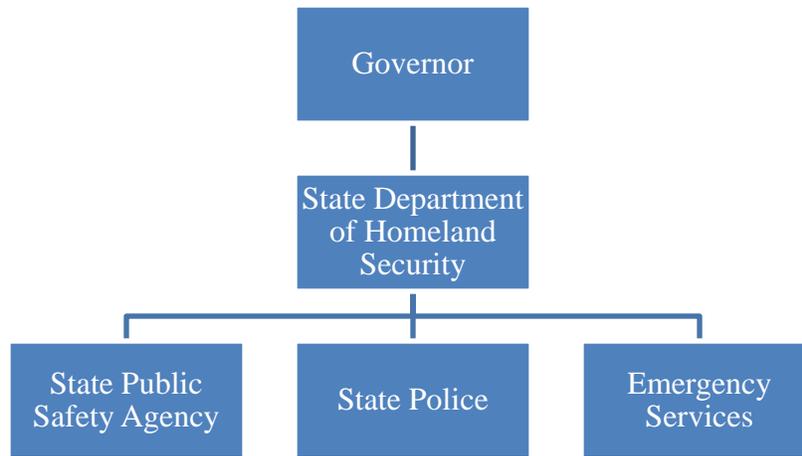


Figure 2-5. Leveraged organizational structure.



Figure 2-6. Policy inputs present in the “ideal” collaborative state.

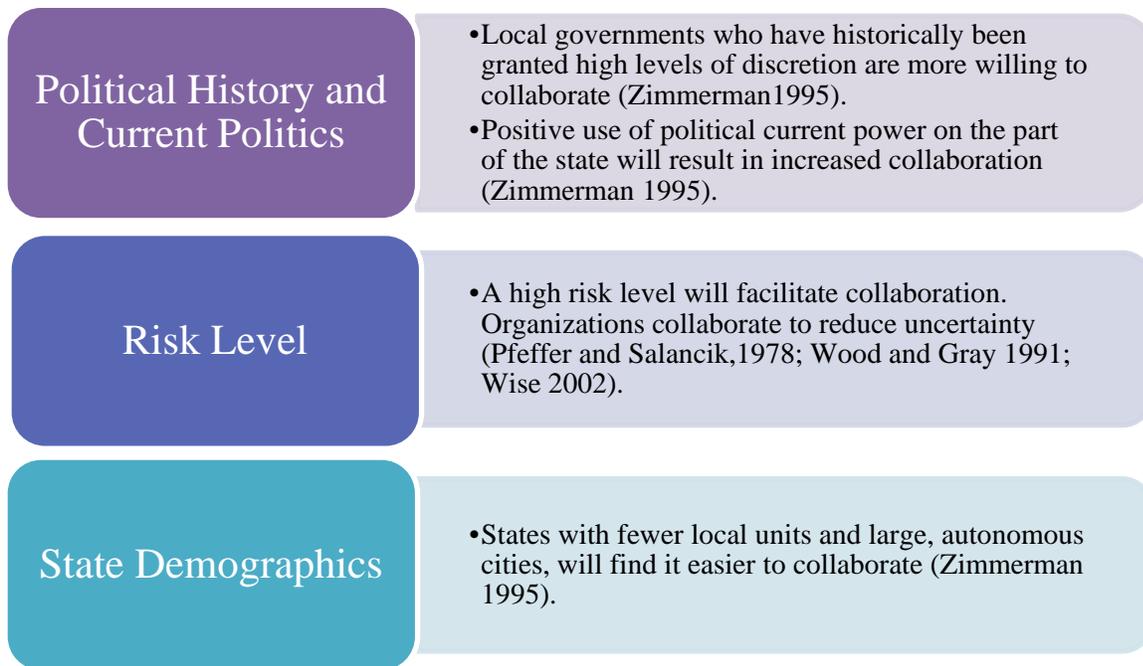


Figure 2-7. Political systems present in the “ideal” collaborative state.

CHAPTER 3 COLLABORATION BY STATE

For the moment we only ask whether the members of the group that we are examining are sufficiently oriented toward each other to want to contribute their collective energies toward pacific settlement of their varying demands.

David Easton 1957

Based on the data, each state has been categorized as either a high, moderate, or low collaborative state. As mentioned in the previous chapter, highly collaborative states include the greatest number of collaborative inputs as politically and administratively possible and have successfully implemented and gathered support for their statewide network.

Moderately collaborative states satisfy a number of the collaborative input and political system requirements but instead of one of these factors leading to success, as in the case of highly collaborative states, one or a number of factors lead to failure. States included in the moderate category were moderately successful at creating a communications network but were not quite able to acquire local buy-in because of some other factor.

States placed into the low category committed an action or actions that severely hindered the trust of local governments. Not only was their program unsuccessful but they were absolutely unable and unwilling to make the necessary changes to improve a negative relationship with their local governments.

States have been ranked according to whether they satisfy the requirements listed above; the order should not be considered arbitrary. Louisiana and Arkansas are considered highly collaborative states. Rhode Island, Texas, California, Illinois, and Washington are considered moderately collaborative states. Finally, New York is a low level collaborative state.

Louisiana

The origin of Louisiana's parishes can be traced back to France in 1712 and then later when the Louisiana territory was passed onto Spain (Rowell 1982). Eleven tribal governments reside in Louisiana, along with 64 parishes, 314 municipal governments, and 45 special districts (Louisiana Municipal Association). In Louisiana, as in many states, the formation of local governments preceded the state government.

All 64 parishes operate under semiautonomous home rule (Rowell 1982); home rule took nearly fifty years to evolve in Louisiana. Before 1974, cities could only perform those responsibilities expressly given to them by the state. This caused anger between the state and city governments and was known to prevent local officials from "reacting positively" to the state and even their community (Engstrom 1982).

The State of Louisiana ratified a new constitution in 1974 which expanded the rights given to local governments with home rule charters. This new constitution gave local governments control over the structure, organizations, powers, and functions necessary for the proper management of their locality as long as these decisions did not preempt state law (Rowell 1982). However, home rule in Louisiana is not absolute. Local governments are forbidden to make any laws that affect school boards, district attorneys, sheriffs, and the clerk of the district court.

Local government oversight was originally reserved for the state legislature. Throughout the years, the complexities and expansion of local governments has limited the legislature's ability to oversee cities and parishes (Rowell 1982). Amendments to the 1974 Constitution resulted in the protection of parish government from state control. The state legislature is now unable to pass laws that apply to only one parish. Furthermore, the legislature cannot force unfunded mandates on local governments without appropriating funds to make up the difference in costs, though this law is rarely followed (Rowell 1982).

In 2001, Louisiana's budget included over \$210 million in funding assistance for local governments (LACIR 2003). Louisiana only receives .3% of its revenue from local governments as opposed to many states, like New York and California, who receive a great deal of funding from local sources.

Louisiana's Homestead property tax exempts 72% of Louisiana homeowners from paying any property taxes and makes it necessary for the state to support local funding (LACIR 2003). Local officials estimate that they lose \$750 million a year because of the exemption, which is far more revenue than the state can provide. Though on average, the state designates \$90 million a year to help local governments with revenue lost to the Homestead Exemption (LACIR 2003).

A 2003 report from the Louisiana Advisory Council on Intergovernmental Relations (LACIR) concluded that state officials should think seriously about finding alternative sources of revenue. The report also states that Louisiana should be mindful of unfunded mandates and decentralize as much as possible to maintain state and local relationships. "Now, more than ever before, it is imperative that state and local governments work cooperatively to secure and develop new partnerships and collaborative efforts if basic and emerging new services required to preserve our quality of life are to be funded" (LACIR 2003).

After Hurricane Katrina, everything changed. Since the hurricane, Louisiana parishes, cities, and the state have been generally successful at collaborating to solve statewide problems (Weitz 2007). Before Katrina, the number of semi-autonomous government units in any one locality made it difficult to collaborate (Baker 1982). The aftermath of Katrina illustrated the necessity of resource sharing and mutual cooperation.

The state has recently experienced tropical cyclones, floods, tornados, ice storms, oil spills, hurricanes and other natural disasters. New Orleans is particularly vulnerable because the city was built 8 feet below sea level (NOAA).

Louisiana's gulf coast is home to the country's only offshore oil terminal which allows supertankers to offload their cargo. Each parish has major pipelines that distribute oil and gas to the rest of the country. This terminal, along with numerous drilling rigs, is at risk of an oil spill, as evidenced by the BP spill in spring of 2010. Louisiana is also home to 2 of the 4 largest refineries in the U.S. Officials in Louisiana are concerned that these oil related infrastructure sites could be targeted by terrorist organizations (LASCIP).

Louisiana is also home to a vulnerable and poor citizenry. While the national average is 12.9%, Louisiana's population is 32.1% African American. Louisiana also has a high number of citizens living below the poverty level; 17.6% whereas the national average is 13.2%. Per capita income is \$16,912 in Louisiana as opposed to \$21,587 nationally (U.S. Census Bureau).

All of these factors have made emergency planning for natural disasters a priority for public safety officials in Louisiana. Furthermore, the massive failures associated with the 2005 hurricanes motivated Louisiana officials to rethink their communications capabilities. Natural disasters have been known to damage or even destroy radio towers, making radio transmissions impossible. The damage to critical infrastructure from the 2005 hurricanes was so extensive that first responders could not even communicate via telephone or cell phone. The aftermath of these hurricanes brought with it the realization that not only were Louisiana's emergency responders operating on disparate radio systems, but that a lack of interagency coordination and cooperation had kept them from responding effectively (Warrick 2005).

State officials from the Governor's Office of Homeland Security and Emergency Planning (GOHSEP) began to rebuild Louisiana's emergency communications system in February of 2006. Their first step was to call together state and local stakeholders to meet and discuss the direction of communications and collaboration in the state. Information gathered at the stakeholder meeting was used to develop the SCIP. At that point, Louisiana had not yet established an SIEC. The 2006 workshop took place over the course of three days and 120 representatives from 59 of the 64 parishes attended (LASCIP).

Officials took several lessons from the stakeholder meeting. First, that their hierarchical emergency management governance structure was not yielding successful results or creating a collaborative environment. Second, they found that successful implementation depended on a high level of commitment from leaders across the state. Finally, institutionalizing new technology would be difficult unless they could find a way to merge the technology into the everyday activities of emergency responders. GOHSEP officials believed that by focusing on technology, acquiring funding, and institutionalizing a statewide structure, they could increase local government buy in and meet their goals (LASCIP).

Interoperable communications was a priority for Governor Kathleen Babineaux Blanco. In an address to the U.S. House Select Committee to Investigate the Preparation for and Response to Hurricane Katrina, Governor Blanco confessed that the hardest lesson that Louisiana officials learned was that a lack of attention paid to interoperable communications before the storm proved to be a deadly mistake. She urged Congress to consider federal funding for this and many other critical issues (Blanco 2005). Governor Blanco also established the SIEC by Executive Order and charged this group and GOHSEP with the development of a statewide communications network (Malykhina and Hoover 2006).

Oddly, the 2006 Legislative Session was not successful for emergency communications. Senate Bill 739, sponsored by Senator Walter Boasso would have statutorily enacted the SIEC and have created an Office of Interoperability whose duty would have been to develop and implement a comprehensive statewide communications plan. This bill was deferred in the House Judiciary Committee and never reconsidered. Similarly, House Bill 450 and House Bill 619 would have statutorily required GOHSEP to develop a statewide network. Neither of these bills made it out of committee (Louisiana Legislature).

One can only speculate that this lack of support from the legislature had something to do with Governor Blanco. Luckily, officials at GOHSEP took the initiative to develop a communications plan on their own. Bobby Jindal became Governor in January of 2008. At that point, development of Louisiana's Wireless Interoperability Network (LWIN) was well underway and Jindal made its completion one of his top priorities (Radio Resource 2010).

The 2008 Louisiana Legislature promptly passed Act 797 which formally established the Office of Interoperability within GOHSEP. The Act also created the Assistant Deputy Director of Interoperability position and formally established the SIEC as a subcommittee under the Unified Command Group, an emergency management governing body whose membership includes high ranking cabinet officials and agency heads.

SIEC Chairman, Brant Mitchell, attributed this success to newly appointed GOHSEP Director Mark Cooper (Mitchell 2009). Cooper had been the former Emergency Coordinator for Los Angeles County California. A Louisiana native and LSU alumni, Cooper called Jindal's transition team and asked if they would consider him for an emergency management position (Office of the Governor). They did indeed and the result was an emergency planning agency with a focus on interoperability.

Whatever the cause, whether it was political or simply a case of excellent timing after a catastrophic natural disaster, both the federal government and the State of Louisiana has financially supported full implementation of LWIN. Since September 11th, Louisiana has allocated over \$76 million to public safety related expenditures. The state has successfully secured funding for the LWIN project as a result of the devastation associated with Hurricane Katrina. Development of LWIN is one of Louisiana's top funding priorities. The state has utilized federal, state and local homeland security grants, Community Oriented Policing Services (COPS) grants, and UASI Region 1 and 2 grants to develop and maintain LWIN.

In 2006, FEMA issued a purchase order to Motorola for \$15.9 million to repair current infrastructure in Katrina affected areas. In December of 2006, the Louisiana Legislature created the Louisiana Interoperable Communications Fund within the Louisiana Treasury to construct, administer, operate, and maintain LWIN. The Louisiana Legislature appropriated \$9.8 million in March 2007 and an additional \$11.5 in June for recurring maintenance and operational costs. In 2008 and 2009 the legislature appropriated \$38 million (\$14 million federal and \$24 state) in funding for LWIN maintenance and expansion. During the 2009 -2010 fiscal year, \$60 million was appropriated to continue implementation (GOHSEP and LASCIP). This funding went towards installation and maintenance costs for LWIN. Another \$8 million was then appropriated to purchase radios and consoles for both state and local use (Mitchell 2009).

The SIEC continues to pursue federal earmarks for communication system enhancements. While successful, LWIN is not inexpensive. LWIN maintenance costs increase whenever the system expands. Maintenance and operations costs in 2008 were \$4.9 million, \$8.3 million in 2009, and \$11.5 million in 2010 (GOHSEP).

Louisiana has fulfilled its obligation to pass 80% of federal PSIC funding to local governments. Some local governments opted for the state to expend funding on their behalf. The state and these local governments developed MOUs to guide the distribution of funding (NTIA).

SmartZone was Louisiana's first statewide communications system and was installed in 1996, well before Hurricane Katrina. SmartZone operated on an 800MHz analog frequency band. After a few years, the 800 MHz frequency band became congested and channels were no longer available in New Orleans, Baton Rouge and surrounding areas. Furthermore, manufacturers stopped producing equipment that functions on an 800MHz frequency (LASCIP).

After Hurricane Katrina, public safety and communications officials in Louisiana began developing LWIN, a 700/800 MHz P25 compliant communications system. The state has installed 83 stationary towers and has access to 5 mobile trailers that can move anywhere in the state and can send out signals to nearby agencies. The state opted for mobile trailers because towers do not survive hurricanes or other natural disasters. These mobile dispatch centers can move about the state without disrupting services and can be powered by natural gas or diesel generators if necessary. About 90% of the state is covered by the network. LWIN currently serves 51,000 users including federal, state, and local personnel. Approximately 1,000 users are added each month (Radio Resource 2010). The technology employed by LWIN is expensive but complete coverage throughout the state is a priority. Areas that have not been integrated into LWIN can continue to use the SmartZone system.

LWIN received positive public attention during the BP Oil Spill. Brant Mitchell, Chairman of the SIEC and GOHSEP Interoperability Coordinator, reached out to Texas and Alabama to create the Gulf Wireless Information Network (Gulf WIN).

The U.S. Coast Guard (USCG) already had access to LWIN and was using the system for everyday operations. Mitchell met with the USCG commander immediately after the DeepWater Horizon explosion in April and offered to include Coast Guard officials. GOHSEP began by adding another zone and installing 16 additional talk groups to the LWIN system. GOHSEP then began patching together other compatible networks to form a regional system. Mississippi and Louisiana formed an agreement which enabled them to patch the Mississippi Wireless Information Network (MSWIN) to LWIN. Next, Travis and Harris counties in Texas (Houston) were asked to participate; both counties use compatible P25 systems but coverage does not overlap. Inclusion of Travis and Harris counties required the installation of a digital interface that was able to connect both counties to LWIN. Motorola supplied the digital interface equipment at no charge and were heavily involved in the expansion project (Radio Resource 2010). Louisiana is currently working with Arkansas to connect AWIN to LWIN.

The State of Louisiana employs a combination regional system accompanied by subject specific committees on the SIEC. The SIEC's purpose, as stated in Act 797, is to "design, construct, and assist in administering and maintaining the statewide plan" for first responders in the event of an emergency, natural disaster, terrorist attack, and day to day operations. Louisiana is also divided into 8 Homeland Security and Emergency Preparedness Regions. A representative from each region is included in the membership of the SIEC.

The SCIP must be updated annually and the SIEC is the "office of records" for SCIP development. The SIEC can recommend additions or deletions to the SCIP but has no authority to make changes to the plan or amend its own charter. Only the Unified Command Group (UCG) can make changes to the SCIP and only the governor can amend the charter (LASCIP).

The SIEC has established advisory committees for specific issues. These subject specific advisory committees include: budget and finance, policy and planning, and technology. The committees assist the entire SIEC in its responsibility to address the needs of local and regional organizations. The SIEC continuously seeks input from state and local partners through updated assessments, annual regional meetings, and planning sessions.

Tribal nations are all located in one parish. They participate in emergency management planning at the parish level. Tribes are invited to participate in regional planning groups and have regional representation on the SIEC. Tribal governments are also represented in service associations such as the Chiefs of Police Association (LASCIP).

Non-governmental organizations (NGOs) with regional offices participate in planning and training at the parish and regional level. Representation on the SIEC is through their regional coordinator. Statewide NGOs participate in planning with GOHSEP and are represented on the SIEC through the GOHSEP director (LASCIP).

The SIEC includes representatives from each of the state's nine homeland security regions, state agencies, tribal authorities, and all first responder disciplines. Officials feel that the SIEC's membership allows it to be representative of all state and local entities.

Emergency communications leadership in Louisiana has been the product of many individuals who have worked to increase coordination and emergency preparedness. Governors Kathleen Blanco and Bobby Jindal developed and supported the governance structures which manage interoperability. Governor Jindal has made funding of LWIN a priority on the state level. Both Governors helped secure federal funding for the project. Louisiana legislators have introduced and passed legislation that substantiated the governance structure and funded LWIN.

Officials at GOHSEP took the initiative to seek a solution to the state's communications and collaboration problems and as a result have been able to implement a successful program. GOHSEP Director Mark Cooper worked successfully with the legislature to gather support (Mitchell 2009). Finally, Brant Mitchell, SIEC Chairman and GOHSEP employee is responsible for forming a collaborative bond with neighboring states and the U.S. Coast Guard in an effort to patch compatible networks with LWIN to form a regional system (Radio Resource 2010).

GOHSEP believes that they can increase local government buy-in by providing frequent training and focusing on technology. They feel that by offering numerous training exercises, they will persuade local governments to implement communications plans that are consistent with state practices. Interestingly, Louisiana does not offer any training exercises that deal specifically with communications, except those offered for new LWIN users; however, communication training is integrated into all state planned exercises (GOHSEP). Louisiana plans to develop and implement more communications specific exercises after a statewide TICP has been developed. This should occur sometime in early 2011.

GOHSEP requires localities to undergo general training when they adopt LWIN. All agencies can request training through the Office of Interoperability. The GOHSEP Office of Interoperability also provides training for regional coordinators who are responsible for training local first responders in their jurisdiction. "GOHSEP [also] provides training upon request to agencies operating on other systems who have not or cannot be integrated into LWIN to ensure" seamless communication between every agency in every jurisdiction (LASCIP).

GOHSEP has developed SOPs for agencies that utilize LWIN. Aside from LWIN, SOPs and MOUs are employed by all levels of government in Louisiana. Each parish has its own SOP and other formal agreements are used between ports, airports, railroads, and other critical

infrastructures. Agencies are required to update their agreements when new events occur or when technology is updated. Louisiana does not have a formal list of all the agreements in operation throughout the state (GOHSEP).

Arkansas

Amendment 55 to the Arkansas Constitution granted home rule to all Arkansas counties. This 1974 amendment gave counties the right to exercise local legislative authority as long as it was not denied by state law. According to Joseph Zimmerman and the Advisory Council on Intergovernmental Relations, Arkansas ranks highly in granting their counties authority over finances, functions, personnel, and structure (Zimmerman 1991). Cities in Arkansas have not been granted home rule. State law specifically “restricts their power of taxation, assessment, borrowing money, and contracting debts, so as to prevent the abuse of such power” (Blair 1988).

Over the years, the taxing, spending, and borrowing restrictions imposed by the state, along with inflation, budget cuts, and the elastic property tax have been motivation for cities and counties to seek greater freedom from the state. Among their most frequent requests are a fixed percentage of the state revenue, more state funds for local governments, automatic state reimbursement for unfunded state mandates, and home rule for cities (Blair 1988). These of course have been denied by state representatives.

In 1976, Governor David Pryor proposed the Arkansas Plan which would have drastically altered the relationship between state and local governments. The plan would have assured local governments (both city and county) a greater level of local autonomy to raise their own revenue through the imposition of a variety of taxes. Pryor states in 1976 that, “We can no longer say that we have all the answers to local problems....[T]he people know their own problems better than we know them in Little Rock. This is why state government should become a partner, and not a parent” (Kincaid 1978).

In exchange for passage of the Arkansas Plan, cities and counties would lose all “turnbacks,” which were a form of block grants given by the state government for local projects. “Since these expenditures would no longer exist in the state budget, and since most local governments would now be asking local voters to raise taxes, the Arkansas Plan called for a permanent one-quarter decrease in the state income tax and a ban on the expansion of the state sales tax” (Kincaid 1978). Though Pryor promised voters greater authority over whether to raise taxes in their locality, the measure failed only two months after it was announced. Citizens preferred the stability of state funding over the instability of local revenue and greater local authority. This effectively ended the short-lived experiment for devolution of power in local and state government in Arkansas.

Arkansas has been fortunate not to have had any major catastrophic events in modern history. However, this has led to public safety officials who are comfortable with day to day activities but uncomfortable about possible large scale events.

The federal government does not classify Arkansas as a high risk terrorism state though they are susceptible to tornados and other natural disasters that have caused property damage and death. Because the largest events in Arkansas are the University of Arkansas Razorback football games, which draw a crowd of between 54,000 and 72,000 fans, public safety officials do not have as many potential terrorist targets to worry about as some of the other states in the analysis.

There are 1,424 local governments in Arkansas. This includes 75 counties, 472 cities, 372 school districts, and 505 special districts (local.arkansas.gov). Native American tribes are not formally represented in Arkansas and they did not participate in SCIP planning sessions (AR SCIP). Arkansas does not have a federally recognized UASI region or city. States who do not

have a UASI must designate a major metropolitan area and Little Rock, with the greatest population in the state (184,564), has been given that distinction (ARSCIP).

The U.S. Census Bureau estimates that Arkansas will have a population of roughly 2.9 million in 2010. Arkansas' population is generally homogenous at 75% white and only 16% black. Arkansas' citizens are significantly poorer than the national average. The percentage of Arkansas' citizens living below the poverty line (17.3%) is higher than the U.S. average (13.2%). The median household income (\$38,820 versus \$52,029) and per capita income (\$16,904 versus \$21,587) is significantly lower than the national average (U.S. Census Bureau).

Arkansas' development of an interoperable communications network was not motivated by any particular event. Although in a May 2004 press conference which announced the development of the Arkansas Wireless Information Network (AWIN), Governor Mike Huckabee stressed the communications issues that the state had experienced in the past during tornados in 1997 and an ice storm in 2000. At that time, emergency responders in the state were using over 200 different radio systems (Govtech).

In January of 2001, Governor Mike Huckabee began to hear troubling accounts of state troopers who were unable to radio anyone outside their county. Huckabee asked the state legislature to fund a study to determine the feasibility of replacing the old state radio system. The result of this report was a plan to expand the new radio system to include emergency responders from all disciplines and across the state. By June of 2004, a steering committee had been formed and plans were underway to implement the AWIN system to enhance the communications network owned by the state police (ARSCIP).

AWIN was developed with support from then Governor Mike Huckabee who stated that the development of the network was Arkansas' homeland security priority (Govtech). It was the

first interoperability network available statewide in any state in the nation. At that time, Michigan had also developed a statewide network but it was only available to state agencies (Upshaw 2006).

Though Governor Huckabee was supportive of AWIN, many state legislators and emergency management officials were opposed to the network, citing its high cost and the infrequency with which it might be used (Schlesing 2009). Adding to the tension, local governments were told by the state to only spend their homeland security grant funding on the acquisition of new radios. City and county officials were “furious.” Local governments wanted more flexibility to use the money to fund priority projects and felt that grant money would be wasted on equipment that they would never use (Upshaw 2006).

The Arkansas Department of Emergency Management (ADEM), which was tasked with development of AWIN, was experiencing pushback from every angle, so they decided to interview city and county leaders and ask them for advice. Eventually, state and local officials agreed on a plan called “Command and Control,” which gives state radios to the heads of law enforcement agencies, county governments, emergency management divisions, hospitals and other groups in all 75 counties. Some federal employees in Arkansas, including FBI and U.S. Marshal Service workers, also have radios for use in emergencies (Upshaw 2006).

Complaints about AWIN subsided once cities and counties began to use the system in emergency situations. The only remaining criticism is the cost of buying new equipment (ARSCIP). Furthermore, a wave of devastating tornados in 2008, floods, and an ice storm in February of 2009 augmented support for AWIN. The ice storm alone required the Arkansas National Guard to purchase 100 new radios – at \$5,000 a piece - in order to communicate. During the ice storm AWIN towers were powered by generators in areas where power was not

available. As a result, the National Guard was able to talk with any police agency in the state and was even connected to local hospitals and ambulance services (Schlesing 2009).

SCIP developers write that while it may not be possible or desirable to include all emergency response personnel on a single system, it is possible to improve their capacity to communicate through better governance, SOPs, and training. Arkansas hopes to achieve their goal of 100% seamless communication by 2017 (ARSCIP).

The Arkansas Department of Emergency Management (ADEM) was primarily responsible for development of the SCIP. However, ADEM knew that implementation of the SCIP would require an abundance of work and a governing body that was representative of all the different interests across the state. Arkansas chose to employ a Subject- Specific Committee approach to developing their governance structure.

In 2007, ADEM sent a draft Executive Order for consideration by Governor Mike Beebe to establish the Arkansas Interoperable Communications Committee (AICC). The AICC is responsible for maintaining the statewide interoperable communications plan and ensuring that a wide variety of local public safety officials are providing recommendations to the Arkansas Interoperable Communications Executive Committee (AICEC) on the progress and development of communications in the state. The AICEC is a smaller committee which is tasked with defining the strategic plan and direction of communications in Arkansas (ARSCIP). While Arkansas began building AWIN in 2004, the AICC and AICEC were created by executive order in 2007 (ARSCIP).

Arkansas officials are satisfied that the governance structure and make-up of the various governing organizations provide a representative and fair voice for practitioners, policy makers, and other stakeholders across the state. Membership on the AICC and AICEC consists of mostly

state agencies and combination state and local professional groups and NGOs. There are not many direct representatives from counties or cities and those who are included serve a dual role as local representative and representative of that region.

ADEM controls state and local use of AWIN and DIS manages AWIN. Furthermore, ADEM coordinated the development of the SCIP, the AICC and the AICEC. After the SCIP was developed, DIS was given the title of lead agency in any future development of the statewide plan. It is safe to say that if you want to provide input regarding interoperability policy in Arkansas, you must ultimately go through ADEM and DIS.

Arkansas is divided into five emergency management regions as represented in Figure 3-1. Each of Arkansas' 75 counties has an Emergency Manager and the state has an Arkansas Department of Emergency Management (ADEM) coordinator in each region (AR DEM).

The AWIN Work Group was created by Act 746 of 2001. Leadership for AWIN has been provided by Governor Mike Huckabee and Penny Rubow who is the AWIN Program Director. Rubow serves as the point of contact and interoperability coordinator for the state and the SCIP, though she does not work on interoperability full time.

In 2006, Governor Mike Huckabee remarked of AWIN: "It is a huge accomplishment [for Arkansas] that will save lives but we realize that the average citizen will probably not be aware of what a huge issue this is, few states have gotten close to what we've done" (Upshaw 2006).

Arkansas began building its award winning AWIN in 2004. AWIN was developed by utilizing existing communications towers and equipment from a previous communications system. Neither state nor local agencies are required to use the network. Public safety agencies who choose to use AWIN can use the system for either everyday events or during emergencies,

thus, maintaining their current communications system. There are no user fees associated with joining AWIN but agencies must purchase P25 radio equipment.

Many local agencies and some state agencies maintain separate systems with varying levels of interoperability with AWIN. There are several reasons for these disparities. Some agencies need special equipment to meet the demands made on them by geography and many small counties and towns are unable to afford P25 compliant systems (ARSCIP).

Before AWIN, interviews conducted during SCIP development revealed that fewer than 10% of Arkansas' first responder agencies had written and signed SOPs with other agencies. AWIN and ADEM currently require agencies to use standard procedures to assess their communications capabilities and to maintain an emergency operations plan. Many of these agreements have not been signed nor are they updated frequently.

However, each organization that joins AWIN must sign a Memorandum of Understanding (MOU). The MOU outlines who has ownership over AWIN and responsibilities for the maintenance of AWIN infrastructure. The MOU includes utility cost responsibilities, tower and shelter access and sharing, and insurance requirements (ARSCIP).

Arkansas funds its communications efforts through federal grant funding and general funds from state and local governments. State officials have successfully fought against AWIN user fees as a source of funding. Arkansas pays for AWIN through revenue bonds, federal homeland security grant money, money from the Law Enforcement Terrorism Prevention Program, and even drivers' license fees (Govtech). In October of 2009, Congress appropriated another \$1.5 million to Arkansas to expand the AWIN system in North Little Rock and Arkansas State University at Beebe (Pryor, 2009).

To date, AWIN has cost over \$200 million to implement. Since 2005, the state has committed over \$66 million to the development and maintenance of AWIN (AWIN.gov). In addition, Arkansas received \$ 11,169,402 in PSIC funds of which \$865,054 was allocated for technology. Arkansas does not adhere to the 80/20 rule for state and local funding distribution. ADEM entered into a Memoranda of Understanding with local counties which allows them to spend the grant funding on behalf of local counties and in accordance with federal rules and state communications plans (NTIA.gov).

The AICC Funding Subcommittee is tasked with identification of sustainable funding streams and has worked with the governor's office and state legislators on this endeavor. The AICC is also responsible for prioritizing funding projects, developing a plan to identify costs, and will make key decisions in the event that AWIN ceases to be funded (ARSCIP).

In the past, local officials have complained that training was not always available and that turnover of personnel who understood the AWIN system was making it difficult to retain knowledge. ADEM now provides training exercises for practitioners who are new to AWIN equipment and operations, any state or local agency that uses AWIN as their primary system and any agency which uses AWIN compatible radios.

However, Arkansas does not provide training specifically for interoperable communications beyond AWIN. Because Arkansas officials feel that training is necessary for all agencies that might be involved in a multi-agency response situation, they have planned to incorporate training and exercises as a requirement for local governments who work with agencies operating on the AWIN system (ARSCIP).

Rhode Island

Rhode Island is only 37 miles wide and 48 miles long. The state is the smallest in the union and encompasses only 1,545 square miles. Rhode Island is one of the most densely

populated and industrialized states. The population of Rhode Island (1 million in total) can be described as 86% urban and 14% rural with no unincorporated land in the entire state (US Census Bureau).

Rhode Island's size contributes to the relationship between the state and its local governments. The state has five counties but no county government. The 39 cities and towns of Rhode Island maintain a centralized government within each community which provides governmental services, emergency management, public works and public safety including police, fire and emergency medical services. Many of the state's operations are also centralized. Rhode Island has one Department of Health and one Fire Services Department, both of which have branch offices that operate at the local level without decentralized county departments. Law enforcement, emergency management agencies, and public works departments do exist at the local level and work closely with statewide offices (RI SCIP).

Rhode Island is considered a low risk state for both terrorist attacks and natural disasters though they have experienced tropical storms, winter weather emergencies, fires, and floods. Their most recent high profile emergency issue was the Station Nightclub Fire. The region surrounding the City of Providence is considered a Tier 2 UASI by the federal government which indicates some level of risk (DHS).

Before 2001, local jurisdictions and public safety agencies in Rhode Island built communications systems that met the individual needs of specific disciplines. After September 11th, state and local officials began to realize that statewide interoperability was critical for the success of emergency management. After several years of planning and collaboration between state and local officials, public safety communications evolved quickly and became a priority among first responders.

Rhode Island's interoperability network is called the Rhode Island Statewide COmmunications Network (RISCON) and is a smaller version of the systems approach that California is currently working toward. The Washington County Interoperable Communications Project, the North Providence Police Department network, and the City of Providence network were all linked to create RISCON. Local governments developed each network, making the system a truly bottom up project.

The Washington County Project was established by Governor Donald Carcieri in 2003 who asked the Narragansett Police Department to lead the effort to improve radio communications in the area. The Narragansett Police Department applied for and was awarded a \$3.1 million grant from the Department of Homeland Security Preparedness and Response Directorate. This network is complete and popular among users. The North Providence network extends into the northern portion of the state and was established by the local police department in 2004. This network has successfully pursued outside funding and continues to develop. The City of Providence network became operational in mid-2008 and includes the downtown and surrounding areas of Providence. Rhode Island also plans to eventually connect their network with the Connecticut and Massachusetts networks.

RISCON was developed through a set of strategies that would utilize existing infrastructure, eliminate reliance on commercial vendors for communication transmissions and create a state owned system. Because existing networks were being patched together, the state decided to use a trunked radio system which makes a group of radio channels available through an electronic system controlled by a computer. When users press the push to talk button on their mobile radio, the computer searches through and selects an available channel, thus linking that locality with others. Several other discipline specific networks exist throughout Rhode Island

but because of the size of the state, the number of networks does not come close to those available throughout states such as California or New York.

Governor Carcieri provided overwhelming support for the RISCOON project. He requested that a representative from his office be included on the Communications Working Group. Carcieri also lobbied the General Assembly and was awarded three full-time positions to support the RISCOON system. Furthermore, local, state, tribal and federal officials have been supportive of RISCOON and the work of RIEMA and the efforts of the Communications Working Group. Numerous letters of support were attached to the final SCIP report (RI SCIP).

However, only a few years into the development of RISCOON, public safety officials were reluctant to buy-in to the system. Membership was typically limited to anyone in areas with full coverage. For some agencies, funding was the main barrier to buy-in; radio equipment can cost between \$4,000 and \$5,000 per unit. To address this concern, the state began to use PSIC grant funding to buy radios for every front line police and fire unit, EMS service providers, as well as colleges and universities. Over 1400 units were purchased by the state (RI SCIP).

RISCOON currently has close to 3000 individual users. In most states, this would not be a large number; however, Rhode Island only has a few thousand fire, police, and EMS practitioners spread throughout the state in total. RISCOON has expanded to include 97% coverage throughout the state. This coverage is reliable, though several tower sites are still under construction (RadioReference). RIEMA conducts statewide exercises to test RISCOON and identify breaks in service (RI SCIP).

The Rhode Island Emergency Management Agency (RIEMA) has been designated as the lead agency for coordination and planning for disasters and emergencies requiring a statewide response. RIEMA was established by Rhode Island General Law 30-15. The Emergency

Management Advisory Council (EMAC), chartered by statute, advises the Governor on preparedness activities. EMAC created the Domestic Preparedness Subcommittee in 1999, which in turn created the Communications Working Group (CWG). The CWG works with RIEMA to address emergency communications issues by bridging diverse radio systems and facilitating cooperation between all levels of government.

The Rhode Island CWG is responsible for SCIP development and general communications planning. The CWG serves as a governing body and oversees the system on a daily basis. They do not have legislative authority over interoperability in the state. The CWG is only allowed advisory authority through the Department of Public Safety (DPS) and EMAC.

With help and advice from the CWG, the Rhode Island State Police own - in part - and manage RISCO. For example, each individual component of RISCO is owned by three different localities. The individual localities continue to own and maintain the system but must sign an MOU which outlines their responsibilities and limitations. The State Police also manage RISCO's daily operations, plan, budget, and staff the system.

The CWG's role is to serve as an Advisory Group for RISCO by developing MOUs and serving as the liaison for new agencies who wish to become a system user. Their goal is to establish four regional centers to oversee mutual aid in a particular region when a major event occurs. Individual agencies would not be able to coordinate mutual aid when radio, telephone, and other alarm dispatching is at its highest levels (RI SCIP).

Statewide SOPs have been developed to govern the use of the RISCO system. All agencies using RISCO must sign an SOP which outlines their roles and responsibilities. Individual agencies are still required to maintain their own individual use policies for other communications networks or emergency management and mutual aid.

Training is offered to public safety agencies as they join RISCO. RISCO officials travel to the agency that needs the training and provide instruction based on the schedules and convenience of that locale. Additionally, training for police, fire, and EMS are conducted jointly and include a team approach. One trainer must be from law enforcement, fire, and EMS to encourage cross disciplinary collaboration. As RISCO has become more popular, the state has taken on a train the trainer approach where local representatives train and send those individuals back to their own jurisdictions to train first responders (RI SCIP).

RISCO has been successful because the CWG has been able to provide the direction, leadership, and motivation necessary to successfully collaborate with local officials. While the governance structure can be described as a traditional hierarchy, the maintenance and development of the statewide technology (RISCO) is a local project which, unlike other states in this analysis, is not managed by a private vendor. Furthermore, the CWG has been able to include state, local, and national officials within its decision making ranks and has played a role in persuading the managers of existing communications systems to merge with one another, creating a “culture of cooperation.” Both state and local officials feel comfortable enough with the group to air their weaknesses and work through them as a group (RI SCIP).

There are some weaknesses that the CWG and RIEMA have noticed. For instance, while EMAC has statutory authority, DPS and the CWG are authorized by other organizations. Officials have noticed that group decisions are not always taken seriously by other agencies across the state. Furthermore, RISCO has primarily been managed on the local level and most of the costs and administrative duties fall on them. This makes other communities reluctant to buy in and makes it difficult for the state to have centralized control over the network (RI SCIP).

Finally, it has been difficult to gather support for state funding. Funding that was promised for support services has not been awarded and RISCON management and maintenance funding has not been a priority for the state legislature (RI SCIP).

As with most states, funding has been a barrier to completion of the project. To date, various federal grants and local dollars totaling approximately \$14.5 million have been invested in RISCON. Rhode Island was awarded \$7.4 million in PSIC grant funding which went entirely toward communications. The state has also fulfilled its obligation to pass 80% of federal funding on to local governments. Many locals have used their federal grant funding to purchase P25 compliant radio systems and the state used federal grant funding to further develop RISCON. For additional funding, the CWG and RIEMA continue to seek out both federal and state funding sources and opportunities (RI SCIP).

Texas

One of the most interesting aspects of state and local relations in Texas centers on the state constitution. The most recent Texas Constitution was drafted in 1875 and was composed of 17 articles. Since then, Texas voters have approved nearly 240 constitutional amendments which have resulted in a disorganized and inconsistent document (Kraemer 2009). Information regarding counties, cities, and special districts are scattered in different places throughout the document. If someone were interested in local government in Texas and wanted to find out more specific information, they would have to look to Article XI on Municipal Corporations, Article V on the Judiciary, Article VIII on Taxation and Revenue, Article XVI on General Provisions, and Article IX on Counties (Jones et al. 1983). In fact, if you wanted information on the structure of county governments, you would need to reference Article V on the Judiciary rather than Article IX on Counties. In Article XI on Municipal Corporations, only three of the ten articles actually relate to municipal governments.

Texas has 254 counties, more than any other state. Texas counties do not have the right to establish home rule charters (Kraemer et al. 2009). However, cities in Texas can operate under either general law or home rule. Cities with a population of under 5,000 can only be chartered under general rule provisions. Cities with greater than 5,000 people may elect to adopt a charter. While over 200 cities in Texas have adopted home rule charters, they are only granted the power to determine their governance structure (Jones et al. 1983).

Texas cities are constitutionally limited in their ability to tax (Kraemer et al., 2009). The Texas Legislature must authorize new revenue sources for cities; they have in the past allowed license fees, permits, fines, and penalties. If these sources of revenue prove insufficient for maintaining local services, cities must resort to selling bonds or borrowing (Jones et al. 1983).

Over the years citizens have advocated for increased county autonomy. The most prevalent requests are to give counties the right to enact ordinances and establish a single chief executive. Senator John Montford attempted to include an amendment that would give counties the power to pass ordinances in 1993. His attempt was not successful (Kraemer et al. 2009).

Texas is the second largest state in area, behind Alaska, and the second largest state in population, behind California. Along with its 254 counties, Texas has 1206 incorporated cities, 3 tribal nations, and 5,300 public safety agencies (Texas Municipal League). With the City of Houston at its center, Harris County is the most populated (3.7 million) and Loving County near El Paso is the least (60). Texas's total population was estimated at 24.78 million in 2009 (US Census Bureau). Furthermore, Texas is becoming increasingly urban, 20 million Texans live in urban areas; 85% of the state's population (Texas Municipal League).

Texas has a Hispanic population that is similar to California. At 36.9%, the Hispanic population in Texas surpasses the national average by 15%. Texas has a Caucasian population

that is much lower than the national average, 46.7% versus 65.1%. Texas is similar to the national average in every other category, including the percentage of people living below the poverty line, 15.8% versus 13.2% nationally (US Census Bureau).

Texas leads the nation in disaster declarations. Since 1953, Texas has declared 228 major disasters. Texas frequently experiences tornados, flash flooding, hurricanes and tropical storms, ice storms, earthquakes, and major heat waves. Some areas in Texas experience persistent drought and wildfire (NOAA).

The number of Tier 1 and Tier 2 UASI Areas have increased over the past two years. Texas has two Tier 1 Urban Areas (Houston and Dallas – Ft. Worth - Arlington) and three Tier II Urban Areas (Austin, El Paso, and San Antonio). The Port of Houston is the largest hub for international commerce in the United States and sixth largest in the world. Additionally, NASA’s Johnson Space Center is located in Houston (TxSCIP).

Large quantities of oil, gas, and other hazardous materials are produced, refined, and stored in Texas (US Energy Information Administration). Storage of these materials frequently results in fires, explosions, and hazardous material leaks. Texas shares its border with Mexico and must frequently deal with organized crime stemming from the war on drugs. Furthermore, the U.S. - Mexican border presents an opportunity for terrorists to cross into the country. Since 2006, 350 suspected Al Qaeda operatives and people whose origin was “terrorism related countries” have attempted to cross the border from Mexico into the U.S. (TxSCIP).

In 2005, Governor Rick Perry made radio interoperability the priority for anyone seeking homeland security grants. He also requested that local governments use a significant amount of their UASI funding for communications improvements (Office of the Governor 2006).

Governor Perry appointed the TxRC as the governing body for the Texas Statewide Communications Interoperability Plan in April of 2007. That same month, Governor Perry announced that the entire state had reached level four interoperable communications. He praised state and local collaborative efforts to make this level of communication possible. Level four radio interoperability allows fire fighters, emergency medical responders, police officers, deputy sheriffs and state troopers to establish radio communications using their own equipment on designated channels (Schneiweiss 2007). At that time, organizations who were not affiliated with fire, EMS, or police were not included.

Governor Rick Perry has been supportive of the TxRC and the SCIP. He attended the Strategic Planning Commission meeting in July of 2007 and addressed the group, reaffirming that radio communications were Texas's first priority when it came to homeland security. At that time, Governor Perry set a 2015 goal for all public safety agencies to have "direct and seamless" communications.

While emergency communications in Texas has seen no shortage of support from its executive, the legislature has not yet been willing to fully support a statewide project. During the 2009 Texas Legislative Session, Representative Warren Chisum sponsored HB 2507 which would legally establish a statewide radio interoperability network and establish an emergency radio infrastructure account. The bill called for an average of \$45 million in state funding from FY 09 until FY 2014 and it established a legal basis for continuous funding of the project. The money would be awarded as grants to the regional councils and state agencies to implement emergency communications plans and purchase equipment. The bill was engrossed in the House but never made it out of committee in the Senate (81 R HB 2507 Engrossed Version Fiscal Note). By the time the bill was introduced in the legislature, the TxRC had already projected

that they would need over \$800 million in combined federal and state funding to fully implement the SCIP (TxRC).

Public safety providers in Texas had hoped for another general fund state allocation of \$120 million in 2009 and 2010 for further development of the projects outlined in the SCIP. This funding was not approved by the legislature and Texas has had to rely on federal funding (81 R HB 2507 Engrossed Version Fiscal Note). The legislature convenes in January of every odd year. The TxRC plans to reintroduce this bill during the 2011 legislative session (TxRC).

State, tribal, federal and local governments are encouraged to save money by sharing infrastructure, facilities, and radio channels. In many cases, regions and local governments are sharing communications vehicles and equipment in areas of the state where it is impossible to install communications infrastructure (TxSCIP).

TxRC members are also working to educate and gain the support of the Texas Legislature. The primary goal is to establish a continuous funding source. The TxRC Funding Working Group is working to identify and win various federal and state grants.

Texas was awarded \$63 million in Public Safety Interoperable Communications (PSIC) grants by the federal government. Approximately 31% of the funding went to UASI regions and \$9 million (7%) went to improving interoperability on the U.S. / Mexico border. The Houston-Galveston UASI receives the most UASI funding followed by Dallas/Ft. Worth, San Antonio, El Paso, and Austin. Texas has fulfilled its obligation to pass 80% of federal PSIC funding to local governments (NTIA).

The most significant local entities, for the purpose of interoperability, are regional council governments. Texas has 24 regional councils comprised of representatives from the various government entities within that region. The councils deliver services and oversee initiatives

decided upon by local government representatives. They are responsible for a number of issues ranging from aging, homeland security, environment, human services, and transportation. Most recently, these regional councils have provided assistance to local governments applying for federal communications grants. Localities have found that their chances of winning a grant are higher when they work collaboratively (Kraemer et al. 2009).

Some regional councils charter an interoperability or homeland security committee made up of local specialists. Others have staffers who focus on those two subjects, and still others use their regular governing board members as communications representatives to the TxRC.

The services that each provide are more or less sophisticated depending on the region. For example, the Houston-Galveston Area Council serves a population of 5.7 million and provides regional planning and other services to its local governments (Houston-Galveston Area Council).

The major interoperability governing body in Texas is the Texas Radio Coalition (TxRC). The TxRC is overseen by the Texas Homeland Security Office. Their primary responsibility is to oversee the development and implementation of communications capabilities throughout the state and to revise the SCIP. The TxRC serves as an advisor to the Governor, the Texas Homeland Security Director, and GDEM. Membership on the TxRC is voluntary, not mandated by state law, and open to any federal, state, local, tribal, and non-profit organizations including critical infrastructure, public utilities, and transportation agencies. The TxRC is divided into three main bodies: the SIEC, a Steering Committee, and 8 subject specific Working Groups (TxRC).

More than 50% of the TxRC's membership comes from local governments and many of these representatives play key leadership roles. Most of the participants in the SCIP development process have now become TxRC members.

Section 421.041 of the Texas Government Code makes the TxRC a permanent member of the Governor's First Responder Advisory Council; giving the organization the legitimacy that it needs to implement the SCIP, although, the TxRC has little power to force local governments to adopt the statewide network or buy P25 compliant equipment.

The TxRC also contains temporary, narrowly chartered working groups formed for specific tasks. Current working groups have been established for governance, capabilities assessment, strategic planning, technology, implementation, SOPs, funding, and evaluation. Membership on these committees consists of TxRC members and representatives from state and local agencies across the state (TxRC).

The Executive Committee (SIEC) is comprised of high level officials with the power to make final decisions regarding interoperability in the state of Texas. This Committee is selected by the Governor's Office and the Texas Homeland Security Director. "The Executive Committee shall: build relationships at the local, state, Tribal and federal levels; leverage resources where appropriate; educate and update representatives from the Governor's Office and appropriate legislative committees, and the public regarding the state's interoperability work; and approve any revisions to the Statewide Communications Interoperability Plan" (TxSCIP).

The Steering Committee has regular monthly meetings and is made up of representatives from across the state who have expertise in communications and technology and who hold leadership positions within their home agency. It is the responsibility of the Steering Committee to develop future goals for public safety communications, establish working groups, build support for statewide interoperability efforts, review and make recommendations for revisions to the SCIP, and provide subject matter experts to assist in reviews of grant applications (TxRC).

Mike Simpson, Wireless Communication Services Manager from the City of Austin, is serving as the interim Statewide Communications Interoperability Coordinator. Texas had planned to fill the position with a permanent coordinator by October of 2009 but have not yet done so.

While Governor Rick Perry has been supportive of interoperability efforts, TxRC Chairman, Peter Collins, Chief Information Officer for the City of Austin, has provided leadership that has guided implementation and has helped the state receive federal grant money. Peter Collins is the spokesman for interoperability in Texas and has briefed Congressional Committees on numerous occasions. In 2008, he briefed a House Panel on interoperability on the U.S. Mexican Border (Collins 2008).

Radio capabilities vary across the entire state of Texas. Because of their experience with natural disasters, some regions have a long history of communicating with one another. For example, Austin and Travis County began a joint project to establish the Regional Radio System in 2000. They were awarded a \$6 million grant in 2005 from the Community Oriented Policing Services Office and the U.S. Department of Justice to complete the system and extend it to Williamson County (Schneiweiss 2007).

Unfortunately, many localities have never communicated with neighboring counties or cities. Most public safety agencies operate on wideband VHF channels. VHF channel use has become insufficient because available radio channels are congested; thus, it is impossible for regional managers to expand coverage. Many metropolitan areas operate on 800 MHz trunking systems. Some of these systems are more than 20 year old and manufacturers no longer carry parts for 800MHz radios. Houston and Dallas – Ft. Worth use several different radio systems

that are very old. Regional managers are concerned that not everyone is trained to use all of the various types of equipment (TxSCIP).

Development of a statewide network in Texas would be expensive and some might argue, impractical. Texas is a large state and much of its land area is sparsely populated and barren. Most rural areas in Texas only have access to landlines and almost no cell phone coverage. Because of these barriers, communications capabilities vary greatly throughout the state. The state's goal is to establish a minimum level of communications through gateways, IP networks, and shared channels in all 24 planning regions. This goal has generally been achieved but a great deal of work is still necessary to improve communications (TxSCIP).

Though most local governments in Texas collaborate based on a regional system, the State of Texas has designated certain frequencies as mutual aid channels. This system is called the Texas Interoperability Channel Plan (Channel Plan) and is open to public safety agencies throughout the state. The channels can only be used in the event of an emergency involving "imminent danger to life or property," pre-planned special events, and joint training exercises. Organizations who use these mutual aid channels must participate in regional communications planning, manage the use of the channels among their employees, and only use the frequency for coordination purposes and not as an everyday system. Approximately 1,560 of the 5,300 public safety agencies in Texas have signed an MOU to participate in the Channel Plan (TxSIEC).

One of TxRCs highest priorities is the improvement of interoperable radio communications on the Texas border. The Texas Border Communications Project includes federal, state, local, and tribal agencies in the five Councils of Government along the Texas border with Mexico. The Project Oversight Team has planned and coordinated an integrated system from El Paso to Brownsville. Texas used its PSIC grant money to fund this project. The entire project is

expected to cost \$150 million for upgrades, build outs, and maintenance over the next 10 years (US Federal News, 2008).

In Texas, specific disciplines must conduct their own training exercises that which must include communications plans. State officials plan to implement a statewide training program for interoperable communications that require public safety organizations to incorporate interoperable communications in their training sessions. The state plans to develop an online multi-disciplinary communications course and will add interoperable communications courses to the curriculum offered by the Governor's Division of Emergency Management (GDEM) at no cost to local, tribal, state agency personnel, and volunteers (TxSCIP).

The TxRC SOP and Governance Working Groups developed a regional template for state and local agencies to use when addressing interoperable communications. Representatives from many disciplines and several government levels played a role in the development of the template. Regional and state agencies are required to participate in a regional SOP or equivalent agreement. The template is posted on the TxRC website (TxRC).

The Texas Statewide Interoperability Channel Plan established a Channel Plan MOU specifically for mutual aid communications. Public safety agencies must also sign this MOU to have access to the Channel Plan. Local governments are not required to partner with the state and are able to continue using their own communications systems if they choose. Additionally, Texas Senate Bill SB 11, enacted in 2007, created a statewide mutual aid agreement which essentially states that all agreements made between organizations are binding during an emergency situation but gives the state the right to respond to local government issues without a written aid agreement. In total, public safety agencies around the state have signed over 1,400 MOU (TxSCIP).

California

Article XI of the California State Constitution gives the state legislature the right to create local governments, define their powers, and set their structure (Hyink and Provost 1998). This article permits counties and cities to develop their own charters while also prescribing exactly what the charters must contain.

Only 12 of the 58 counties have adopted charters as a means for organizing their government structure. Charter counties are considered “home rule” counties and their citizens must vote to amend or approve the charter and strengthen or weaken the powers of the county government (Hyink and Provost 1998). Most cities, like most counties in California, operate under general law. The cost, time, and political battles associated with charter development are just too high a price for both county and city governments (Hyink and Provost 2003).

Home rule was a result of the Progressive Era, where politicians were successfully able to advocate for greater local autonomy and separation between state and local revenue sources (Silva and Barbour 1999). These same Progressives who fought for the 1911 Constitutional Amendments to put referendums and initiatives into motion might have never guessed the unforeseen consequences of such an action. Among voter confusion, high costs, and irresponsible legislation, referendums have changed the relationship between states and local governments in California.

Voter referendums and initiatives were adopted by cities long before they were instituted statewide as a means to amend city charters. Currently, referendums and initiatives are utilized more frequently on the state level and in highly populated cities areas (Hyink and Provost 1998).

However, the referendum that has been most detrimental to state and local relations has an interesting history. While county, city and special district spending began to double between 1967 and 1977, Howard Jarvis, a retired millionaire, took his fight to lower taxes to the people of

California with Proposition 13. Property taxes had increased substantially over the years as a result of the housing boom and inflation. Proposition 13 was meant to lower property taxes but had considerable consequences for the finances of local governments. Before 1977, counties received 40% of their income from property taxes, cities 27%, and school districts more than 50% (Hyink and Provost 1998).

When voters approved Proposition 13, it cut \$7 billion from local property tax collections. Local governments did not immediately feel the effects of Proposition 13. At that time, the state had a large budget surplus and the legislature was able to take the burden off of local governments by giving \$5.9 billion over the course of four years. By 1982, California's surplus had diminished and local government expenditures were increasing due to population growth and inflation (Hyink and Provost 1998). Local governments were forced to find new sources of revenue while also cutting their budgets. The results were taxes and fees on everything from hotels to sewer service to recreational facilities (Silva and Barbour 1999).

Since that time, local governments have become more dependent on the state for resources. By 1995, California was supplying 75% of all school revenue to local governments (Hyink and Provost 1998). This takes a great deal of power away from cities, counties, and other special districts. Furthermore, unfunded mandates have in some cases resulted in county governments allocating 90% of their budget to support state programs (Hyink and Provost 1998). Some counties have had to close their libraries. Lassen County, an area the size of Connecticut, is patrolled by only 13 policemen. A lack of separation between state and local revenue sources and property tax cuts for local governments adds to the tension between the state and local governments. This tension undermines a local sense of authority and jeopardizes the delivery of services (Silva and Barbour 1999).

By 1999, Governor Gray Davis began phasing in reductions of the Vehicle License Fee which served as a property tax on vehicles for local governments. The state government was already seeing a serious deficit because of a reduction in income tax revenue. Many programs were under threat of being cut from the state budget, including local funding and education. As a result of the Vehicle License Fee, in 2004 a coalition of counties, cities, and other interested groups began lobbying for Proposition 1A. This Proposition ensured that the state “could only borrow local property taxes under certain conditions, including repayment within three years. In essence, any reduction in the Vehicle License Fee would require reimbursement to local governments. The legislature also would be barred from reducing the amount of sales tax that local governments collect or from redistributing it among local entities” (Barbour 2007). The measure passed with 85 percent of the popular vote.

While no terrorist attacks have been carried out in California, the state has been targeted for attacks, most notably at Los Angeles International Airport. Officials believe that California’s biggest threats are from floods and landslides, earthquakes, wildfires, drought, storms, civil disturbance, energy shortages, epidemics, and hazardous material spills (NOAA). California is also home to a number of ports, manufacturing plants, nuclear facilities, agricultural production, entertainment, sports, and tourism sites.

California has 5 UASI areas, two Tier 1 cities (Los Angeles and Long Beach and the Bay Area including San Francisco, San Jose, and Oakland), and three Tier 2 UASIs (Anaheim, Sacramento, and San Diego). Each of these areas has received UASI funding from the federal government (DHS).

California is the most populous state in the U.S. which would lead us to believe that collaboration might be difficult. The population of California is estimated to have reached 37.7

million people in 2010 (US Census Bureau). Furthermore, California is home to 8 of the most populated cities in the U.S. These cities are Los Angeles (4 million), San Diego (3 million) San Jose (895,000) San Francisco (809,000), Long Beach (461,000), Fresno (428,000) Sacramento (407,000), and Oakland (404,000) (US Census Bureau).

California has 58 counties and 481 incorporated cities. California has 64 cities with a population of 100,000 or more and 101 cities with a population between 50,000 and 99,000 (California League of Cities). California's 58 counties vary drastically according to size and population. San Bernardino County is the largest in the United States with 20,164 square miles. San Francisco County has an area of only 46 square miles. Los Angeles county is populated with anywhere between 8 and 11 million people, while Alpine County has only 1,000 inhabitants (Hyink and Provost 1998). The diverse terrain and large population are two reasons why coordination between the state and local governments might be difficult.

Though California is a high risk state for natural disasters and terrorist threats, no one moment in California's history spurred the desire to cooperate for the sake of interoperable communications. California officials believe that California's current communications capabilities are a result of diligence and foresight over time. The state has a long history of being a leader in the field of interoperable communications and emergency response, something for which officials are quite proud. California was the first state to designate radio channels for emergency responders and in 1987 their plan for designated radio channels was adopted by the Federal Communications Commission (FCC), (CalSCIP).

California has been developing communication policies to aid in emergency response since the mid 1960s beginning with CLEMARS (California Law Enforcement Mutual Aid Agreement) and then in 1970 when fire services formed an Incident Command System (ICS) to communicate

during wild fires. Also in 1970, the California Emergency Services Act established the Office of Emergency Communications (OEC) to coordinate the response to major disasters. OEC assists local governments with their emergency preparedness response and recovery efforts and helps local governments obtain federal grant money (CalSCIP).

Senate Bill 1841 was signed into law in 1991 by Governor Pete Wilson as a result of the East Bay Hills Fire. This law directed the OEC to establish the Standardized Emergency Management System (SEMS). SEMS creates a multi-agency plan for emergency responders to respond to multiple disasters occurring anywhere in the state. SEMs became the blueprint for the federal government's National Incident Management System (NIMS). NIMS was developed after September 11th as a means to facilitate greater local, state, and federal emergency management coordination. All states are now required to adopt NIMS standards (CalSCIP).

Governors and politicians have been generally supportive of state efforts to improve emergency management. By mid 2002, Governor Gray Davis had signed legislation (AB 2018) requiring the Public Safety Radio Strategic Planning Committee to evaluate public safety wireless communications and recommend the purchase of equipment that meets Project 25 standards. This legislation became known as the Public Safety Communications Act of 2002 which tasked state and local officials with the development of a statewide public safety communications system and charged the Public Safety Radio Planning Committee with facilitating agreements for state agencies to share communications equipment (TIA 2010).

What is curious about the passage of the Public Safety Communications Act is Governor Davis's reaction to the recommendations of the committee one year later. State Senator Bruce McPherson, who chaired the Senate Committee on Anti-Terrorism Policy, sponsored a bill that would have required all state radio purchases to meet Project 25 standards for interoperability.

Davis vetoed the bill, explaining that radios that met federal standards would cost approximately 20 to 30% more than the radios that were currently being used (Thompson 2003). Perhaps his reaction is not surprising considering that Gray Davis was plagued by issues that ran deeper than funding for interoperability, in particular, a mismanaged state budget and a voter recall looming.

Governor Schwarzenegger was slightly more supportive, though the plan to purchase Project 25 radios still has not been allocated funding on the state level. After a failed attempt to raise taxes in 2009, which was shot down by voter referendum, Governor Schwarzenegger asserted that he would never again attempt to raise taxes (Lin 2009). However, public safety has been one of his main priorities since taking office in 2003. During his 2009 attempt to raise taxes, which was shot down by voter referendum, Schwarzenegger proposed a \$48 a year on average fee from property owners which would have raised an estimated \$76 million for emergency services (Lin 2009).

Since taking office, Schwarzenegger helped pass Proposition 1B which allowed the state to sell \$19.9 billion in general obligation bonds to enhance the safety and security of the transportation system, including ports. This provided over \$100 million in funds to improve security in the port system which may or may not have included updating radios and communications standards (Office of the Governor 2010a).

Though Schwarzenegger was not able to secure funding for emergency communications specifically, he remained supportive of emergency initiatives until the end of his governorship. He supported statewide emergency management simulation exercises throughout the state (Office of the Governor 2010a) and also launched the first of its kind Disaster Corps which trains citizens to respond to an emergency (Office of the Governor 2010b).

Interoperability efforts in the state of California are governed by three organizations: the Governor's Office of Emergency Services (OES), the California Statewide Interoperability Executive Committee (CalSIEC), and the Public Safety Radio Strategic Planning Committee (PSRSPC).

California chose to employ a mixed Regional and Subject-Specific approach when developing their governance structure. The Office of Emergency Services is the primary agency charged with coordination and implementation. Government Code §8588.1. makes it the responsibility of the OES to prepare for the next disaster by working with the public and private sector. They are statutorily required to coordinate communications efforts among local, regional, state, tribal, and federal public safety organizations. OES obtains guidance and recommendations from CalSIEC and PSRSPC. CalSIEC works primarily with local governments and PSRSPC works with state agencies to improve their communications capabilities (CalSCIP).

The PSRSPC was chartered by the California Legislature following September 11th. The duties of the PSRSPC are to improve the radio systems of state agencies and to increase interoperability between state agencies and the state and federal government. The establishment of the PSRSPC is codified in California Government Code §8592-8592.7. PSRSPC membership consists of state level emergency management officials including the California Highway Patrol, the Department of Parks and Recreation, the National Guard, and the Department of Justice.

The California SIEC is composed of state, local, and tribal officials. Its membership includes the California Department of Transportation, the Association of Police Chiefs, Emergency Medical Service Administrators Association, the League of California Cities, and the State Association of Counties, just to name a few. CalSIEC is divided into subject specific committees and members of the committees are selected according to their professional

expertise. CalSIEC is also responsible for obtaining information from California's CalSIEC local planning areas which are based on geographic areas affected by radio signal coverage and/or areas that have traditionally assisted each other through mutual aid agreements (CalSCIP).

CalSIEC is not chartered by the legislature; rather, it was developed by the OEC to supervise radio frequency bands and work with local governments. The PSRSPC was chartered directly by the legislature to oversee communications capabilities for state agencies. Direct charters are an excellent option for states because this gives organizations authority to implement projects; many states have chosen not to codify their communications committees (NGA 2010). In California, the organization that works with state agencies is bolstered by legislation and the organization that works with local entities is only chartered by another agency.

In an effort to encourage state and local compliance with the CalSCIP, state officials have recommended that the PSRSPC and CalSIEC lobby legislators in an effort to revise Government Code §8592. Public safety organizations in California are not currently required by law to adopt the recommendations listed in the CalSCIP. Any changes to the code would make this mandatory.

California cites 2017 as their goal for complete interoperability across all jurisdictions and all disciplines (CalSCIP). Regions that currently do not have any form of interoperable communications are serviced through the State Gateway Project. Gateways can connect disparate radio systems with one another regardless of radio frequency. PSRSPC and CalSIEC jointly began the purchase and deployment of mobile gateway units in 2006. Government Code §8588.7 supports the implementation of the State Gateway Project. The gateways are available to public safety agencies upon request and during an emergency.

The State Gateway Project is a short term fix for a statewide problem. Officials knew that they would have to develop an all encompassing system at some point in the future. The State of California is in the process of developing a “System of Systems” (SoS) network which will connect the various local, regional, and discipline specific communications networks throughout the state. California is unable to establish an actual statewide system because radio frequencies cannot travel over the dense terrain in some parts of the state.

The master plan to establish a statewide SoS focuses on connecting existing systems with bridging technology and ensuring that any new equipment purchased throughout the state meets federal P25 standards. All first responder agencies in California - local, state and federal - are statutorily required to purchase P25 compliant equipment (Government Code §8592) when they are awarded state or federal funding. SoS participants buying new radio equipment can choose their own products and their own supplier (CalSCIP).

California officials purposefully developed a plan that encompasses the vast number of systems throughout the state rather than dismantling them and replacing them with a state system. They believe that the key to increasing local buy-in is to respect current systems (CalSCIP). The current communications systems were developed in response to the needs of certain regions or service areas. This patchwork of networks has developed into several very sophisticated systems which have established mutual aid agreements and guidelines governing their use. Officials believe that California’s first responder agencies can easily integrate these systems because of an already established history of mutual aid and local buy-in. Unfortunately, many of these systems were not built to connect to other systems (CalSCIP).

The state chose the SoS approach in part because the lack of funding and shortage of staff make a statewide system impossible. They plan to incrementally move toward a statewide

system by first helping local governments upgrade their current independent systems. They will then link these systems to form the SoS and transition over time to a common system (CalSCIP).

California believes that full implementation of the SoS will take up to ten years. Once local connections are complete, counties and cities will be connected to a regional system. Finally, regional systems will connect to the state. The state will connect to regional systems through technology hubs. Local agencies can control their level of participation in the regional hub without losing autonomy. After statewide implementation is complete, California would like to begin expanding the SoS hubs to other states (CalSCIP).

Unfortunately, California's financial challenges have been a barrier to achieving interoperable communications. OES, the PSRSPC, and CalSIEC have all made and continue to make efforts to lobby state and federal legislators and apply for federal grant money. Each of these agencies are available to help local and state agencies apply for federal funding. Presently, any agencies seeking PSIC grant money must only purchase equipment that is P25 and CalSCIP compliant. This requirement helps prepare agencies for eventual adoption of the SoS (CalSCIP).

The modernization, maintenance, and training operations necessary to sustain the SoS will require a dedicated funding source. Several local and regional governments have begun to designate their own funding sources from their annual budgets to manage their technology. California has fulfilled their obligation to pass 80% of federal PSIC funding to local governments (NTIA).

Interestingly, a 2009 report from the Center for Public Integrity revealed that California's state and local public safety agencies had mismanaged funding and even neglected to report all spending. The Center found that federal communications money had been used to buy televisions, cars, even a shotgun safe and ammunition, none of which are permitted according to

federal rules. In several cases, expensive equipment was bought and never used. As a result of the report, the California Emergency Management Agency (Cal EMA) has stepped up oversight on grants reporting (Schultz 2009).¹

Specific training opportunities for emergency communication are not frequently offered in California. The OHS Training and Exercise Division (OHSTED) manages the state's general first responder training and exercise program, though, not all OHS training exercises focus specifically on interoperability but many include sections which do deal with communications training (CA OHS).

Numerous other state and local agencies sponsor simulations that test first responders' ability to prevent and respond to a terrorist attack or natural disaster. None of these training exercises focus specifically on interoperable communications, but communications plays a role in any response situation and is peripherally tested (CalSCIP).

The California SCIP states that the "key to unlocking the potential of communications interoperability equipment and investments is to establish protocols for how they will be consistently and effectively used." California has a long history of creating and utilizing SOPs which is extremely helpful considering that the state is attempting to develop a system where state, regional, and local systems must integrate.

The Emergency Services Act, and Governor's Executive Order W-9-91, the California Emergency Plan, CALCORD, and FIREMARS are examples of the various mutual aid and standard operating plans utilized in California. Each of these documents set standards governing the use of communications frequency bands during a particular emergency. The expansion of the

¹ The Center's report found that the vast majority of grant recipients did not mismanage funding. Louisiana, West Virginia, Michigan, and Colorado were also cited for mismanagement of funds. Alaska is under considerable scrutiny. They have been awarded more grant funding per person than any other state.

SoS project will require increased use of SOPs among participating agencies. To this end, CalSIEC has assembled an SOP committee to manage use of the SoS.

The California Disaster and Civil Defense Master Mutual Aid Agreement (Government Code §8561) which governs the cities, counties, operational areas, mutual aid regions, and state, has been in operation since 1950. This law requires all state public safety organizations to enter into mutual aid agreements to provide assistance to one another during an emergency. The agreement allows the local jurisdiction the ability to control their resources but requires those not affected by the disaster to volunteer their services to the disadvantaged area.

Illinois

Illinoisan's love for freedom and autonomy has carried over into the state's relationship with local governments (Gove and Nowlan 1996). Illinois has 102 counties and over 1600 incorporated cities and towns. In total, the state of Illinois has over 6,700 local governments, more than any other state in the U.S (Illinois Municipal League). There are so many local governments in Illinois that, for example, the residents of Urbana "control" over 10 different local entities including the city, the township, the county, the school board, the park district, and the forest preserve district. The six county Chicago metropolitan area houses 1,200 local governments who have the power to tax, plan transportation, and influence land use (Gove and Nowlan 1996).

The large number of local governments has made it necessary for the state to focus its attention on providing assistance to local governments. Illinois governors have established state agencies, such as the Department of Local Government Affairs in 1969 and the Department of Commerce and Community Affairs in 1977, to accommodate local government needs and improve local management (Gove and Nowlan, 1996).

Although many of these local governments operate under strict statutes, the state has minimal control over the massive number of local entities which leads some to argue that the sheer number of local governments provides a shield for weak performance, uncoordinated regional planning, and a lack of accountability to citizens. In light of this criticism it is interesting to know that Illinoisans have consistently defended the government structure in the state by failing to support efforts to eliminate or merge government units. Their fondness of the current structure, Gove and Nowlan (1996) argue, is a reflection of their support for local power and autonomy.

Today, two thirds of the state's population is governed by home rule. In most states, home rule gives local governments the power to determine their own government structure, though they are still bound by the state with regards to most other operations. Illinois' local governments use home rule to deal with debt, regulate operations inside their jurisdiction, construct intergovernmental agreements, and levy new taxes (Gove and Nowlan 1996). One group of researchers found that even the Illinois Supreme Court has proven to be pro-home rule. They concluded that the majority of court decisions since 1972 are favorable to home rule (Banovetz and Kelty 1986).

The City of Chicago uses home rule extensively and wields substantial political power in state government. In fact, representatives from Chicago developed the 1970 Constitution, which increased local autonomy. Chicago shares a close working relationship with Cook County where Chicago resides. Communication is generally seamless and there are numerous mutual aid agreements between the two entities (Gove and Nowlan 1996).

All governments, except those with home rule must closely follow state statutes. However, the state rarely ever enforces these laws, provides any oversight, nor do they have any

authority to act. For example, the state requires local governments to send an audit to the State Comptroller but that office has no authority to require a local government to change their financial practices (Gove and Nowlan 1996).

The 1970 Illinois Constitution also added an amendment that encourages intergovernmental agreements. The Northwest Illinois Planning Commission (NIPC) has undergone the most extensive attempt to collaborate across local lines. The NIPC represents the most populated areas in Illinois. Over the years they have attempted to coordinate water, storm water, sewage systems, rail, highway transportation, and many other projects which have been met with limited success. The NIPC's attempts at collaboration are typically met with "turf battles" over power and resources (Gove and Nowlan 1996). One local official remarked that there is a "serious lack of trust between municipalities and counties, local governments and the state, and the city and suburbs" (Gove and Nowlan 1996).

In Illinois, like most states, the need for collaboration between state and local and local and local governments is increasing. The citizens of Illinois have begun to vacate the cities and move to the suburbs which are constantly increasing in size. This does not always leave cities with enough financial assistance to alleviate their social problems, making collaboration critical for maintaining daily operations.

Illinois is considered a high risk state for terrorist attacks, with an estimated population of over 12.9 million (US Census Bureau). Illinois' central location makes it a popular hub for rail, auto, and truck traffic moving toward and through the Midwest. Illinois has over 500 DHS registered critical infrastructure sites including buildings, bridges, and pipelines. Furthermore, Illinois, especially Chicago, serves as a tourist destination boasting multiple large events a year

ranging from sporting to cultural events. Illinois officials wrote the original SCIP in preparation for the 2016 Summer Olympic Games (ILSCIP).

Illinois is home to one Tier 1 UASI area which includes the city of Chicago, Cook, DuPage, and Lake County. Madison and St. Clair counties participate in St. Louis, Missouri UASI tactical exercises.

Like the diverse number of counties and cities in operation in Illinois, the state's interoperability networks are numerous and vary by user and utility. Though diverse, these systems have proven to be effective and Illinois officials claim that while the systems are independent, they are also interrelated (ILSCIP). Illinois is home to an exhaustive number of networks that service every organization from emergency management, police, fire, and health care officials. There are truly too many networks to name them all.

STARCOM 21 is the statewide communications network that officials in Illinois have been developing to link all first responder disciplines. STARCOM is a P25 compliant 700/800 MHz trunked radio system. The system starts with ISPERN (the State Police communications system) at its base and has recently begun to connect other systems across the state, creating a system of systems model similar to California. STARCOM currently covers 98% of Illinois and has a failure rate of less than 5% (STARCOM21). Additionally, STARCOM 21 has a Wikipedia® page and a Facebook® group with 85 “fans.”

The Illinois State Police began developing and implementing the STARCOM 21 system in 2000 under Governor George Ryan. Initial funding for the project, \$25 million, came from the Illinois Fund for Infrastructure, Roads, Schools, and Transit (FIRST) (Office of the Governor 2000). From 2000 until 2003, Ryan was funding the maintenance of STARCOM on an annual

basis (IGNN 2007a). Unfortunately, by that time, Governor Ryan was mired in scandal and chose not to run for reelection.

STARCOM 21 is owned, managed, and maintained by Motorola and use of the system is leased to the state at a cost to state and local agencies of \$53 per radio per month (Motorola.com/starcom). Each radio costs between \$4,000 and \$5,000 to purchase. The state is considering an increase in monthly user fees; this would raise the price to \$76 per radio per month. There is some controversy surrounding the use of Motorola as the system provider. Motorola is headquartered in Illinois and has a fair amount of political power. The increase in per month fees would go towards Motorola's \$207,864,678 contract over the next 10 years (IL Sole Source Justification 2010). The new contract with Motorola has been criticized because it was acquired without a competitive bid from other manufacturers and the current contract only allows STARCOM 21 users to purchase Motorola equipment (Jones 2009).

Governor Rod Blagojevich was generally supportive of efforts to strengthen STARCOM and interoperability in Illinois, though his most definitive efforts were focused on securing college campuses. In the wake of the Virginia Tech tragedy, Blagojevich initiated the Illinois Campus Security Task Force, made up of officials from the Illinois Terrorism Task Force (ITTF) and the Illinois Emergency Management Agency (IEMA), who advised the Governor to focus on emergency communications. By April of 2007, the ITTF had allocated \$300,000 in grants to colleges and universities to purchase P25 compliant STARCOM radios. The initial grant provided enough to purchase 171 radios and Motorola donated an additional 132 radios. Officials from each college were provided with training and were given several STARCOM radios for free from the state (IGNN 2007b).

The Illinois Statewide Interoperability Executive Committee (SIEC), who manages the development and implementation of the SCIP, was established in July of 2006 as a result of an amendment made to the State Police Radio Act (20 ILCS 2615). The SIEC is overseen by the Governor. Membership on the SIEC consists of representatives from the various voice and data communications systems operating in Illinois. The Chicago/ Cook County UASI and St. Louis Urban Area groups are also voting members. All members are responsible for keeping agencies operating in their region abreast of the communications issues faced by the committee and the state (ILSCIP). The SIEC has established subject specific committees: governance, standard operating procedures, technology, training and exercises, and usage (ILSCIP).

The State Police Radio Act of 2006 established the SIEC as an advisory board to the governor and the SCIP governing and implementation body. The SIEC has established a set of bylaws instead of a charter. The bylaw designation limits the power of the SIEC because they derive their authority from the Police Radio Act and the legislature. A charter would allow them to set their own rules and organize based on their own prerogative (ILSCIP).

The choice of bylaw versus charter may or may not adversely affect the authority of the SIEC. On one hand, the Police Radio Act must be changed by the legislature in order to make any substantive changes to the SIEC. On the other, the SIEC is backed by state law, albeit indirectly, and can use this designation as a means for enforcing its authority. At this time the SIEC only requires agencies to align their communications plans with the SCIP. They do not force any agency to adopt a network nor do they require them to purchase new equipment.

Illinois chose to employ a mixed Leveraged and Traditional approach when developing their governance structure. The state utilizes the resources of state agencies and members of the SIEC working group generally originate from state agencies. The governor oversees the SIEC

but officials from the State Police, IEMA, STARCOM 21, the ITTF, and even the State Interoperability Coordinator (SWIC) all serve on this committee. Similarly, members of the ITTF are also members of the SIEC and STARCOM 21.

Membership on the ITTF is more inclusive than the SIEC and consists of over 70 members from various organizations including state, county, city, federal, and non-governmental organizations. Organizations who wish to become members of the ITTF must contact the Chair of the ITTF in writing. The Chair will then seek approval from the governor. Unfortunately, agencies who serve less than 100,000 people are not eligible to apply (ITTF).

It is the ITTF's responsibility to develop a statewide funding strategy, identify grant opportunities, help localities with applications, receive funds, and evaluate and oversee the use of grant money. This organization must also calculate current and future costs of development and maintenance for communications networks in Illinois. The cost of fully implementing the SCIP is estimated at \$200 million (ITTF).

Since 2000, the ITTF and other state and local agencies have successfully pursued millions in federal funding. State funding has been more difficult to obtain. Illinois has contributed \$25 million through the Illinois FIRST project to purchase new radio equipment. The state appropriates money from its general fund annually making the total state contribution over \$27 million, most of which was awarded during Governor Ryan's tenure. This funding is in jeopardy. Governor Pat Quinn has cut the general fund by \$3 billion since taking office in 2009 (Illinois State Government).

While recognizing that state funding is limited, the SIEC continues to seek state appropriations by lobbying the governor and legislators. They have been met with resistance; interoperability is seen as a lower priority than health care, education, and social services. The

SIEC has even proposed a small user fee for telephone subscriber services to expand interoperability networks (ILSCIP). Fortunately, Illinois has fulfilled its obligation to pass 80% of federal PSIC funding to local governments (NTIA).

The ITTF's long-term strategy is to stay abreast of the latest and most cost effective and efficient technology which could be adopted as a means for cutting costs. Some state and local agencies are sharing costs for personnel, maintenance, and operations and they have also been known to share equipment and other resources in an effort to cut costs (Illinois.gov/ittf).

The IEMA manages general preparedness exercises, training sessions, seminars, workshops, tabletop exercises and drills in Illinois. These training opportunities are utilized by a wide variety of participants including first responders, volunteers, elected officials and private companies. Communications interoperability is one of many basic components of these training sessions. Courses are offered at no cost to public safety officials at all levels of government and classes are held at various locations throughout the state (ILSCIP). Furthermore, the IEMA has partnered with the SIEC and the ISP to develop STARCOM 21 training sessions for officials from any discipline. These courses are offered annually (ILSCIP).

At present, numerous discipline specific SOPs exist to coordinate communications procedures. Most municipal, county, and state law enforcement, fire service, emergency medical, and emergency management agencies have established SOPs governing the use of their specific communications networks. STARCOM 21 users must sign an SOP which is administered by the STARCOM 21 Oversight Committee.

All SOPs completed with the purpose of establishing interoperable communications in Illinois are subject to final approval from the SIEC who maintains an SOP database. All SOPs

undergo an annual formal review. The statewide interoperability coordinator must also check the SOPs to be sure that they are compliant with the SCIP (ILSCIP).

Washington

In Washington State, cities and counties have several opportunities to acquire home rule charters. Cities with more than 10,000 residents can adopt home rule charters which gives them autonomy to structure their governments and manage local business. However, state courts in Washington have given the state the ability to nullify or modify parts of home rule charters (Swanson et al. 1985; Clayton et al. 2004).

Another option for cities and counties is the Optional Municipal Code which was established in 1969. Any municipality may drop their current classification and become a code locality. This gives the city or county council the opportunity to exercise all powers given to it by the Washington Constitution and which are not specifically denied by law (Swanson et al. 1985). This option has been adopted by the majority of municipalities in Washington (Clayton et al. 2004)

Unlike other states where home rule is merely symbolic, the State of Washington has continued to increase the level of responsibility given to counties. Counties have been allowed to establish home rule charters since 1948. Six of the 39 counties have taken advantage of home rule and have broken away from the state mandated three-person governing board (Swanson et al. 1985; MRSCW 2010).

Though only a few counties have decided to adopt home rule charters, the state has been encouraging counties to embrace growth through construction and infrastructure projects (Clayton et al. 2004). The state has also granted counties greater discretion to oversee their operations, governance structure, and funding (Doherty 2010).

Washington State's population is 6,664,195, according to the U.S. Census Bureau. The State of Washington consists of 39 counties and 205 cities (National League of Cities). Over 50% of Washington State's population lives in one of its 281 municipalities. Whether large or small, cities in Washington are growing rapidly.

Washington's Caucasian population is greater than the national average; 74.6% versus 65.1%. Its African American population is much lower than the national average 3.9% versus 12.9%. Of all the states in this analysis, only Rhode Island and Washington have fewer citizens below the poverty line than the national average, only 11.3% of Washingtonians. The state's median household and per capita income are above the national average (US Census Bureau).

Washington began the SCIP development process while the state was planning for the Vancouver Winter Olympics. Officials saw this as a possible terrorist target, making interoperable communications a priority (WASCIP).

Officials in Washington have developed a long list of possible risks. Topping the list are the state's ports. There are 76 port districts in the state and the largest fleet of ferries in the nation (WASCIP). Washington is the nation's leading producer of hydroelectricity. Seventy three percent of the state's electricity comes from this source. Washington's high risk critical infrastructure includes hydroelectric power plants, chemical and hazardous materials manufacturers, industrial defense bases, and defense contractors.

Defense contractors, such as Lockheed Martin, manufacture aircraft and aircraft parts in Washington. The state houses major Army, Navy, Air Force, Coast Guard, and National Guard facilities which are meant to support military operations overseas. Finally, Washington State is home to numerous federal facilities including the FEMA Region X Headquarters, the Federal

Reserve Regional Headquarters, federal courthouses, and Federal Aviation Administration (FAA) facilities (WASCIP).

Washington State experiences more than 1,000 earthquakes each year. Most are too small to notice but some cause damage and injuries (NOAA). The most recent earthquake was a magnitude 6.8 in February of 2001 which killed one person and injured 700. Rivers in Washington flood every two to five years, causing injuries and structural damage. The Pacific Coast, Strait of Juan de Fuca, Puget Sound, and large lakes are all at risk from tsunamis generated by earthquakes, landslides, and underwater volcanic eruptions. Finally, Washington has five active volcanoes. Mt. St. Helens has been erupting since 2004. Its violent eruption in 1980 was its most destructive. Mount Baker, Mount Rainer, Glacier Peak, and Mount Adams are all high risk volcanoes due to their proximity to large populations (US Geological Survey).

Washington State has two Tier 2 UASI Areas. These include the City of Seattle and Clark and Multnomah Counties which are part of the Portland / Vancouver UASI. Washington State is also divided into nine Regional Homeland Security Coordination Districts. Each region is made up of several counties, cities, towns, or tribal nations.

Little information could be found regarding former Governor Gary Locke's involvement with communications systems in Washington, though he did sign the SIEC into law in 2003. Interestingly, Governor Locke is now the Secretary of Commerce and one of his latest projects has been to award \$380.7 million in grant funding to local governments who are building wireless broadband networks for public safety (Jackson 2010). Neither Seattle, nor any jurisdiction in the State of Washington received funding.

Current Governor Christine Gregoire has also been relatively uninvolved with public safety communications in Washington. She has been supportive of interoperability efforts and

has sent out invitations to state and local agencies to participate in public safety communications summits, though she does not attend. In the invitations, she stresses the importance of collaboration and enhanced technology (Summit Invitation 2007).

At the SIEC's suggestion, Governor Gregoire included a proposal in the 2007 Budget to take \$10 million from the state's 911 Fund to build the communications network outlined in the SCIP. Unfortunately, money had already been taken from that account to pay for other projects in recent years and state legislators and local government officials worked together to remove that item from the budget (Lincoln County Commissioners 2007).

Perhaps the most politically significant battles for interoperability have occurred on the local level. SIEC focus group and interview transcripts with local representatives reveal that regulations, turf battles, and a lack of trust make it difficult for locals to trust the state. In fact, the lack of consensus between states and local governments make it difficult to implement a statewide response and governance plan.

The SIEC also found that first responders were uncomfortable sharing resources with other agencies. Inconsistent radio codes and a lack of common nomenclature among first responder personnel make the act of sharing equipment very difficult. A lack of standard procedures and mutual aid agreements make some first responders uncomfortable using another agency's channels.

On one hand, agencies were open to the creation of technical and operational standards, but they were worried that these standards would lead to unfunded mandates. Local officials were particularly afraid that the state would require them to buy P25 compliant radios. Local agencies argued that they barely had enough funding to provide for their own personnel and operations. They also worried about inconsistent grant funding which does not provide a dependable funding

source. Furthermore, agencies located near the Canadian border had concerns that they would have to comply with both the state and Canada's standards (SIEC).

The Washington State Interoperability Executive Committee (SIEC) was established by House Bill 1271 in April of 2003 as a subcommittee of the state Information Services Board (ISB). In 2007, the SIEC was directed by the ISB to develop and oversee the implementation of the SCIP. Meetings are advertised to public safety officials and the general public and all interested parties are encouraged to attend (ISB).

In many respects the Washington Legislature was ahead of its time. The ISB was created by the legislature in 1987. The duties of the ISB are to plan for, acquire, and develop policy and standards for governing information technology throughout the state. The legislature believed that if the state were to invest in communications technology that they would need to create an organization that could collaborate with local governments and manage the radio spectrum. Their overall goal was to save money and they felt that the most efficient way to reach this goal was to pool resources and collaborate (Revised Code of Washington 43.105.041).

The SIEC is responsible for managing the use of wireless communications throughout the state and coordinating local response to major events. Because of its membership, the SIEC is also responsible for fostering collaboration and cooperation between state, local, and federal agencies. The SIEC can develop policies and make recommendations to the ISB regarding emergency communications systems but they are not permitted to change the SCIP without approval from the ISB. The SIEC also manages the licensing and use of state radio frequencies, coordinates the purchase of state radio equipment, seeks grant funding for communications projects, and promotes state and federal standards (SIEC).

The Washington SIEC was developed through legislative action but serves only as a subcommittee of the Information Services Board. The ISB is in a position to assert greater levels of authority, but this organization has not been granted statutory power to force local governments to adopt their plan or even purchase P25 compliant equipment (WASCIP).

Local governments have the power to determine the type of communications equipment in their jurisdictions. Washington officials stress that the SIEC and the interoperable governance structure was not meant to infringe on the rights of local governments to develop their own governance mechanisms and determine which interoperable solutions are right for them. In fact, of the seven “guiding management principals” listed in the SIEC charter, five incorporate sharing of services and open standards and fair practices for local governments (SIEC Charter).

The SIEC established a Staff Advisory Work (SAW) group which is responsible for identifying legislative issues that might delay plans for statewide interoperability. SAW members are SIEC staffers who do not represent local governments. Temporary subcommittees or work groups are established as an arm of the SAW group when necessary. These subcommittees consist of SIEC members. Past groups include funding and technology subcommittees (SIEC).

The SIEC has given the Washington State Police (WSP) the lead on planning, implementing, and centralizing statewide communications projects and radio networks because of their experience managing IT based projects. WSP must work closely with SIEC subcommittees and working groups to address system management issues and ensure that all public responder disciplines and regions are represented in the decision making process (SIEC).

Washington State is divided into nine Regional Homeland Security Coordination Districts. The SIEC adopted the regional approach to more effectively distribute federal funding, conduct

training exercises, create regional mutual aid agreements, develop a volunteer base, and to develop emergency response plans. The regional structure has allowed local governments to share and coordinate resources and facilitate collaboration (WASCIP). Each region contains a multidisciplinary committee and a regional coordinator who sets regional priorities (WASCIP).

Washington's most substantial form of leadership for public safety communications comes from the SIEC. SIEC members represent local and multidisciplinary public safety organizations. SIEC members are appointed by the ISB and must include the National Guard, the State Police, Department of Transportation, city and county governments, state and local fire chiefs, police chiefs, and sheriffs, and state and local emergency management directors. However, specific local governments are not well represented and many SIEC members also serve as representatives for a larger organization. For example, the City of Yakima Assistant Fire Chief is not representing the City of Yakima alone; he serves primarily as the representative of the Washington Association of Cities (WASCIP).

In Washington, communications systems take many different forms, including: low-band, VHF, UHF, 800 MHz, trunked, analog, and digital. Varying technology and the state's diverse geography, makes it difficult to support a statewide system or even patch existing systems.

Local governments have developed creative ways to communicate. Some local agencies use cell phones as their primary communications method (SIEC). Unfortunately, patching channels, sharing radios, and the sheer number of other methods used to connect local governments has made interoperability across the state complicated and expensive to maintain. Local officials have complained that these channels are unreliable and receive poor coverage. In many cases, agencies do not understand or are reluctant to use these services (SIEC).

In 2004, the SIEC developed a comprehensive plan to design and implement a statewide interoperability system that would be available to all first responder agencies. The statewide system was developed using the multiple subsystems approach, much like California's System of Systems. The Washington network would include several key elements such as gateways or Radio over Internet Protocol (RoIP) which allows non-state agencies to connect to the state system. RoIP systems use the internet as a vehicle for carrying voice (VoIP) and data information. The system would also have the ability to interface with federal networks (SIEC).

Washington chose the digital system because it can support all radio frequencies and bandwidths, meaning that it can incorporate the various local communications systems. This system would also improve communications in the short term while local organizations seek funding to transition to the new standards based equipment. If all local governments were to adopt P25 equipment then the state could guarantee full interoperability (SIEC and WASCIP).

In order to achieve their goals and successfully implement the entire multiple subsystems plan, the state must construct radio frequency sites, radio dispatch centers, and radio network control centers. They must also seek funding to buy new equipment. Sadly, Washington has been unable to secure funding to complete their entire plan and local governments are not transitioning to the new equipment as quickly as the SIEC had hoped. Much of the statewide plan that was developed in 2005 has been put on hold (SIEC).

Although Washington has no statewide system, shared infrastructure between state agencies and local governments is common. An example of a successfully shared system is the Washington Emergency Management Division's (EMD) Comprehensive Emergency Management Network (CEMNET). This system links the state Emergency Operations Center to local centers throughout the state.

The Washington State Legislature allocated \$3 million for interoperability specific projects from 2007 until 2009 (WASCIP). This amount is far less than many of the other states included in this analysis; Illinois contributed \$27 million, Louisiana over \$45 million, Arkansas \$66 million, and New York almost \$500 million (but far more than others, i.e. California and Texas). A lack of state funding has caused state and local officials to continually seek out federal grant funding. Individual local and state organizations are encouraged to seek out funding opportunities on their own (WASCIP).

The \$19.1 million that Washington received in PSIC grant funds went toward a radio over RoIP system that allows local agencies to connect their radios with the state system, acquisition of Project 25 radio equipment, and a statewide data communications system. Washington has fulfilled its obligation to pass 80% of federal PSIC funding to local governments (NTIA).

Most agencies provide in-house training for their specific communications system. Because agencies throughout Washington utilize a wide array of different communications technologies, agency level training is the most effective method. However, first responder agencies in Washington are not required to provide training exercises, except for their specific disciplines (WASCIP).

Washington Homeland Security Regions are required to develop SOPs for local governments in their jurisdiction. These SOPs must align with their local communications interoperability plans. Individual networks, at both the state and local level, have also developed SOPs to meet their needs. Washington does not currently require a statewide SOP to govern its proposed radio over internet protocol system (WASCIP).

New York

New Yorkers might say that the relationship between New York State and its local governments can be summed into one statement, “there’s New York City and then there’s

everything else.” State and local relations in New York, over the course of several centuries, have resulted in this statement being true. Though New York City might dominate state politics, the state government has done its fair share of limiting local power in return.

Many local governments in New York State have been in existence longer than the state. During the colonial period, citizens saw local government as a means for distributing services. Thus, when new services were needed or citizens did not want to provide certain services, a new local government was formed. At that time, citizens saw cities as *the* local government. State officials eventually established counties to serve as local administrative arms of the state.

In 1923, voters approved an amendment that restricted the state government’s ability to impose special laws on cities. The following year cities were granted the power to adopt charters without seeking approval from the state. In 1959, New York voters approved a constitutional amendment giving all counties the right to adopt a charter without special authorization. Voter approval of the Constitutional Amendment assured that New York State would adhere to home rule, at least symbolically.

Though local governments have home rule status, Article IX of the New York Constitution does not protect them from state mandates. New York State influences most local government operations such as local jails, courts, sewer and water systems, parks, building inspections, and zoning laws (Ward 2006). Furthermore, the court systems have traditionally upheld the state’s decisions and ruled that state doctrine preempts home rule (Pecorella 2006).

New York State has an intricate web of costly and complicated local governments, 3,166 local government units in total (Ward 2006). New York contains 62 counties, 62 cities, 932 towns and 553 villages. This number does not include school and fire districts. The State of Florida, with about the same population as New York State, has two-thirds fewer local

government units (Florida League of Cities). Granted, New York cannot compete with Illinois which has over 6,000 governmental units, but the control that the state attempts to exert over this large number of local entities adds to an already tense environment.

More than half of the state's residents live in a city. New York City alone includes 42% of the state's total population. The mayor and city council in New York City are very powerful and have more constituents than governors and legislatures in 39 states (Boyd 2006). In 2003, New York State's total tax revenues were \$40.7 billion while tax revenue in New York City and other local municipalities totaled \$51.1 billion. Local governments spent \$118.4 billion while the state spent \$89.4 billion. Tax payers in New York pay more to cities and local governments than they pay to the state (Ward 2006).

With the total number of local governments and total population proving to be a daunting task for state government, the state has offered incentives for local governments to work cooperatively and consolidate. Unfortunately, these incentives have resulted in almost no government consolidation.

The greatest source of conflict between the city and the rest of the state revolves around the population of New York City. The racial and ethnic composition of the city along with the disparity between the rich and poor spurs these differences. The largely nonwhite population lives in the city, while the white population live mostly in suburbs or upstate (Stonecash 2006).

New York has the longest running form of divided party control of its legislature than any other state in the U.S., with Democrats originating generally from New York City and Republicans from upstate New York. "In New York nonwhites, urban groups, and the less affluent tend to align with the Democratic Party, while whites, suburban and rural groups, and the affluent are more likely to align with the Republican Party" (Stonecash 2006). These

differences continue to cause disputes that affect state and local relationships. In fact, emotions from upstate New York with regard to New York City range from “bemusement to hostility” (Pecorella 2006).

Though the state cannot constitutionally impose laws on individual cities, the state has enacted legislation that disproportionately affects New York City. For example, the governor appoints most of the seats on the NYC Metropolitan Transportation Authority Board. The state regulates how the city administers the Safety Net Assistance Program, which is a city wide program that works with families who have reached their five year welfare deadline (Pecorella 2006). The state has also developed a tax structure for New York City which does not reflect tax structures in other cities and towns in the state (Boyd 2006). On one hand, New York City exercises great influence in the legislature while it must at the same time go to Albany “with its hat in its hand” asking for fiscal authority (Pecorella 2006).

Regarding the citizens of New York State, compared to national averages, New York has more persons over 65, African Americans, Asian Americans, Hispanics, women, disabled, and college educated than the national average (US Census Bureau). While New York State is more diverse than the U.S. average, it is New York City that accounts for most of this diversity. The average African American population in the U.S. is 12.9%. New York City’s African American population is estimated at 25.1%. Similarly, the average Hispanic population is 15.8%; New York City’s Hispanic population is estimated at 27% (US Census Bureau).

New York has been the target of terrorist attacks and attempted attacks and the state has the potential for both man-made and natural disasters. The state has one Tier 1 UASI region (New York City) and four Tier 2 regions (Buffalo, Rochester, Albany, and Syracuse) (DHS).

Since 1954, New York has declared 76 major disasters including, hurricanes, earthquakes, health risks, terrorist attacks, and fires. First responders in New York prepare for snowfall, floods, earthquakes, power outages, tropical storms, and terrorist attacks (NOAA).

While the events of September 11th were terrifying and tragic, they were not enough to motivate New York State and all of its local governments to collaborate. For many years, local governments had operated on their own communications systems and they were not easily willing to trust the state. The state did not make the local government decision to collaborate any easier. From the beginning, the process was inherently political.

The New York Legislature held a hearing for first responders to voice their concerns regarding interoperable communications in March of 2004. At that time, New York was willing to spend \$500 million on a Statewide Network (SWN) that would serve state police and other state agencies. First responders expressed concern that the Office for Technology (OFT) had failed to adequately involve local stakeholders in the SWN planning process. The legislature felt that SWN should be a statewide system and not just available to state agencies. They also recommended that a task force consisting of communications specialists be established to collect stakeholder input. The Statewide Wireless Advisory Council (SWN Advisory Council) was created in July of 2004 to satisfy that purpose. The legislative sponsor was Senator Michael Balboni who was a strong supporter of the SWN and now serves on the SWN Advisory Council (Silver 2004).

At that time the state had approved a contract to begin construction of the SWN. Local governments were still unaware of the state's plans and several assemblymen began to criticize Governor George Pataki for his lack of leadership. They felt that local first responders were not being consulted and the SWN Advisory Council was not being utilized for its intended purpose.

Local representatives interested in upgrading their equipment complained that they could not do so until they knew whether it would be compatible with the state's plan (Silver 2004).

A legislative hearing was held in May of 2004 after the contract was awarded for the SWN. The original price of SWN was estimated to be \$300-\$500 million but the cost had somehow risen to \$1 billion. Assembly members were angered that they had not been kept informed about the cost of the system. Furthermore, an argument broke out between the Vice President of Motorola and the General Manager of M/A – COM who had been awarded the contract. Motorola had offered a lower bid but the state went with M/A – COM who argued that their services were “technically, financially, and environmentally superior” (OSC 2006). Ethical issues were also called into question because both firms had used lobbyists as consultants during the procurement process. Motorola's lobbyist had direct conversations with the Governor's office and M/A – COM employed former Senator Alphonse D'Amato (Silver 2004).

By 2005, local entities were still not being consulted on plans for SWN. The Chairman of the New York State Fire Chiefs said of the lack of coordination, “The proposal in front of us for several years now is one, as far as we're concerned, of great vision, but not necessarily a shared vision” (Silver 2004). In a letter to the Governor, State Comptroller Alan Hevesi wrote that the lack of coordination must be addressed or the SWN program would be shut down (Hevesi 2005).

A representative from the New York State Association of Counties criticized the lack of outreach. Elected officials representing counties did not understand SWN and were not interacting with the SWN Advisory Council. OFT was then charged with the development of a comprehensive outreach plan that addressed training, resources, SOPs, information sharing, and shared decision making. By November of 2006, OFT had developed an outreach program and

the Office of the State Comptroller conducted a series of audits to assess the adequacy of the project (OSC 2006).

SWN was slowly being adopted in New York but the \$2 billion price tag and expensive equipment caused local governments to refuse to adopt the system. Most local governments who used SWN elected to use gateways to connect with the state system (Jackson 2007). Tension reached a boiling point when M/A – COM’s system began failing its initial tests. M/A –COM attempted to improve its product but after several years of failed test runs the state terminated their contract (Jackson 2009). M/A – COM’s lawyers argue that the state “repeatedly hindered” their performance and accused officials of making excuses to terminate the contract because of the state’s budget deficit (Jackson 2009). Thus began New York’s rocky road to collaboration.

Currently, interoperable communications systems vary considerably throughout the State of New York. There are perhaps hundreds of different communications systems; there are even multiple systems being utilized within a single jurisdiction. The state police use two different systems, the Department of Correctional Services has their own system, even the state universities and the Department of Environmental Conservation use their own systems (Office of Budget and Program Analysis 2006).

The strength of communications in each system ranges from advanced to barely adequate. Success generally depends on the population of that locality. The largest cities have the strongest and most up to date capabilities. Furthermore, collaboration is sporadic across the state. New York City has its own Interagency Communications Committee and counties in western and central New York have established their own joint planning committees (NYSCIP).

The variation and the sheer number of communications systems have made it difficult for the state to inventory current capabilities. SIPO was unable to determine short and long-term

interoperability goals during the SCIP development process because they did not know what capabilities local governments were currently utilizing (NYSCIP).

The New York Office for Technology (OFT) provides technology services and policy advice to state agencies and the Governor. Responsibility for interoperability was initially placed in this office because of their expertise in the IT field and their ability to develop and implement sweeping technology projects. SCIP development focus groups were coordinated by OFT Project Assistant, Vincent Stile (NYSCIP).

The OFT also oversees the Statewide Interoperability Program Office (SIPO). The Statewide Interoperability Coordinator (SWIC) is the director of SIPO. The Coordinator's job is to establish management teams, meeting schedules, technical exercises, and training sessions. He must also maintain and implement the SCIP. (NYSCIP).

SIPO appoints three Regional Managers whose responsibility is to act as liaisons between local stakeholders and the Interoperability Coordinator. These Regional Managers must conduct outreach taskforce meetings in their respective regions twice a year. The regional meetings provide an opportunity for stakeholders to participate in the development process when they are unable to attend RPC, SIEC, or SWN Advisory Council meetings (NYSCIP).

The Statewide Wireless Network Advisory Council (SWN Advisory Council) was created by the New York State Technology Law Sections 401 and 402 in 2004. At the time, their responsibilities were to assist in the development of communications system that would link state and local first responders across the state. The SIEC serves as subject matter experts for the SWN Advisory Council. The SWN Advisory Council is overseen by the OFT.

New York State has been organized into 3 regions based on the FCC's Regional Planning Committees. The SWN Advisory Committee has charged each region's manager with the

responsibility of conducting community outreach programs with the local community in each region (NYSCIP).

The Outreach Office works with the three RPCs to gather feedback and recommendations. SIEC members are encouraged to attend RPC meetings and provide information on the status of communications initiatives, the results of training exercises, task force activities, funding opportunities, and upcoming events (NYSCIP). Representatives from SIPO, the SWN Advisory Council, SIEC, and Regional Task Forces have also participated in information sessions with other states and Canadian officials.

Several months after the contract with M/A – COM was terminated, Governor David Paterson, the OFT, and SIPO hosted a New York State Public Safety Interoperability Symposium. The goal of the symposium was to improve the governance structures which oversee the interoperability in the state. Nearly 250 people attended the event including state, local, federal, and tribal first responders, bordering states, and Canadian officials (Liotta 2009).

Governor Paterson remarked that, “Effective governance requires participation from the whole community, not just a single group or agency. I am confident a refined governance policy regarding interoperability will result in improved public safety throughout New York. The symposium also stressed the importance of interoperable communications and the need to invest in technology (Liotta 2009).

Exactly one year later, in July of 2010, Governor Paterson announced that he would be dissolving the SWN Advisory Council and integrating SIPO into the newly created Division of Homeland Security and Emergency Services. SIPO would no longer be under the control of OFT. At this time, there is no information available regarding whether the SIEC will continue or

disband and no one has been hired to serve as the Director of the Office of Interoperable and Emergency Communications (Office of the Governor 2010).

The new office was a part of Paterson's efficiency and budget cutting platform. The new structure will save the state an estimated \$1.5 million annually and will purportedly focus on the development of a county-driven statewide communications network. OFT will no longer be responsible for coordinating and overseeing mobile radio equipment and infrastructure and they will no longer manage the state's 700 / 800 MHz frequencies (Liotta 2010).

New York's current goal is to encourage local governments who are in the process of buying new equipment to be sure that it is compliant with Project 25 standards. To ensure that public safety agencies are buying the correct equipment, OFT and SIPO are responsible for reviewing proposed acquisition plans and providing recommendations. However, the SCIP states that New York is a home rule state and purchasing authority ultimately rests with the local agency (NYSCIP).

In late 2009, the New York State Council for Universal Broadband published a Broadband Strategic Road Map which makes interoperable communications as a priority. In May 2010, the FCC granted New York State a waiver to construct wireless broadband networks in the 700MHz public safety spectrum. The state claims that it will save money by utilizing existing state infrastructure. They would also like to use this opportunity to build their relationship with local offices. The OFT will take the lead on the project (Liotta 2010)

It is difficult to pinpoint who has provided leadership for New York's interoperable communications. Initial attempts at developing a statewide system were met with scandal and distrust, something that will not be easy to overcome given the precarious nature of the

relationship between the state and the city. Governor Paterson has made some attempts to streamline the governance structure but none of these plans have yet to be carried out.

New York State utilizes local, state, and federal funding sources. Local governments may receive state funding but are expected to seek out revenue from county administrators. New York has fulfilled its obligation to pass 80% of federal PSIC funding to local governments (NTIA). However, because the SWN has been dissolved, the responsibilities of prioritizing funding ventures will likely be left to the Interoperability Coordinator and the state Office of Homeland Security.

While state and local officials offer various discipline specific training opportunities, New York does not currently offer any training courses that focus exclusively on communications, though they are developing a training program that will partner with federal communications training. Federal agencies have developed communications specific programs and the New York OHS supports and advertises these opportunities (SAFECOM).

Few cross jurisdictional and cross disciplinary SOPs exist throughout the state of New York. Operational and up-to-date SOPs exist in high risk areas and in localities with cutting edge technology. A few counties and cities have developed interoperability focused SOPs. (NYSCIP).

Mutual aid agreements (MAA) are common throughout the state. All fire services are managed by a statewide mutual aid plan. Agreements have been established across jurisdictions, with neighboring states, and with Canada. Most MAA do not address communications specifically but some localities have developed a plan for communicating with one another during emergencies (NYSCIP).

High, Moderate, and Low Levels of Collaboration

Louisiana as a highly collaborative state. Louisiana utilized a combination regional and subject specific approach to governance. When they began the SCIP development process, they realized that they were not including enough input from local representatives. As a result, state officials changed the governance structure entirely and developed a more decentralized regional approach. The project had many supportive and devoted leaders ranging from governors to committee chairman and everyday emergency management staff members. Leaders were also able to provide enough motivation for local entities to adopt LWIN.

Almost all public safety agencies in Louisiana use LWIN and the system is currently expanding to accommodate localities along the Gulf Coast and Arkansas. Organizations who are not LWIN subscribers either do not have the available technology or live in an area that has not yet been integrated into the system, though the state is working toward increased coverage across the state. Louisiana has received a great deal of funding from both the state legislature and the federal government. They offer training and SOPs for anyone using LWIN and their governing bodies have been codified under Louisiana Law, giving them the authority they need to enforce the objectives spelled out in the SCIP.

While unfortunate, the catalyst for Louisiana's success was Hurricane Katrina. Katrina gave Louisiana officials the leverage to successfully lobby for state and federal funding. It also gave public safety officials the incentive to work together. Without Hurricane Katrina, Louisiana may never have developed LWIN. This evidence alone is enough to suggest that other factors did not play a role in Louisiana's success and that all one state need do is to wait for a natural or manmade disaster in order to increase collaboration. As we found in the case of New York State, this is not always the case.

Arkansas as a highly collaborative state. Arkansas officials were fortunate that they did not have to fight against large powerful cities or existing communications networks. However, a lack of city governments and existing networks were not the only variables that contributed to Arkansas' success. Arkansas officials have come close to creating an ideal collaborative state through their use of political tools and policy inputs.

Arkansas can attribute its success to supportive and visionary leadership and built-in incentives, such as designated state funding for equipment purchases and a lack of user fees. As in Louisiana, anyone using the statewide system is offered training and the ability to sign and follow SOPs. Governance boards were established by executive order or Arkansas Code which gives them the legitimacy necessary to enforce and manage a statewide plan.

Finally, and also like Louisiana, Arkansas officials have successfully developed a statewide network. Most public safety agencies in Arkansas use AWIN as their primary form of communication. While Arkansas is a low risk state, some natural disasters did occur during development of AWIN including several tornados. This was enough to encourage local buy-in and ensure the future of AWIN.

Rhode Island as a moderately collaborative state. Rhode Island could easily have been designated a highly collaborative state. The small land area and few local entities make communication and ultimately collaboration between the state and local governments effortless. Though Rhode Island is a low risk state, officials were able to find common ground and work together because of a shared fear of a 9/11 or Katrina type incident. Former Governor Donald Carcieri made development of a statewide network a priority throughout his tenure and the CWG has provided constant leadership during the development and implementation process. RISON users must sign SOPs and trainers travel to individual localities to conduct training exercises.

Furthermore, local governments have developed communications systems which have been linked together for statewide use by state level organizations. Implementation and decision making for RISCON is entirely decentralized and many state and local agencies use the system.

However, while many state and local agencies use RISCON, it has not been adopted by a majority of users. There are several barriers to system adoption which the state either does or does not have control over. First, while RISCON was developed by utilized a decentralized approach, this has resulted in confusion over which agency should provide system leadership. Interestingly, Rhode Island's governance structure takes the form of a traditional hierarchy. While many local entities were consulting during the policy development process, few agencies feel that they must follow the advice of the lead agency, the CWG. This organization serves as an advisory council for another advisory council and does not have the legislative or executive backing necessary to enforce the plan.

Funding has also proven to be a significant barrier. While, the state has spent a large portion of its federal grant money purchasing equipment for local governments and developing RISCON, the state legislature has been unable to designate a funding source for system maintenance. Federal funding is quickly running out and some local entities are still unable to buy the necessary equipment, making collaboration difficult.

Texas as a moderately collaborative state. Like Rhode Island, Texas could have easily been included in the highly collaborative category. Texas' use of existing regional councils to organize localities is truly impressive. No other state in the analysis utilizes this type of strong regional council model. Texas Governor Rick Perry has been supportive of interoperability efforts and established the TxRC which is the primary governing board. Membership on the

TxRC is voluntary and representative of all levels of government. Finally, Texas has begun implementing the Channel Plan and users must sign an MOU to participate.

Currently 1560 out of 5300 public safety agencies use the state's Channel Plan and there are many reasons why more agencies have not decided to utilize the plan. The Texas Legislature has not established an ongoing funding source and has awarded only a small amount of funding to local agencies which makes it difficult for them to buy new equipment. The Channel Plan can only be used during an emergency and is not available for everyday use. Because the Plan has not become a substitute for everyday use, it may be unattractive for local agencies that already have their own communications network. The difficult terrain in Texas has made it impossible to expand the Channel Plan across the entire state. Training is not yet available for anyone who does decide to adopt the Channel Plan. Finally, while membership on the TxRC includes all government levels, the organization only serves as the Governor's advisory board and has no authority to enforce the statewide plan. All of these variables, some controllable (training, TxRC legitimacy, funding) and others are not (diverse terrain), combine to make collaboration difficult.

California as a moderately collaborative state. California employs a mixed regional and subject specific approach to their governance structure. California is considered at risk for both terrorist attacks and natural disasters. Public safety officials in California are proud of a history of innovation and successful response to natural disasters, leading one to believe that they would be willing to come together for the sake of public safety. The state also utilizes the help of three organizations: the PSRSPC, which is responsible for gathering input from state agencies, CalSIEC, which is responsible for gathering input from local entities, and the OEC which works with all government levels. Interestingly, CalSIEC which is charged with local outreach is the only one of the three organizations that is not codified through California Law.

Individual disciplines in California have operated on their own networks for many years and they continue to focus on and update these networks. State officials have attempted to develop a System of Systems SoS, similar to RISCON in Rhode Island, which would link existing networks to one another. However, unlike Rhode Island, California has a large and diverse population and any new system must provide coverage to a much larger land area. Without a doubt, officials in California have the knowledge and motivation to implement the SoS but the largest barrier has been a lack of funding. This may seem odd considering that California has received most of its funding from the federal government; however, 80% of that funding went directly to local governments who spent the money on their own networks and projects. Furthermore, the state is experiencing a dire financial situation and a designated funding source is not likely to be secured in the near future.

The lack of funding has resulted in training exercises being put on hold and a lack of SOPs. While CalSIEC and the PSRSPC are not making friends by seeking measures to force public safety agencies to comply with the SCIP, they have very few options in a fiscally strapped state with a history of bad relationships between the state and local governments.

Illinois as a moderately collaborative state. Many of Illinois' collaborative inputs at first seem like a virtue but turn out to be a vice. For instance, Illinois has given its local governments home rule and control over their daily operations. Theoretically this arrangement is ideal, but in Illinois' case there sometimes can be too much of a good thing. Most of the state's energy goes to providing support for local entities, of which there are many, in fact, more than any other state. Not only does Illinois have numerous local governments but it also has countless communications networks and memoranda of understanding between public safety agencies. No wonder the state decided to develop a largely hierarchical governance structure. With so many

networks and local entities, how would they even begin to decide who and how many local agencies should be included in the policy development and implementation process?

Illinois is on the right track by developing its statewide network, STARCOM 21, and its status as a high risk state for potential terrorist activities makes this necessary. Furthermore, SOPs for STARCOM users and training exercises help to put both state and local agencies on the same page. Unfortunately, the questionable relationship between Motorola and the state, along with increasing monthly fees to use STARCOM, coupled with the sheer number of unmanageable local entities, all make it difficult for the state and local governments to collaborate.

Washington as a moderately collaborative state. While the state plans to create a multiple systems network, collaboration will be difficult because state officials are loath to force local governments to do anything, much less buy P25 compliant radios. This is interesting considering that local governments complained during the SCIP development workshop that a statewide plan would take control away from their locality and result in unfunded mandates. Unfunded mandates may not be too far off; the state legislature refuses to fund this project.

It is difficult to explain why local governments do not trust the state. In Washington's case it appears that too much of a good thing (local autonomy) can backfire and result in nothing actually getting accomplished, much like Illinois. Interestingly for Washington, their political systems are their strength and their collaborative inputs are their weaknesses. The state has given local entities autonomy and critical infrastructure within the state and the probability of natural disasters put Washington at risk. However, officials cannot secure funding, local governments are not well represented in the governance structure, there are no strong leaders, no SOPs, and no training exercises. This phenomenon has resulted in exactly what we would have

expected. Currently, the plans outlined in the SCIP have been put on hold and the multiple systems network has not been created. Thus, the state itself, while well meaning, believes that it is creating a collaborative environment when, in fact, the lack of policy inputs have led to failure.

New York as a non-collaborative state. While New York State had more than enough funding and motivation (9/11) to develop a successful network, they were unable to garner local support and are in a period of major restructuring. Though the original governance structure included both a regional and subject specific approach, the state was unable to shed its historically bad relationship with its local governments and to add insult to injury, they continued to disregard the needs of local governments throughout the policy development process. Furthermore, private companies had far too much power in the decision making process which resulted in distrust and the eventual downfall of the entire system. Governor Paterson took a step forward by disbanding the old governance structure; however, it is yet unknown how or if the new governor will make interoperability a priority. Officials at both the state and local levels have a difficult road ahead of them, particularly if they wish to “mend broken fences” and truly collaborate with local governments.

Pattern Matching and Propositions

Proposition 1: A combination hierarchical and network approach will yield greater levels of collaboration. Governance structures should specifically include regional councils and/or subject specific committees with high levels of local participation. Both highly collaborative and non-collaborative states utilize subject-specific and regional governance structures. Louisiana and Arkansas use this approach, while Rhode Island does not. Low and non-collaborative states, such as Washington and New York, also use these approaches. This indicates that a more decentralized governance structure does not always lead to increased collaboration.

Proposition 2: A strong figurehead, such as a governor, can create a sense of shared purpose and facilitate collaboration by including all relevant parties. The top five collaborative states (LA, AR, RI, TX, and CA) in this analysis all have strong leaders. It does not seem to matter whether leadership comes from a strong executive such as a governor or from a governing body. Strong leaders can both motivate and lobby for increased funding.

Proposition 3: States with established statewide communications networks will collaborate with local entities. States without statewide networks can facilitate collaboration by finding an alternative method for bridging or patching existing technology. The top four collaborative states, along with Illinois, all either have a statewide network in place or are working to bridge existing networks. Of course, development of a statewide network depends of funding and land that is conducive to modern technology. A statewide network does have its advantages, including an increased sense of shared purpose among divergent interests.

Proposition 4: States that provide a continuous designated funding source will encourage participation. In other words, a state in good fiscal health can expect positive relationships with its local governments. This proposition certainly does not lead to increased collaboration in every state. While states, such as Louisiana and Arkansas, have set aside designated funding sources, New York appropriated the most significant amount of money from both federal and state sources and the result was a breakdown of the entire program. This simply proves that while money does make is easier for collaboration to develop, it is not the amount of money but how states choose to use that money that determines success. Arkansas and Rhode Island were given less money from the federal government than other states in this analysis and they found success.

Proposition 5: Opportunities for professional development will keep local governments informed, increase chances for networking, and facilitate collaboration. Louisiana, Arkansas,

Rhode Island, and Illinois all include training exercises in their statewide plan. However, training does not seem to indicate whether collaboration is more likely. Training appears to be highly correlated with whether a state has a statewide communications network. Proposition 6: Uniform agreements facilitate communication, increasing collaboration. SOPs also appear to be highly correlated with those states that have a statewide communications network.

Proposition 7: Legislative or executive action brings legitimacy to the statewide plan or governing body and encourages local officials to accept the policy and collaborate. Only Louisiana, Arkansas, and California have governing boards that are supported by legislative or executive action. This finding shows that legislative or executive action does bring legitimacy to the plan and is a helpful policy tool, but is not necessarily essential for success. For example, neither Rhode Island nor Texas has a governing board with statutory authority.

Overall, strong leadership and a statewide network are proven inputs that can increase the likelihood of collaboration. However, as we can see from Table 3-20, the top two states have included all of the collaborative inputs. Political systems can also explain why some states were unsuccessful. California's relationship with its local governments is growing increasingly sour due to the effects of Proposition 13 and the overall bad fiscal health of the state. Illinois and Washington both use relaxed home rule and New York cannot overcome its bad relationship with New York City. Interestingly, risk level had nothing to do with success. The second and third most collaborative states (Arkansas and Rhode Island) had the lowest risk levels and New York the highest. Finally, state demographics, such as the number of local entities and the geography of the state, made collaboration difficult for Texas, California, Illinois, and Washington.

In Chapter 4 we examine how the structure of relationships between organizations during the policy development process contributes to the success or failure of a policy. In this chapter, I delve into the relationship between organizations to determine whether the structure of these relationships and communication between and among actors contributed to each state's success.

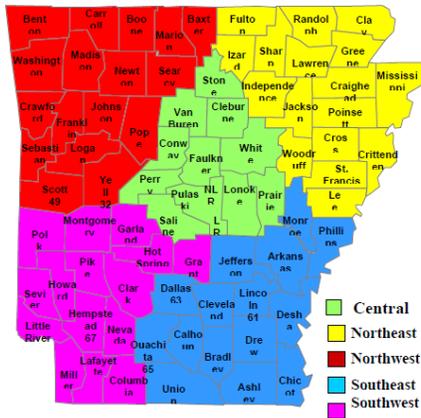


Figure 3-1. Emergency management regions. Source: Arkansas Dept. of Emergency Management.

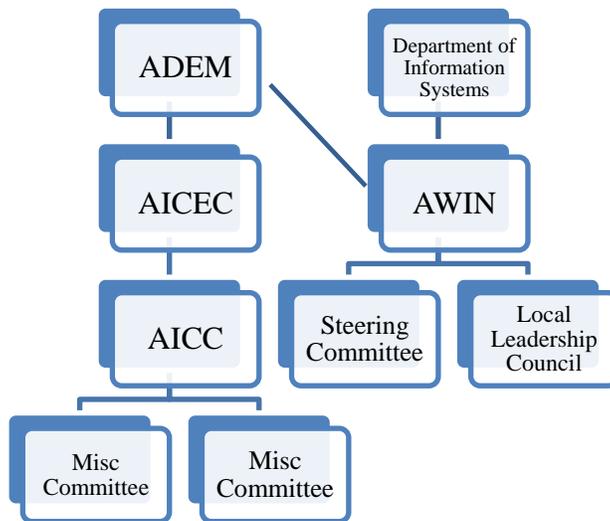


Figure 3-2. Hierarchical depiction of Arkansas’ governance structure.

Table 3-1. Federal funding awarded to Arkansas in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$11.17 mil		
IECGP				\$307,672	\$338,500
UASI	\$0	\$0	\$0	\$0	\$0

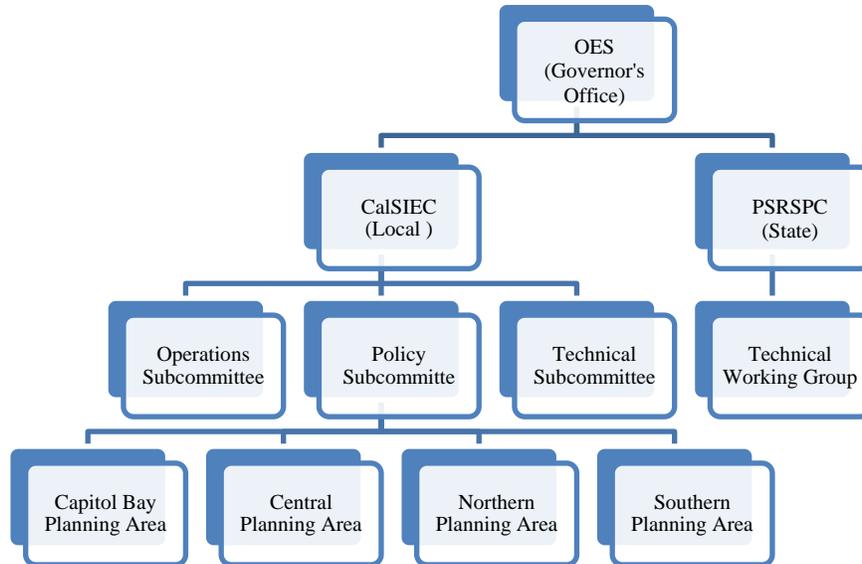


Figure 3-3. Hierarchical depiction of California's interoperable governance structure.

Table 3-2. Federal funding awarded to California in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$94.0		
IECGP				\$6.0	\$5.5
UASI	\$136.29	\$140.7	\$143.79	\$149.6	\$154.5



Figure 3-4. CalSIEC planning areas and mutual aid regions. Source: CalSCIP.



Figure 3-5. Illinois regions. Source: Illinois SCIP.

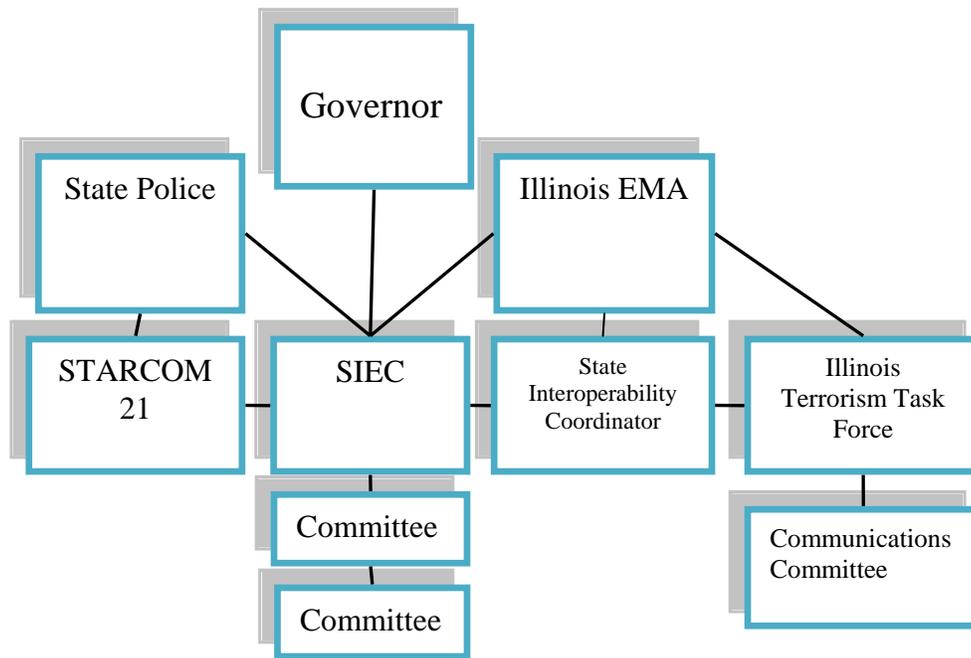


Figure 3-6. Illinois' governance structure.

Table 3-3. Federal funding awarded to Illinois in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$36.4		
IECGP				\$2.0	\$1.9
UASI	\$52.2	\$47.3	\$45.86	\$52	\$54.7

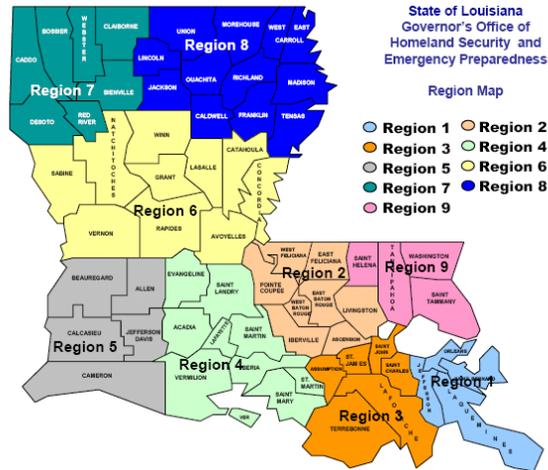


Figure 3-7. Louisiana homelands security regions. Source: GOHSEP.

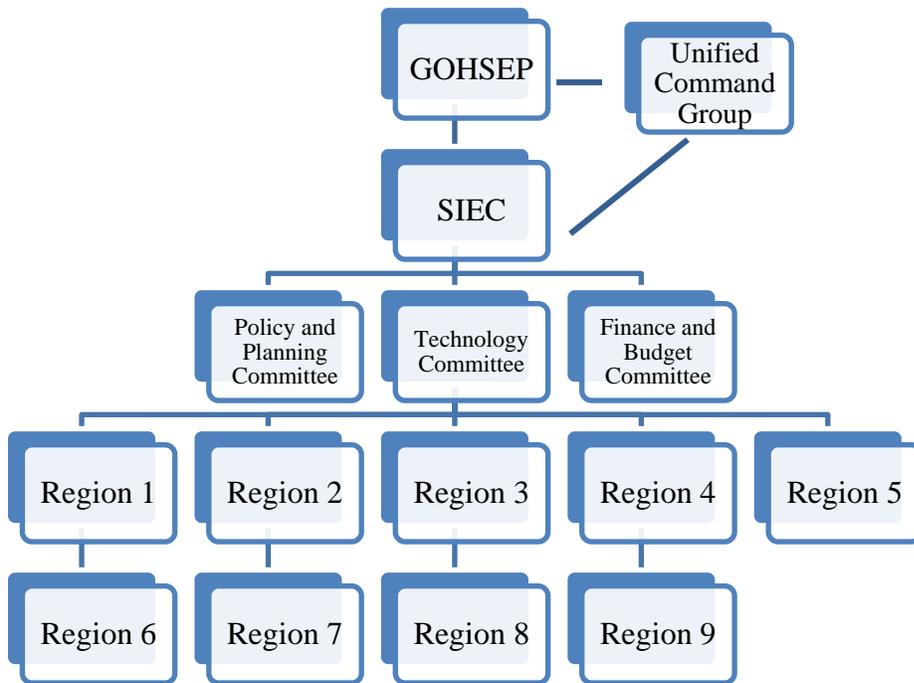


Figure 3-8. Louisiana's communications governance structure.

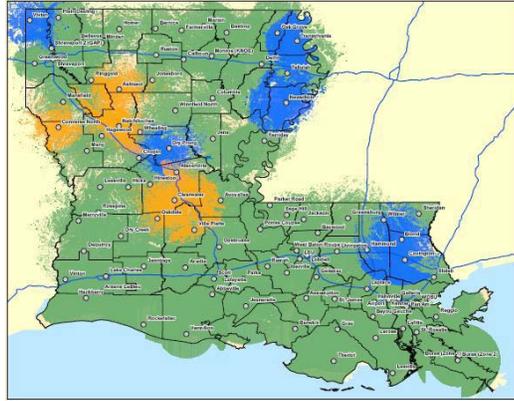


Figure 3-9. Current LWIN availability. Blue areas are currently being installed, orange are in the development stage, and green has full coverage. Source: GOHSEP.



Figure 3-10. Communications systems currently being integrated into Gulf WIN. Source: GOHSEP.

Table 3-4. Federal funding awarded to Louisiana in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$19.67		
IECGP				\$859,524	\$945,500
UASI	\$8.43	\$4.4	\$6.0	\$8.4	\$8.4

Table 3-5. Federal funding awarded to Rhode Island in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$7.4 mil		
IECGP				\$242,875	\$267,000
UASI	\$0	\$5.2 mil	\$5 mil	\$4.7 mil	\$4.7 mil

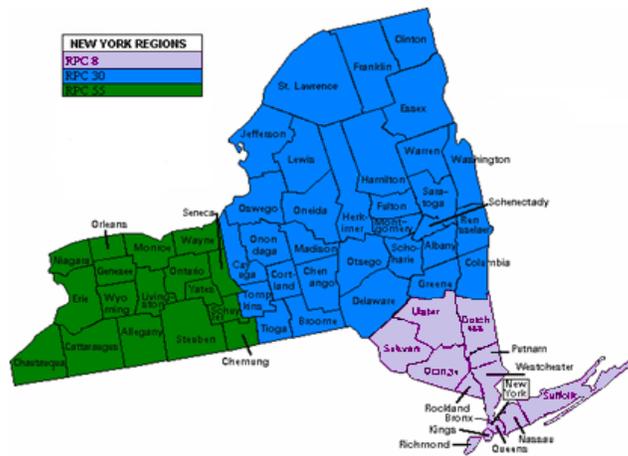


Figure 3-11. FCC regional planning committees in New York.

Table 3-6. Comparison of racial demographics in New York State, to New York City, and the national average. Source: US Census Bureau.

	New York State	New York City	U.S. Average
White (Not Hispanic)	59.9%	35.1%	65.1%
American Indian	.6%	.4%	1%
Asian	7.1%	11%	4.6%
Black	17.2%	25.1%	12.9%
Hispanic	16.8%	27%	15.8%
Native Hawaiian	.1%	.1%	.2%
Mixed Race	1.6%	2%	1.7%

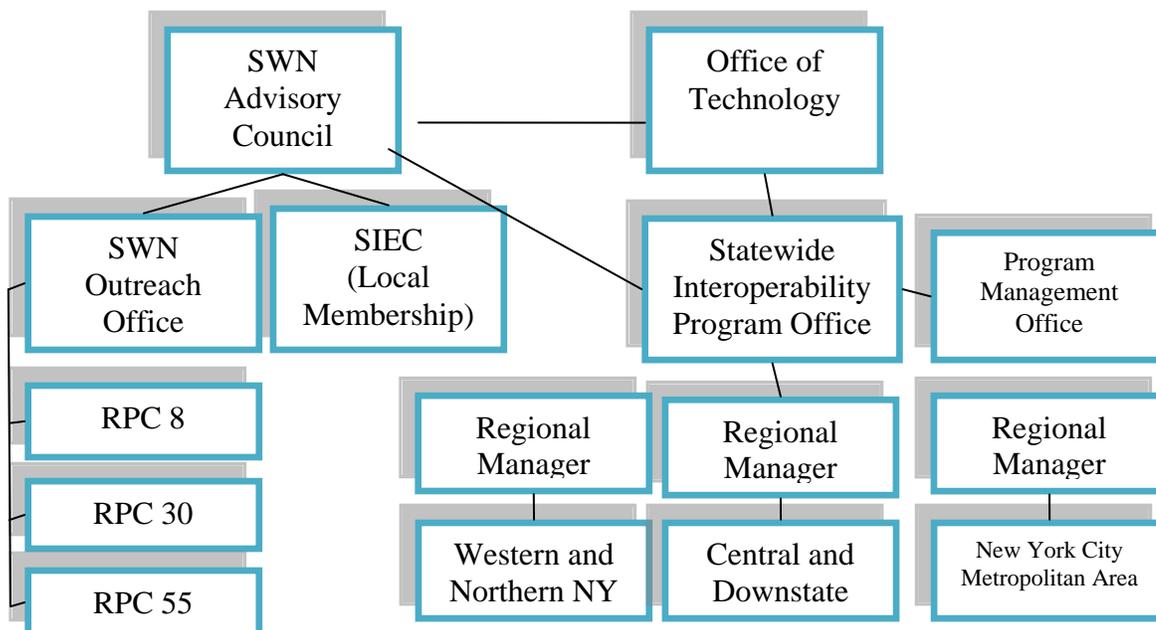


Figure 3-12. New York State's former governance structure.

Table 3-7. Federal funding awarded to New York in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$60.7		
IECGP				\$7 mil	\$6.3
UASI	\$128	\$139.5	\$154	\$156.8	\$161.4

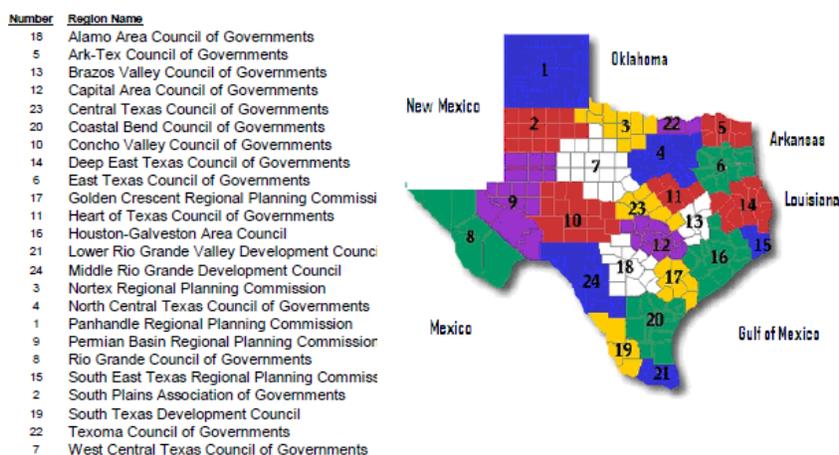


Figure 3-13. State planning regions and disaster district boundaries. Source: TxSCIP.

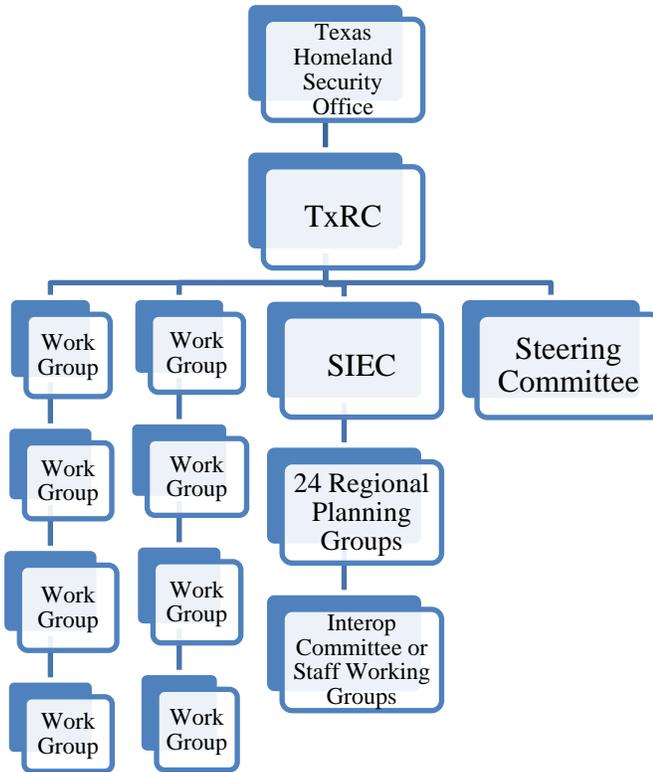


Figure 3-14. Hierarchical depiction of Texas’s communications governance structure.

Table 3-8. Federal funding awarded to Texas in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$63		
IECGP				\$3.46	\$3.8
UASI	\$34.9	\$58.5	\$51.42	\$73.3	\$80.8



Figure 3-15. Regional homeland security coordination districts. Source: Information Services Board.

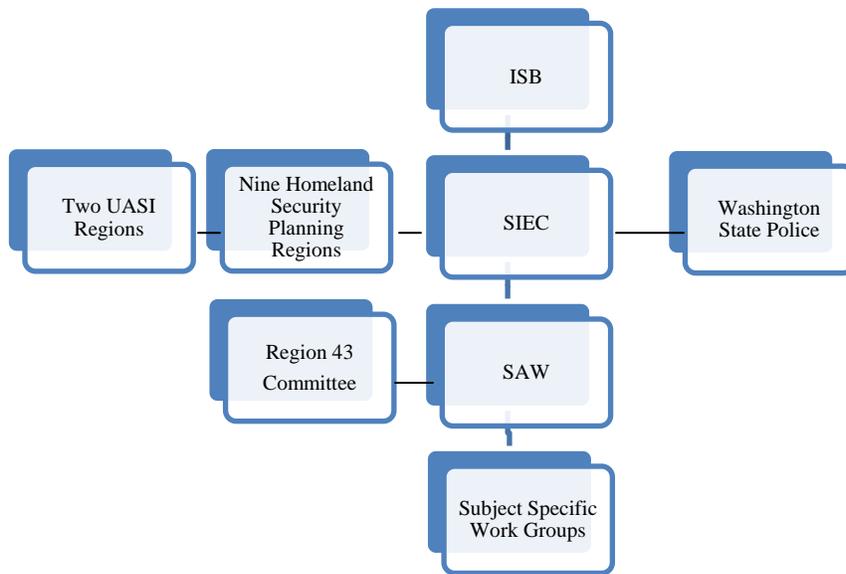


Figure 3-16. Washington State’s communications governance structure. Washington State uses a combination Regional and Subject-Specific approach to governance.

Table 3-9. Federal funding awarded to Washington in millions.

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
PSIC			\$19.2		
IECGP				\$1.2	\$1.0
UASI	\$9.0	\$10.6	\$10.34	\$11.0	\$11.0

Table 3-10. Comparison of governance structures.

	Governance Structure
Louisiana	Combination regional approach with subject-specific committees on the SIEC.
Arkansas	Subject-specific approach
Rhode Island	Traditional approach to governance, decentralized technology
Texas	Established regional councils promote inclusion of local officials
California	Combination regional approach with subject-specific committees.
Illinois	Combination leverages and traditional approach.
Washington	Combination regional approach with subject-specific committees.
New York	Used to operate based on a combination regional and subject-specific approach.

Table 3-11. Comparison of leadership.

	Leadership
Louisiana	Governors Blanco and Jindal have been supportive of state efforts. GOHSEP Director, Mark Cooper, and SIEC Chair Brant Mitchell have been instrumental in developing LWIN.
Arkansas	Governor Mike Huckabee made emergency communications a priority. AWIN Program Director, Penny Rubow, has been instrumental.
Rhode Island	Governor Donald Carcieri has provided support and CWG members have provided necessary motivation and leadership.
Texas	Governor Rick Perry established the TxRC and endorsed the SCIP proposals. The TxRC allows open membership and has been a source of knowledge and leadership. Regional councils also provide leadership.
California	No standout leader, though, the state is a leader in disaster management and state and local officials take great pride in their accomplishments.
Illinois	No strong leadership. Questionable relationship with Motorola.
Washington	No strong leadership.
New York	Governor Paterson provided the most recent leadership by restructuring governance organizations. Former governing bodies did not include locals in decision making process. Governor and the legislature made questionable decisions. Scandal and the current lack of trust will be difficult to overcome.

Table 3-12. Statewide networks available.

	Is Statewide Technology Available?
Louisiana	Yes, LWIN
Arkansas	Yes, AWIN
Rhode Island	Yes, RISCON
Texas	No, using IP networks, gateways, and patches to connect localities.
California	No, want to develop a “System of Systems” but have not yet completed due to budget constraints.
Illinois	Yes, trying to implement STARCOM 21 but have not attracted many users. There are many networks in operation throughout the state.
Washington	No, would like to expand the “multiple systems” network to link local and state agencies. The plan has been slow to develop due to funding constraints, diverse terrain, and varying technology.
New York	No, plans for development of SWN were called off. There are numerous interoperable communications systems throughout the state based on first responder discipline.

Table 3-13. Comparison of funding across states.

	Funding
Louisiana	State has established a designated funding source. Has received a large amount of federal funding.
Arkansas	State has established a designated funding source. Minimal federal funding.
Rhode Island	Some state and federal funding. No designated funding source.
Texas	Minimal state funding. No designated state funding source.
California	Minimal state funding. State is in deep financial trouble and often borrows money from local governments.
Illinois	State has given some money. Most funding is from federal sources. STARCOM users must pay a monthly fee to use the network.
Washington	Minimal state and federal funding.
New York	State was willing to give \$500 million for SWN. Has received a large amount of federal funding.

Table 3-14. Comparison of training available across states.

	Training
Louisiana	Available for LWIN users or anyone working with LWIN users.
Arkansas	Available for AWIN users or anyone working with AWIN users.
Rhode Island	Available for RISCON users.
Texas	Plans to develop an online course for interoperability training.
California	No specific communications training offered.
Illinois	STARCOM 21 and general communications training offered.
Washington	No specific communications training offered.
New York	No specific communications training offered.

Table 3-15. Comparison of SOPs across states.

	SOP or MOU
Louisiana	LWIN users must sign SOPs.
Arkansas	AWIN users must sign SOPs.
Rhode Island	RISCON users must sign SOPs.
Texas	Channel plan users must sign an MOU
California	Currently developing an SOP to manage SoS users.
Illinois	STARCOM 21 users must sign an SOP.
Washington	No SOP for “multiple subsystems” network but other communications networks require SOPs.
New York	No statewide communications agreements. Some local governments have established SOPs and MOUs for general emergency management.

Table 3-16. Statutory authority.

	Statutory Authority
Louisiana	Act 797 establishes the Office of Interoperability and the SIEC.
Arkansas	AICC and AICEC created by executive order. ADEM and DIS have ultimate authority.
Rhode Island	The CWG serves as an advisory council to another agency and is not have statutory authority.
Texas	TxRC was established as an advisory board to the governor. No power to enforce.
California	PSRSPC and OES are codified. CalSIEC, who works with local entities has indirect authority through another agency.
Illinois	SIEC is overseen by the governor. Established through bylaws under State Radio Act which limits its power.
Washington	SIEC is the subcommittee of an agency, no real legitimacy.
New York	No government structures are currently in operation.

Table 3-17. Comparison of political history.

	Political History
Louisiana	All parishes have home rule.
Arkansas	Counties have home rule. Local officials would like more autonomy but voters rejected because they wanted stable state funding.
Rhode Island	No county government because of size.
Texas	Limited home rule for cities. Lack of trust for strong executives.
California	Voter referendums have changed the relationship between the state and locals.
Illinois	Home rule is popular and the state gives more autonomy to local governments than other states. State rarely enforces laws that are meant to control localities without home rule.
Washington	State continues to increase autonomy given to counties. Decentralized, the state is does not wish to intrude on the rights of locals.
New York	Local governments have home rule status but only symbolically. Tensions exist between New York City and the rest of the state.

Table 3-18. Comparison of risk level.

	Risk Level
Louisiana	High risk for natural disasters. Hurricane Katrina was the catalyst for action.
Arkansas	Low, at risk for natural disasters / tornados.
Rhode Island	Very low risk for natural disasters.
Texas	High, at risk for natural disasters, border security, oil refineries.
California	High, at risk for natural disasters and terrorist attacks.
Illinois	High, at risk for terrorist attacks.
Washington	Moderate, critical infrastructure concerns and natural disasters.
New York	Very high, at risk for terrorist attacks, some natural disasters.

Table 3-19. State demographics.

State Demographics	
Louisiana	Reasonable number of local entities. Highly poor and non-white population.
Arkansas	Reasonable number of local entities. Highly poor, white population.
Rhode Island	Only 5 counties and 39 cities and towns in the entire state.
Texas	Large number of counties, diverse terrain, large Hispanic population.
California	Large and diverse population, diverse terrain.
Illinois	Over 6,700 local governments, more than any other state.
Washington	Homogenous population, higher than average wealth. Diverse terrain.
New York	3,166 local governments. Diverse population that lives mostly in cities.

Table 3-20. Fulfillment of propositions according to state.

	LA	AR	RI	TX	CA	IL	WA	NY
Proposition 1	Yes	Yes		Yes	Yes		Yes	Yes
Proposition 2	Yes	Yes	Yes	Yes	Yes			
Proposition 3	Yes	Yes	Yes	Yes		Yes		
Proposition 4	Yes	Yes				Yes		Yes
Proposition 5	Yes	Yes	Yes			Yes		
Proposition 6	Yes	Yes	Yes	Yes		Yes		
Proposition 7	Yes	Yes			Yes			

CHAPTER 4 POLICY DEVELOPMENT BY NETWORK

The public safety agencies that choose to participate in policy development are embedded in a network of interrelationships with other organizations. The structure that results illustrates the interdependence of agencies who must communicate, compete, and cooperate to develop an acceptable policy. In this chapter, I design a network for each state that represents the structure that was created during the policy development process. I then evaluate how the relationships between organizations contributed to the success or failure of a policy. The networks in this chapter represent the approach that the state took to gather information from stakeholders and develop the SCIP.¹

Emphasis is placed on the policy development process because often the success or failure of a policy can be traced back to its original design (Goldsmith and Eggers 2004). The development process is where the collaborative bond begins. The willingness of local entities to participate in the implementation of the SCIP is likely to be a direct result of the opportunity they were given to contribute to its development. For organizations to want to collaborate they must feel invested in the policy (Bardach 1998). If the design is unacceptable or if some agencies do not feel as if they were included, then we can expect the policy to fail

Literature on the policy development process generally focuses on the topics discussed in previous chapters: inputs, outputs, and outcomes. Yet earlier research does not explain how a network of relationships contribute to the success of a policy. In a situation where collaboration is our end goal, the structure of the relationship is the key to reaching that goal.

¹ The network structure does not represent the process whereby the state governs the implementation of the SCIP, nor does it represent any outreach programs that were employed after the SCIP was developed.

Network analysis gives us the opportunity to look at the policy development process from another angle. By using network analysis techniques, we can understand the strength of the relationship between local and state governments and determine how this contributes to the overall success of the policy. We can also map the flow of information from one agency to another and examine which organizations are the most powerful. A network structure assumes that people influence each other, ideas flow through relationships, and above all, the structure of the relationship matters (Borgatti et al. 2009).

When designing the policy development network, I included ties that I could confirm actually exist. Information from the state SCIP, meeting minutes, and other journalistic and government documents were examined to determine which agencies were involved and with whom they communicated. If there was no record of a tie between agencies, it was not included. Moreover, many of the organizations involved work with each other in varying capacities. For example, some agencies have formed committees that collaborate on port security or bioterrorism issues. While outside relationships may also influence policy development, I do not assume that these relationships contributed to the SCIP directly. Therefore, I only include direct relationships that facilitate collaboration specifically for interoperability.

In the following section I explain the network techniques that were employed in this analysis to examine whether the policy development process was able to facilitate collaboration. Did some agencies serve as gatekeepers or brokers: did they increase their power by passing along information to the state? Was the relationship based on professional affiliations? Finally, local entities in most states must volunteer to participate in the policy development process. Exactly which agencies were being represented and why?

Hypothesis #1: Network structures that include a combination of dense internal relationships and open external relationships (structural holes) will increase the likelihood of collaboration (Reagans et al. 2004).

Successful collaborative endeavors require trust, reciprocity, shared norms and values, and general agreement on goals and objectives. Successful policy design requires innovative ideas, bargaining, and diverse information from varied sources. These two expectations require contradictory governing structures.

Consider Figure 4-1. In the first diagram, A, B, and C share a close relationship. Each actor is connected to the others. If the relationship is healthy, they will all share information and foster some level of trust and reciprocity. This same analogy can be applied to emergency management agencies that collaborate to develop a communications policy. The ultimate goal is to foster a sense of trust among participants. The close relationship in Diagram 1 gives everyone an opportunity to share information and develop a plan that meets the goals of each agency.

By contrast, the second figure creates a boundary between certain members of the group. None of the agencies involved are directly tied to one another. B, C, D, and E must all go through A to speak to one another. There is likely no trust or reciprocity because most of the agencies do not even know one another.

The second diagram is easily criticized in the context of collaboration because it fosters competition rather than cooperation. Burt (1992) calls the gaps in communication present in Diagram 2, “structural holes” and he argues that there are advantages to their existence. Advantages include new and innovative ideas and the opportunity for group members to learn from new experiences and expertise. It is also important to reach out to other organizations that are not included in the group. Structural holes allow for dialogue between organizations outside

of a close knit group; on the other hand, a dense cluster of organizations will stay within their own ranks and may not seek out information from outside of the group.

Diagrams I and II are extreme. Each state included numerous, sometimes hundreds, of agencies in the development of the SCIP. But each state designs its policy development process with more or less emphasis on structural holes. States that hold focus group meetings or ask regions to hold information gathering sessions with their local governments will have more structural holes than a state which consults with only a select group of stakeholders.

In some states, actors in the policy development process are there by design. They are passive recipients of the network structure (Borgatti and Foster 2003). In this case, the SIEC or some other state agency designs the structure around which they will participate. The SIEC might offer focus group meetings or regional information gathering sessions and the participants must decide to contribute within the confines of this structure. Or, as in some states, participation is voluntary and organizations must determine how they will contribute. In both cases, relationship structure determines who is heard and how important their contribution is to the collaborative endeavor.

Figure 4-2 provides an example of why structure is important. State A has decided to bring state and local entities together to develop a particular policy. The state is divided into four homeland security regions (red dots). Each region holds a focus group and they all work together to identify policy goals. Even some of the local governments have direct access to the state, though the regional groups act as representatives for them. The final recipient of this information is the state SIEC or some other governing body (blue dots).

State B also has homeland security regions. They hold regional focus groups and the members of most of the groups never communicate with one another and never directly

communicate with the state. State B has a significant amount of power in the policy development process. The state makes final decisions regarding what will and will not be included in the SCIP. Unlike State A, the regions in State B are not communicating with one another. This creates a sort of “us versus them” mentality where local governments compete for their own interests (Johnson 1967). If the goal is to create a collaborative environment, the last thing the state should do is create secrecy and competition.

On the other hand, State B is more likely to yield new and innovative solutions to the communications problems plaguing the state because there is a greater opportunity for actors to talk with others outside of the group. The local agencies in State A are all connected and no new information is flowing through the network. The group can only know what everyone in the group knows. State B has several structural holes where information can flow from any possible unknown source.

Hypothesis #2: Direct contact between organizational participants and the decision maker increases the likelihood of collaboration. Those who serve as gatekeepers must be trustworthy.

Who is the most important actor in a network? In Figure 4-2, the regional agencies in State B serve as brokers or gatekeepers. A broker bridges two networks together. Ideally, a broker would provide a bridge in between two or more networks of agencies (Gould and Fernandez 1989). As you will see, this is the case in several states. The broker usually has the most power because the actors on each side of the broker do not communicate, thus, increasing the likelihood that they could be dishonest or neglect to submit every concern to the state.

Centrality measures how an actor’s position in the collaborative group contributes to his importance (Borgatti et al. 2009). I observe three types of centrality: degree, closeness, and betweenness, all of which are acquired through Ucinet software and based on individual scores.

First, how well connected an actor is to the group can be determined by degree centrality, which measures the number of organizations that each individual is tied to. The greater the degree centrality, the more opportunity there is for an organization to be influenced and for them to influence others. All things considered, it might matter more profoundly who the agency is connected to rather than to how many agencies they are connected (Lin 2000). Secondly, closeness measures how far one agency is from another. For the sake of individual agencies involved in the collaborative effort, we would like to see information flow from them to the decision makers rather than through a gatekeeper because that information has the chance to become polluted. Finally, betweenness identifies how often one organization lies along the shortest path between other organizations. The organization with the highest betweenness score is the primary “gatekeeper” or the individual that others must go through to be heard.

Hypothesis #3: Network structures that include a range of disciplines (fire, police, EMS) and government levels (local, state, federal), will increase the likelihood of collaboration.

There is evidence in the literature that suggests that people, or in this case organizations, with similar characteristics or occupations are more likely to work together (Brass 1985; McPherson et al. 1987). Fire fighters are more likely to work with fire fighters, EMS with EMS and so forth. Occupational diversity is hypothesized to decrease a collaborative group’s density; team members from different disciplines will exhibit weak relationships with one another.

The notion that people base relationships on similarities is called homophily. Reagans et al. (2004) argue that this is not always the case, depending on the context of the network. “In particular, if the team members have past experience interacting with members of different categories (Westphal and Milton 2000) or if the organization[al] culture fosters the creation of cross-category relationships (Chatman et al. 1998; Polzer et al. 2002), then homophily will be

attenuated” (Reagans et al. 2004). Emergency management presents an interesting opportunity to test whether a shared mission and goals, rather than a common occupation, encourages organizations to collaborate.

Louisiana

Unlike most states, Louisiana started their process of SCIP development well before it was mandated by the federal government. In 2005, GOHSEP convened a 3 day stakeholder meeting with 120 participants. Members of 59 of the 64 parishes in the state attended. The network formed at this meeting is represented in Figure 4-3. Officials realized that the stakeholder meeting alone was not able to facilitate the level of buy-in that they had hoped for so they decided to develop a new strategy.

The Louisiana SIEC was not formally established by the Louisiana Legislature until 2008 but it began work in 2007. The SIEC is tasked with facilitating collaborative efforts by gathering input from public safety officials from across the state.

- STEP 1: State and local agencies were required to complete a needs assessment survey prior to regional focus groups. The results of the survey allowed state officials to determine the level of construction necessary for LWIN. State and local agencies who did not complete the survey were ineligible for State Homeland Security Grant funding. All agencies completed the survey.
- STEP 2: The SIEC employed a series of working groups, focus groups, and strategic planning sessions to gather input from local officials. A focus group session was held in each of the nine homeland security regions from May until August of 2007. Focus groups were facilitated by the SIEC Technical Subcommittee and participants included that region’s interoperable working group.
- STEP 3: The Interoperable Communications Technical Assistance Program (ICTAP), an organization sponsored by DHS, hosted a SCIP development workshop in September 2007 and members of the Planning Subcommittee were in attendance.
- STEP 4: During the final development stages of the SCIP, the SIEC Technical and Planning subcommittees met to finalize their implementation strategy. Other subcommittees also met to edit and finalize the SCIP where appropriate.

Louisiana included 111 organizations in the SCIP development process. Figure 4-3, as opposed to 4-4, illustrates the progress that Louisiana officials made by altering the structure of the information gathering process. Figure 4-4 demonstrates a combination of internal density and structural holes in an organized regional structure. In this network, locals speak to regional representative and some speak directly to decisions makers at the state level.

Figure 4-9 illustrates that regions have the greatest number of ties, making them more likely to influence or be influenced: Region 8 (38, 35.45), Region 4 (33, 30.9), and Region 6 (32, 30). Information is flowing directly from local agencies to decision makers, as illustrated by the closeness score. GOHSEP has a closeness score of 100, the Ascension Sheriff's Office has a score of 91.66, and Region 3 has a score of 90.9. Region 3 is also a member of the SIEC which means that information is flowing directly to GOHSEP, a local SIEC member, and a region, a rare combination. In fact, many regions had high betweenness scores most likely because they are also members of the SIEC, acting as direct decision makers. Inclusion of the Ascension Sheriff's Office may seem odd, but this local agency is a member of the SIEC and the SIEC Technical Subcommittee which puts it into a unique position to be both a small local government entity and a decision maker.

Figure 4-5 suggests that most participants came from general emergency management offices. While greater participation from other service types is favorable, emergency management agencies commonly communicate with other disciplines making it fair to assume that they were able to convey details of the plan with other agencies in their area.

Arkansas

In late summer of 2007, the Arkansas Department of Information Systems (DIS) and Department of Emergency Management (ADEM) assembled a group of stakeholders to develop the SCIP. A statewide interoperability governing body (SIEC) was not established prior to the

SCIP development process. Unlike most states, stakeholders were chosen and participation was not voluntary. DIS and ADEM used the existing structure of AWIN to determine who should be involved in the policy development process. “Participants were selected to ensure representation from all emergency response disciplines, key non-governmental stakeholders, regions of Arkansas, and levels of government” (ARSCIP).

Public safety officials involved in the SCIP development process met during a stakeholder meeting and a strategic planning session over the course of 3 months to map out a vision for the SCIP. Several interviews were conducted after the initial stakeholder meeting with a group of participants from across various disciplines and regions. Information obtained during the interviews were included in the SCIP and helped to inform the strategic planning session. Finally, interviews were conducted with the Little Rock Metropolitan Working Group who developed the Little Rock Metro TICP. Information from the TICP was integrated into the SCIP. The Little Rock Metropolitan Working group was invited to the strategic planning session and reviewed drafts of the SCIP. Arkansas did not hold any regional focus groups due to time constraints (ARSCIP).

- STEP 1: DIS and ADEM selected officials to participate in the planning process and held an initial stakeholder meeting.
- STEP 2: DIS and ADEM conducted interviews which yielded input from a group of stakeholders and helped to inform the strategic planning session.
- STEP 3: DIS and ADEM held a final strategic planning session.

Arkansas included 37 organizations in the development of the SCIP and participation was not voluntary; state officials chose the participants. Figure 4-6 illustrates Arkansas’ lack of internal density. None of the participating organizations appear to be very close which may have been one reason why Arkansas had such a difficult time facilitating local participation in the

beginning. Arkansas' model does show that structural holes were present. This is beneficial because external ties allow organizations to gather information from outside of the group.

The Arkansas DIS (30, 83.33) and DEM (30, 83.33) offices each have the same degree centrality score which indicates that they are linked to more organizations than any other actor. This is likely because of their joint role as group leaders. The first number in the degree score indicates that the organization had ties to 30 out of 37 other organizations in the network. The Little Rock Metropolitan Working Group also had a number of ties with other organizations (8, 27.77) which would suggest that Little Rock provided more input than other participants. Those same organizations also share the top three closeness and betweenness scores, DIS (85.71, 45), DEM (85.71, 45), and the Little Rock Working Group (56.25, 30.95), meaning that all three serve as gatekeepers and lie on the shortest path from one organization to the next. These three groups have an opportunity to influence and be influenced.

Although there were only a small number of organizations involved in the development process, information flowed smoothly from local to state agencies, who were in this case the final decision makers. From Chapter 3, we know that local buy-in was initially difficult for Arkansas officials. Development of the SCIP may have provided an opportunity to include more local agencies and quickly increase buy-in.

Figure 4-7 shows that Arkansas officials included only two fire agencies and one medical group, though they claim that participants were chosen in an effort to be inclusive.

Rhode Island

Due to its geographic size, Rhode Island was not broken into regions for development or implementation of the SCIP or RISON. The Communications Working Group (CWG), which has the primary responsibility for communications planning and interoperability, includes local, state, and federal agencies as well as non-profit and private organizations.

Throughout the planning process, RIEMA staff led the SCIP planning effort and worked with the CWG to develop planning meetings and conduct interviews. Both groups sought out information from various stakeholder groups and conducted briefing sessions and interviews with the Association of Fire Chiefs, the Police Chief’s Association, the Local Emergency Management Director’s Association, the Narragansett Indian Tribe, the League of Cities and Towns, the Citizens Corps Council, the Hospital Association, the National Guard, and the United States Coast Guard.

The dense cluster of organizations on the left are members of the CWG. This group sought out information from general organizations and unions, such as the Fire Chiefs Association. This seems like a good strategy because these groups have many stakeholders, but we do not know if these stakeholders were consulted. The two actors in the center are representatives from RIEMA who were responsible for interviewing the organizations on the right. Figure 4-9 shows that even CWG members interviewed, giving these organizations the ability to provide additional input.

The RIEMA representatives served as gatekeepers, controlled the flow of information, and serve as the most influential members of the network. Both have a closeness score of 100, meaning that they are connected to everyone in the network. They also have the greatest number of ties with other organizations (31), though the Rhode Island Association of Fire Chiefs and the Police Chief’s Association (25) also have a large number of ties. These scores demonstrate that everyone in the network is directly connected to the most influential decision makers.

Finally, like most of the states in the analysis, Rhode Island has included a reasonable number of diverse government levels and service types.

Texas

The development of the SCIP began by using the information and guidance of several plans already completed in the state: the Texas Radio Communications Interoperability Plan

(TRCIP), the Texas Statewide Interoperability Channel Plan, and the SAFECOM SCIP

Methodology.

- STEP 1: In May of 2007 the Texas Director of Homeland Security asked the TxRC to update the Radio Communications Interoperability Plan (TRCIP) according to SAFECOM's guidelines, essentially revising the TRCIP and turning it into the SCIP. The TxRC worked with the Texas Association of Regional Councils (TARC) to conduct a survey that would inventory the communications assets of first responders across the state. Representatives from each region completed the public safety survey and the results of these surveys were used as a guide and discussion tool during focus group meetings. More than 1000 surveys were completed and returned for analysis. Of the 24, it was determined that 12 regions did not have the necessary radio coverage to perform their jobs effectively (TxSCIP).
- STEP 2: The TxRC facilitated 27 focus groups in each of the various regions. The TxRC was responsible for managing and administering the meetings, group sessions, research and data collection, and the overall development of the SCIP. After the sessions were completed, 25 regions submitted reports that prioritized their communications concerns into "hot topics." Each focus group region sent their top 5 "hot topics" to the TxRC to be considered for inclusion in the SCIP. Over 100 hot topics were converted into critical initiatives and were included in the SCIP.
- STEP 3: The TxRC held a statewide strategic planning session to develop and prioritize short and long-term communications initiatives for inclusion in the SCIP.
- STEP 4: TxRC working groups drafted the SCIP and sent the draft to the TxRC Steering Committee and then ICTAP (part of DHS) for review. Every member of the TxRC contributed to the development of the SCIP (TxSCIP).
- STEP 5: The final version was submitted to the governor for approval and then sent to DHS.

The TxRC included 187 organizations in the development of the SCIP. The regional structure is ideal for Texas whose diverse terrain contributes to diversity among the needs of local agencies. Officials in Texas made use of existing regional councils to form a network that boasts high levels of local participation. Figure 4-11 illustrates the network of regional councils and TxRC members formed through the development process. In this model, some regional representatives and local agencies are clearly on the outside while the dense relationships between TxRC members is illustrated on the inside. Unlike Louisiana, not all regional council

managers are members of the TxRC, leaving regions who are not members to compete for their own interests. While one could argue that the TxRC has too much power, their membership is large and open to an agency who wishes to join.

Not surprisingly, the TxRC has the highest degree (93, 50), closeness (66.66), and betweenness centrality (77.34) scores. The Texas Association of Regional Councils has the second largest set of centrality scores. Its degree centrality (26, 13.97) gives the Council the ability to influence and be influenced by others in the network. Information flows directly through the network from local agencies to the TxRC and secondarily through the Regional Council (53.75). Likewise, both of these organizations serve as gatekeepers; the Regional Council has a betweenness score of 19.33. Several populous regions such as Region 16 Houston, Region 12 Austin, and Region 4 Dallas-Ft Worth, also have high centrality scores which indicate that they serve secondary roles as decision makers and gatekeepers.

As in most states, Figure 4-12 demonstrates that Texas has included a respectable combination of service disciplines and focuses mainly on the inclusion of city and county governments and emergency management services.

California

Two hundred and ten practitioners from 137 agencies were involved in the development of CalSCIP. The OES was, and still is, responsible for general statewide interoperability planning and, at the time, focused on outreach to UASI regions. CalSIEC was responsible for acquiring input from local agencies and the PSRSPC was responsible for providing the state agency perspective (CalSCIP). Both CalSIEC and the PSRSPC feel that development of the SCIP has strengthened their relationship (CalSCIP).

- STEP 1: One strategy meeting was held in each CalSIEC Planning Area and a meeting was also held among the members of the PSRSPC Technical Working Groups (TWG). The goal of these meetings was to provide stakeholders with an understanding of the SCIP

process and SAFECOM requirements. After the strategic planning meetings, CalSIEC then convened three statewide meetings which were open to the public and feedback on key issues was encouraged. The PSRSPC TWG held six CalSCIP development meetings with state agencies.

- STEP 2: Once a draft was developed, members of a working group comprised of both CalSIEC and PSRSPC members met to review the drafts.
- STEP 3: Practitioners unable to participate in any of the other meetings were encouraged to give feedback through the National Interoperability Information Exchange (NIIX).

Figure 4-13 shows that California's network includes both structural holes and one cluster of participants to the left. This cluster represents the members of the PSRSPC. The structural holes on the right illustrate that most of the direct communication with local agencies came from CalSIEC. Again, the presence of structural holes can encourage organizations to speak with others outside of the group. Conversely, there is no evidence that the local agencies who communicated with CalSIEC were also communicating with one another. The lack of communication between actors may have resulted in a lack of cohesion. Had the group been more cohesive, would they have been able to facilitate more cooperation and lobby the legislature for increased support?

CalSIEC, who was charged with acquiring information from local agencies, has the highest degree centrality score (116, 83.45). The PSRSPC (30, 20.14) and the California Department of Transportation (CalTrans) (19, 13.66) follow, giving them the most power to influence and be influenced by the group, because they have the largest number of ties with other agencies. These organizations also have the highest closeness scores (CalSIEC 85.80; PSRSPC 56.048; CalTrans 52.45) which indicates that information was flowing from the other agencies directly to the decision makers. CalTran's status seems unusual, but makes more sense when we consider that they are a member of both the PSRSPC and CalSIEC. In fact, as Figure 4-15 illustrates, most of the PSRSPC members have high betweenness scores which typically indicates that they serve as

gatekeepers. Though, the top three gatekeepers are the decision makers (CalSIEC 92.69; PSRSPC 14.14; OEC 8.55).

In California, all service types are well represented (refer to Figure 4-14). California utilizes the expertise of their UASI regions which can serve as catalysts for local involvement. Most UASI consist or more than one city and are able to connect with other local agencies in their region, giving those organizations a chance to indirectly contribute to policy development.

Illinois

Eighty-eight organizations played a role in the SCIP development process in Illinois. The SCIP was developed by members of the ITTF Communications Committee and the SIEC. Members of the document drafting committees sought out information from the other members of the ITTF and the SIEC and representatives from the drafting group would periodically brief the members of the larger organizations (ITTF and SIEC) during the process. Membership on these committees is spelled out in their charter. Local agencies cannot join the ITTF unless they have a more than 100,000 residents in their jurisdiction (ILSCIP).

Illinois officials chose these two groups for several reasons. First, they felt that their membership was representative of the larger public safety community in Illinois. Second, because the ITTF Communications Committee consists of subject matter experts in the fields of technology, training, and usage, and the SIEC would eventually govern and implement the SCIP, both organizations felt that they should have a say in the design of oversight practices (ILSCIP).

Illinois's network includes a highly dense group of actors characterized by three clusters of networks. In Figure 4-16, the SIEC is the cluster on the left, the ITTF is the large group on the right, and the ITTF Communications Committee is located in the center. The labeled organizations are members of all three groups. This level of density can lead to a lack of information flowing from and into the group; the members are representatives of larger

associations and unions and we cannot know whether they are keeping their members abreast of the group's decisions. High density reflects Illinois's relationship between its state and local governments, where it is difficult to determine who is in charge.

Fortunately, the close knit group allows each actor to be in direct contact with decision makers. The Illinois Association of Chiefs of Police (95.604), IEMA (94.565), the Department of Public Health (94.565), and the State Fire Marshall have high closeness scores. Additionally, the gatekeepers are representative of four major emergency management disciplines: fire, EMS, medical, and police. This leads to inclusion of a wide range of service types and government levels. In Figure 4-17, light blue dots denote local entities.

Washington

The SIEC had begun collaboration with Washington's nine Homeland Security Regions in 2004 to develop a planning strategy to implement a statewide interoperability system. The focus group meetings revealed a perceived negative relationship between local agencies and the state. Unfortunately, the SCIP development process in Washington was rushed because the SIEC did not begin their work until late August of 2007. On August 22nd, the SIEC conducted a SCIP workshop which many local, tribal, SIEC members, and local elected officials attended.

During the final days before the SCIP was due, the SIEC attended several association meetings to encourage collaboration with local entities. These associations included: the Association of Washington Cities, the Washington Association of Counties, the Washington Association of Sheriffs and Police Chiefs, the 911 Advisory Committee, the Washington Association of Fire Chiefs, and the Washington State Transit Association (WASCIP).

- STEP 1: The SIEC gathered information during regular SIEC and SAW Group meetings.
- STEP 2: The SIEC held information gathering sessions in each of the state's nine Homeland Security Regions.

Eighty four organizations were involved in the development of Washington's SCIP. Figure 4-18 suggests that while the SIEC attempted to include input from locals during the information gathering sessions, the organizations in the more densely populated group on the left had a closer relationship. This situation may have resulted in the acquisition of less information from groups outside of this dense relationship.

We can see from Figure 4-20 that the SIEC members (red) were communicating primarily with each other and the SAW Group. Members of both groups make up the cluster of organizations on the left. The group on the right represents the organizations who were consulted at last minute association meetings. We have no way of knowing whether these independent groups then communicated with one another. Like California, if the organizations involved had formed a cohesive group, would they have facilitated shared goals and increased support for the project externally?

The SIEC (83, 100) had the greatest number of ties with other organizations, giving them the opportunity to influence or be influenced by others in the network. Most of the time, information flowed directly from local agencies to the SIEC (100) who was the final decision maker. The SIEC representative also served as the gatekeeper, with a betweenness score of 91.45. The Washington Military Department (25, 30.12) and the Department of Corrections (25, 30.12) also served a lesser role as gatekeepers; both are members of the SAW Group.

New York

New York's current interoperability governing agencies had not been established when the SCIP was developed. The Office for Technology (OFT) took the lead on SCIP development and their program assistant, Vincent Stile, served as the coordinating manager (NY SCIP).

- STEP 1: The OFT began SCIP development by conducting informational meetings in each of the three FCC Regions. New York State did a thorough job of generating a distribution list and notifying all stakeholders of the upcoming meetings. Meeting attendees were given

an overview of the SCIP development process by the Interoperable Communications Technical Assistance Program (ICTAP) which is employed by DHS. OFT then gathered information from stakeholders who were given an opportunity to clarify their responses to a communications questionnaire (OFT Meeting Minutes).

- STEP 2: The Interim Governance Board, later the SIEC and staff from the OFT drafted and developed the SCIP.

New York invited 113 stakeholders to SCIP development sessions, though they had neglected to invite them to comment on the proposed SWN years earlier. From the structure of New York State's network we can see two distinct groups. Figure 4-22 illustrates the close knit links between the SWN Advisory Council members and the smaller group of SIEC members. The organizations to the right of the model show less density which implies that they have less power than the more densely populated group members. This situation has the potential to create an "us versus them" mentality.

The OFT (82, 73.21), the State Police (39, 44.64) and the New York State Emergency Management Office (39, 44.64) all had the greatest number of ties with other organizations. Both the State Police and Emergency Management Office are members of the SWN Advisory Council. Not surprisingly, the Region 30 and Region 55 managers along with the OFT representative served as gatekeepers with betweenness scores of 36.36, 29.22, and 11.85, respectively. This data rightfully suggests that these organizations had a great deal of power over the information moving in and around the network.

Perhaps most disturbing is the closeness score. We would like to see information flowing directly from locals to decision makers, but in this case, information finds its shortest path equally between three organizations NYSTEC (16.04), M/A – COM (16.04), and Sprint (16.04). NYSTEC is a private technology consulting firm and has advised New York State for years but M/A – COM and Sprint are private telecommunications companies who are all vying to be the state's communications provider. These private organizations attended all of the regional

meetings and their input was likely heard by decision makers several times. Their high closeness score indicates that they served as gatekeepers by conversing directly with both local agencies and decision makers, a phenomenon that is not present in any other state.

Which Network Structures Lead to Collaboration?

The first hypothesis states that collaboration is more likely when states employ a combination of dense internal relationships and open external relationships or structural holes. Louisiana is considered the most successfully collaborative state in this analysis and it utilizes a good combination of both internal density and structural holes. They have formed a cohesive internal group which has the ability to reach outside of the organization when necessary. Texas also uses a good combination of density and external reach.

It appears that states which strictly utilize regional councils have the most success with balancing both components. For example, Arkansas, California, and Washington did not use a strict regional structure during policy development and both were unable to facilitate internal density. In the case of Washington and California, we are left wondering, had they created more density, would they have been more successful?

Illinois's network is the densest and interestingly reflects the relationship between the state and local governments. Namely, there are too many decision makers and too little control. New York has two close knit groups and a group of outsiders whose input is not considered.

The lesson learned from successful states is that a strict regional structure must be utilized during policy development in order to find the right balance between dense internal relationships and open external relationships. However, the fact that Arkansas and Rhode Island were unable to find the right balance, leads one to believe that fulfillment of this hypothesis is desirable but not necessary for collaborative success.

The second hypothesis states that direct contact between participants and the decision maker increases the likelihood of collaboration. Louisiana, Arkansas, and Rhode Island funnel information from lower levels directly to decision makers. For example, locals report to regional councils who are decision makers and in some cases locals speak directly to state decision makers in Louisiana. In Rhode Island, the two RIEMA representatives are directly connected to everyone in the network.

Illinois has developed a network where information only flows between decision makers because everyone in the network is a decision maker. They neglected to include opinions from outside the group. Probably most damning is New York's use of private companies as gatekeepers (who were in the midst of bidding on a contract from the state). While these organizations were not decision makers, they were able to anticipate and control information flowing through the network. Their role in the network led to distrust and the eventual downfall of the program. From this we can conclude that direct contact is immensely important to the success of the collaborative endeavor. Finally, if there is a gatekeeper, care must be taken to ensure that that organization is trustworthy.

The third hypothesis states that network structures that include a wide range of service disciplines and government levels will be more likely to collaborate. Whether it can be attributed to the diligence of the states in the analysis or some other factor, there was no evidence that any state neglected to include a variety of services and government entities. Some states were able to include a wider range than others; for example, California, Texas, and Louisiana did an excellent job by including a large number of local organizations. Conversely, Louisiana received input from a large number of general emergency management officials and New York and Texas sought input from police.

Again, none of these actions are particularly alarming. No state asked police to work with police and firefighters to work with firefighters. Each made a concerted effort to include as many diverse groups as possible. Based on this information, we cannot conclude that fulfillment of hypothesis three will lead to collaborative success.

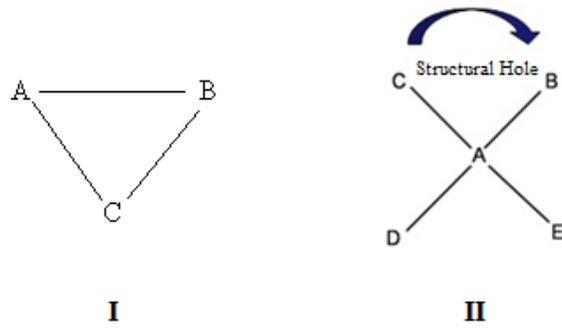


Figure 4-1. Network density and structural holes.

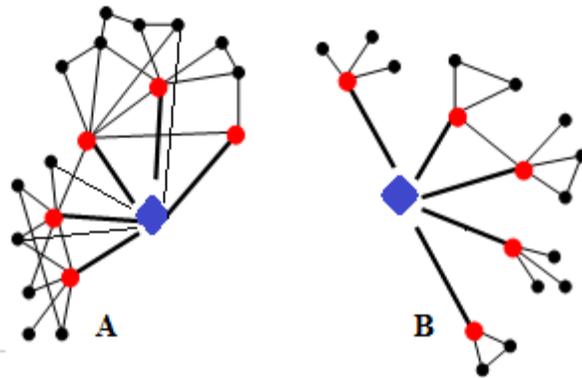


Figure 4-2. Direct and indirect ties to the state.

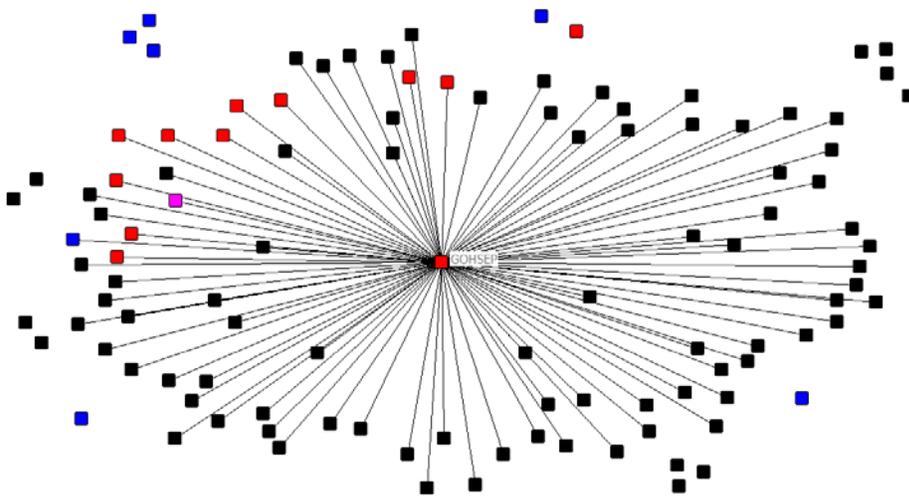


Figure 4-3. Louisiana post Katrina 2005.

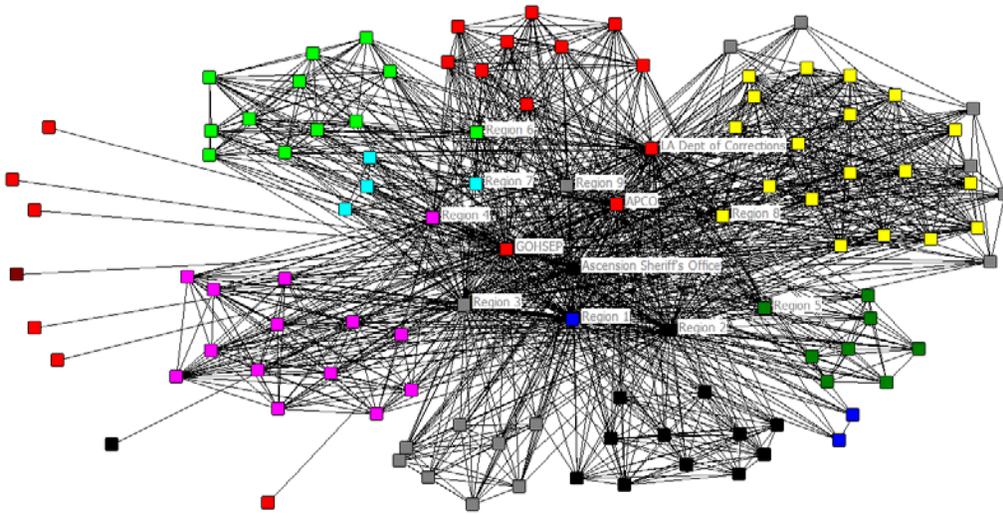


Figure 4-4. Louisiana's network model in 2007 after instituting a regional structure.

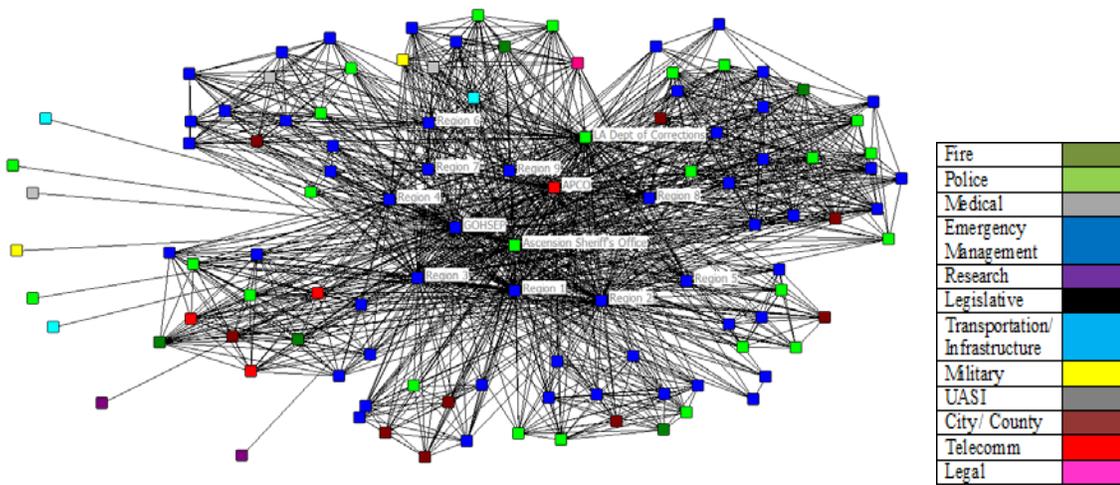


Figure 4-5. Louisiana based on service type.

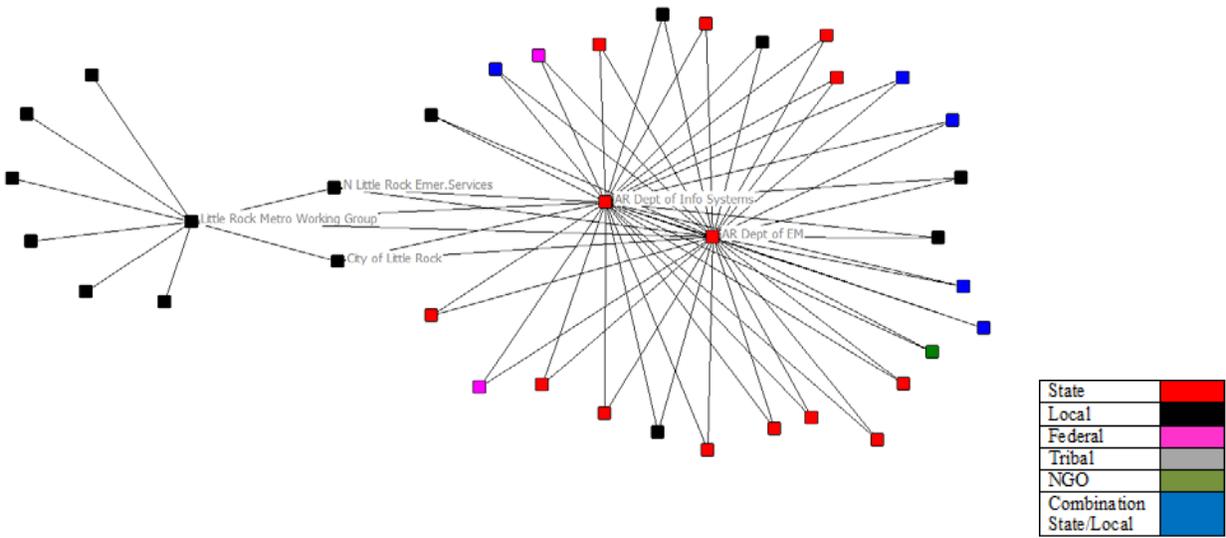


Figure 4-6. Arkansas by government type.

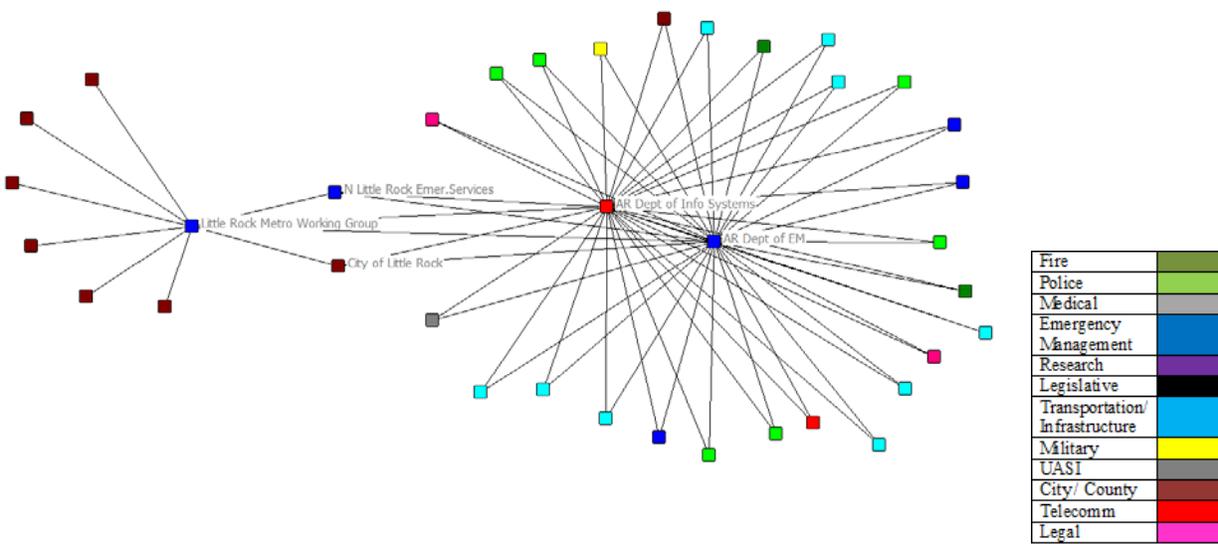


Figure 4-7. Arkansas by service type.

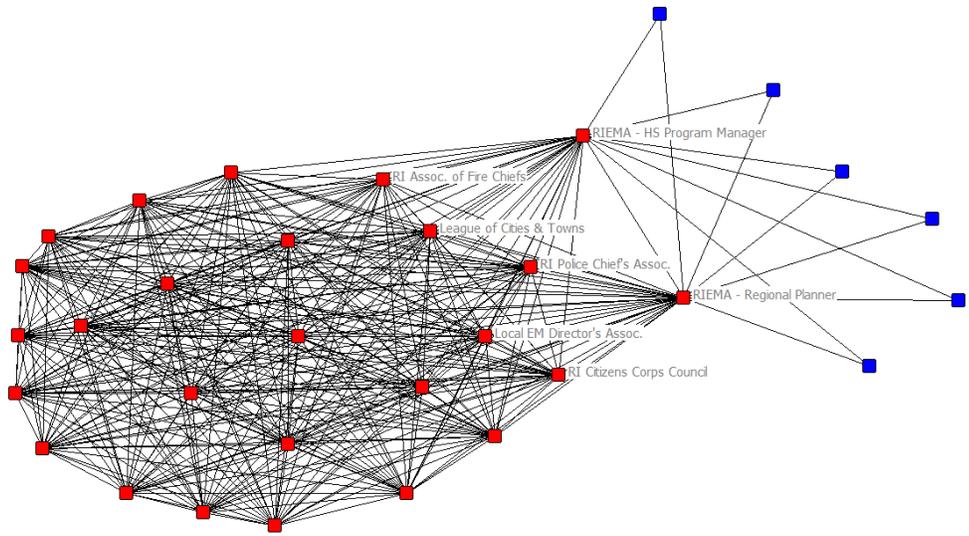


Figure 4-8. Rhode Island Communications Working Group members in red.

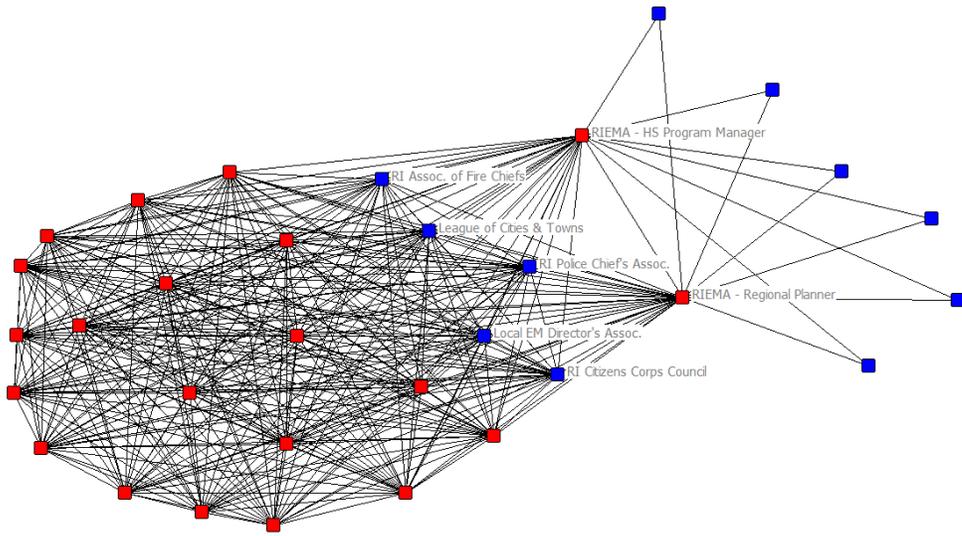


Figure 4-9. Organizations receiving an interview in blue.

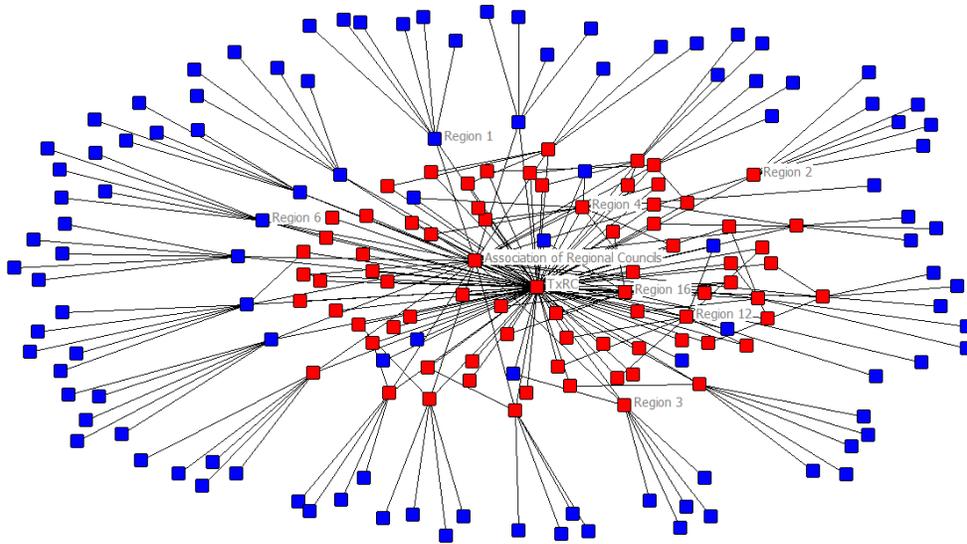


Figure 4-10. TxRC subcommittee members make up the internal portion of the network.

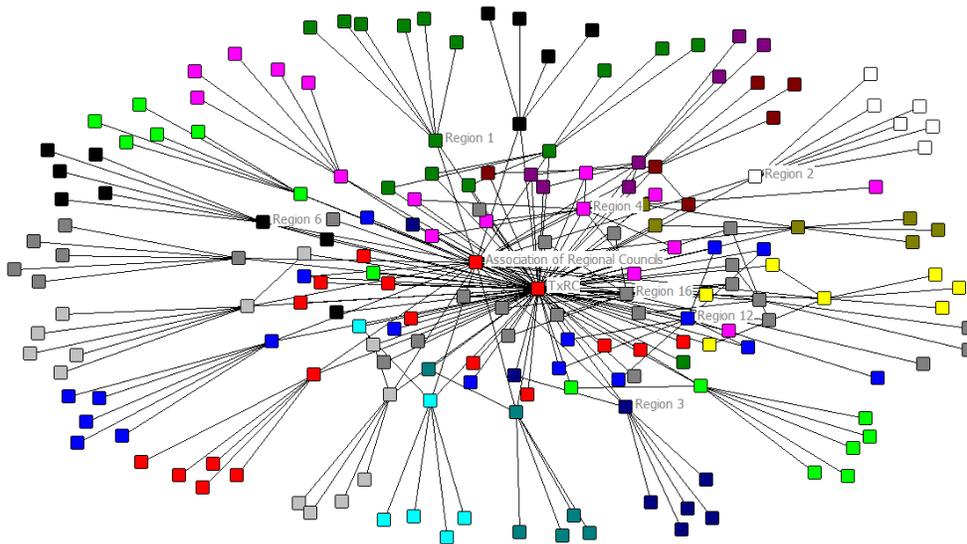


Figure 4-11. Texas based on regions.

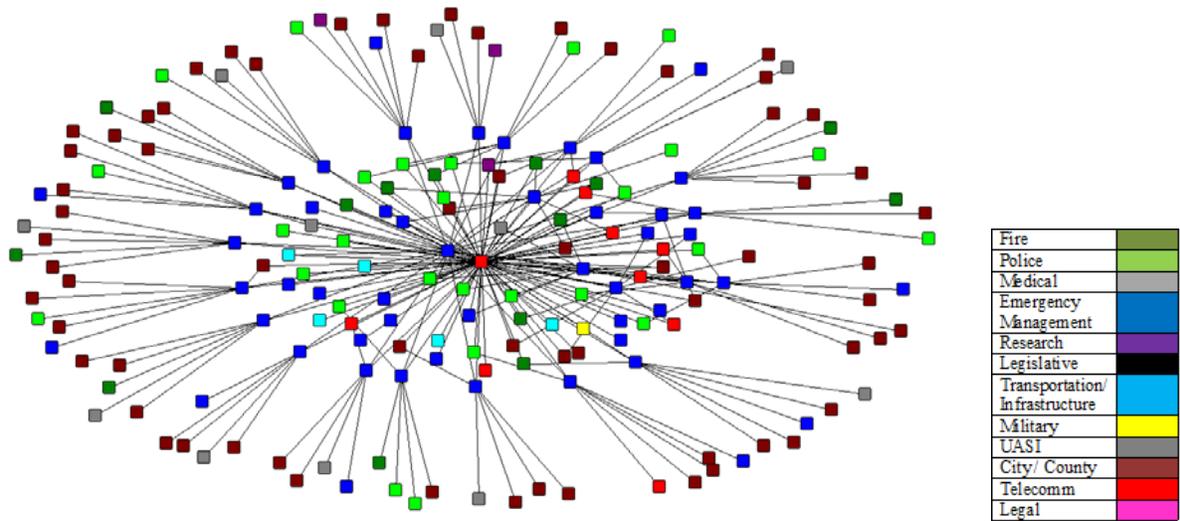


Figure 4-12. Texas based on service type.

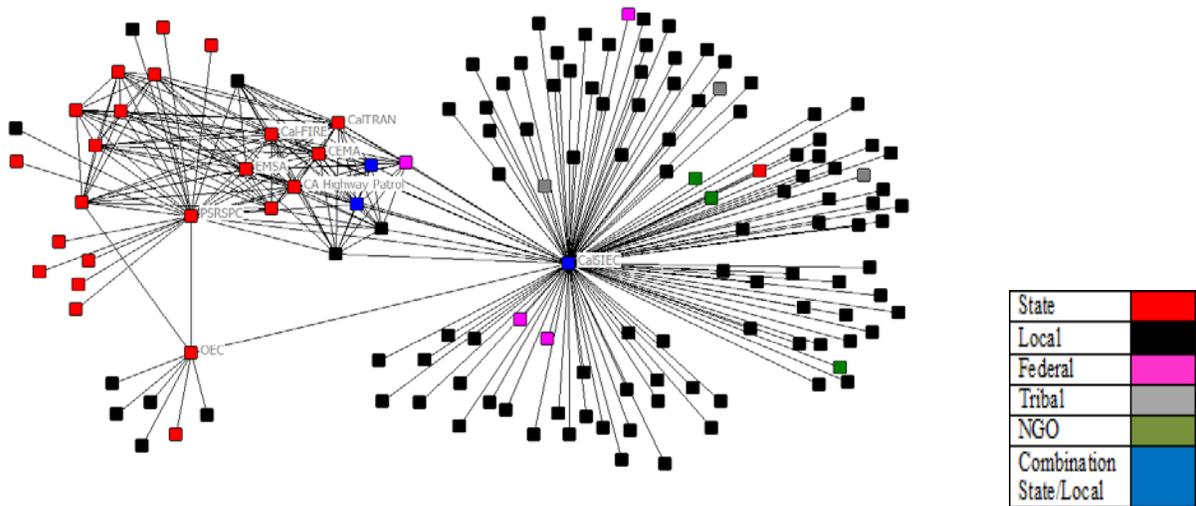


Figure 4-13. California based on government level.

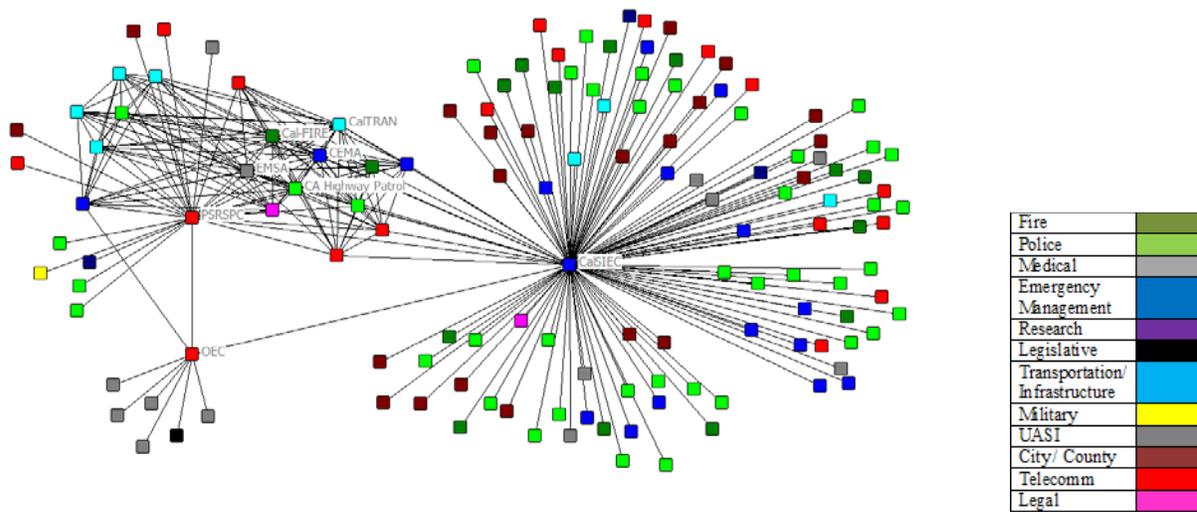


Figure 4-14. California based on service type.

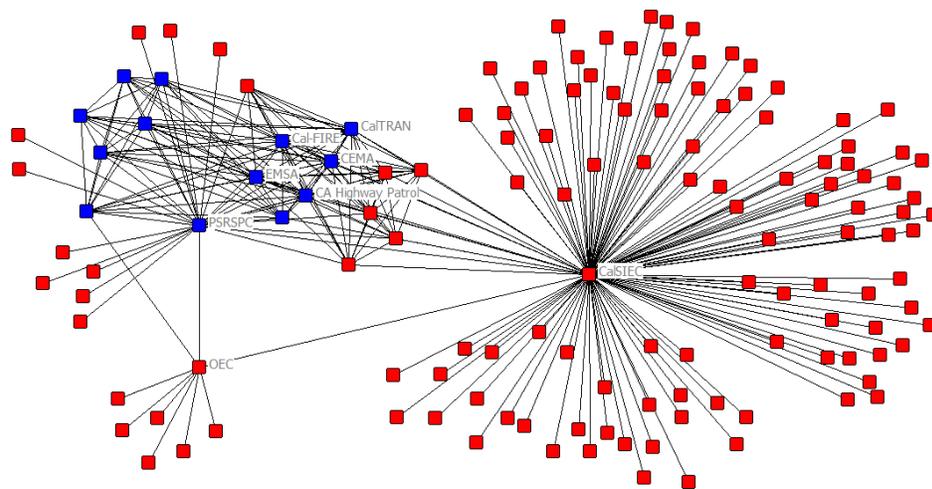


Figure 4-15. PSRSPC members serve as gate keepers.

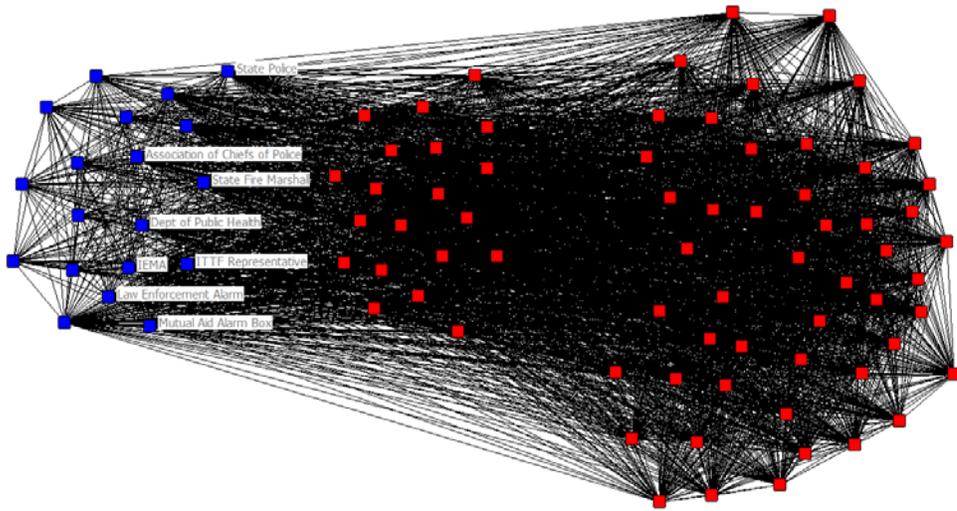


Figure 4 -16. Illinois SIEC members in blue.

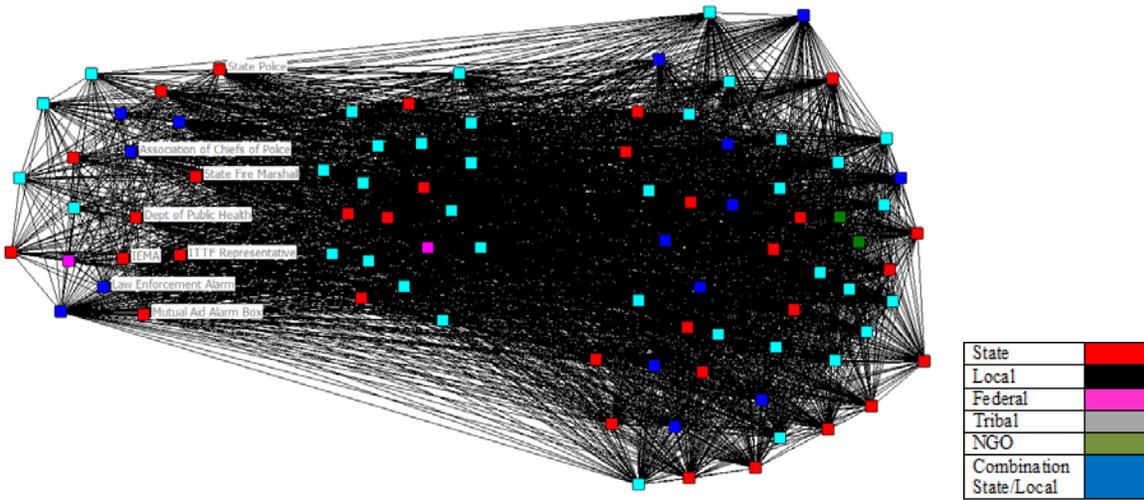


Figure 4 - 17. Illinois by government level.

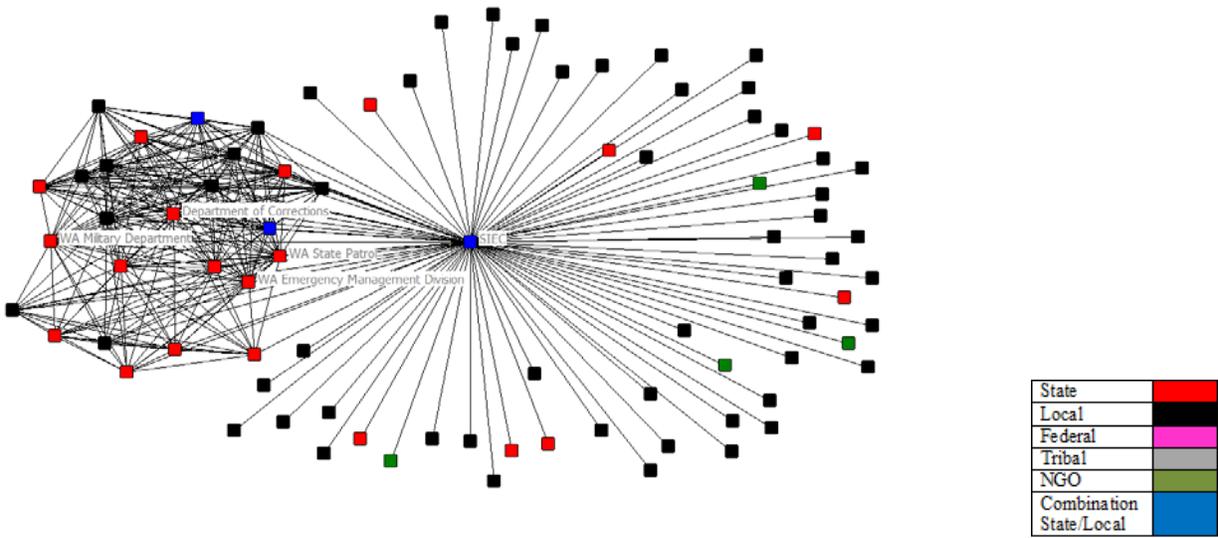


Figure 4-18. Washington's network by government type.

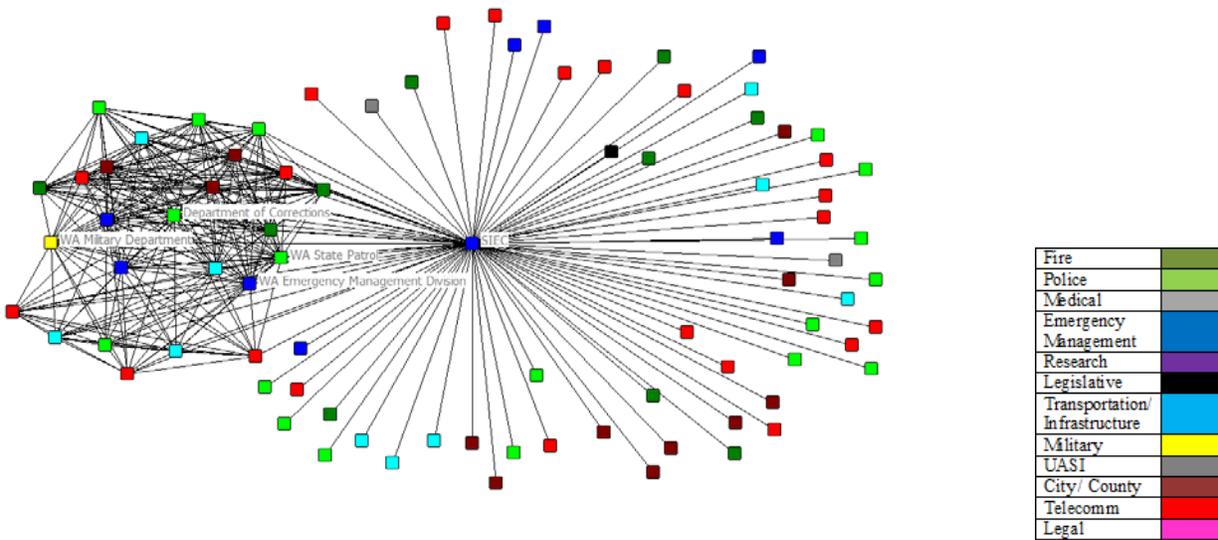


Figure 4-19. Washington's network by service type.

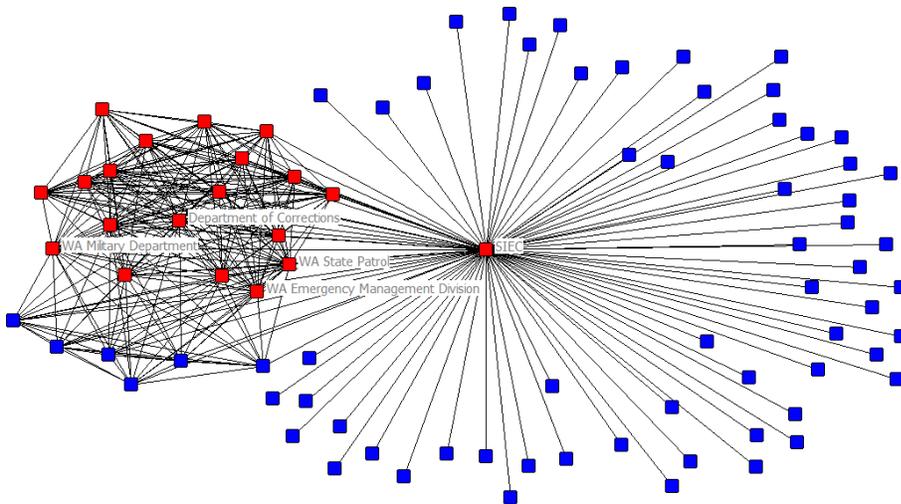


Figure 4-20. Washington's SIEC membership.

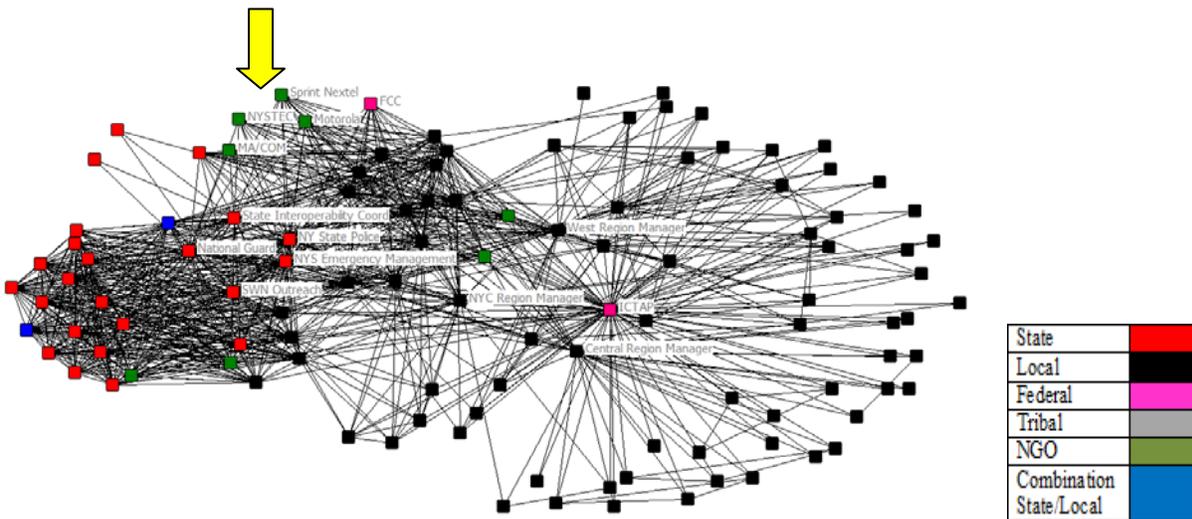


Figure 4-21. New York based on government level.

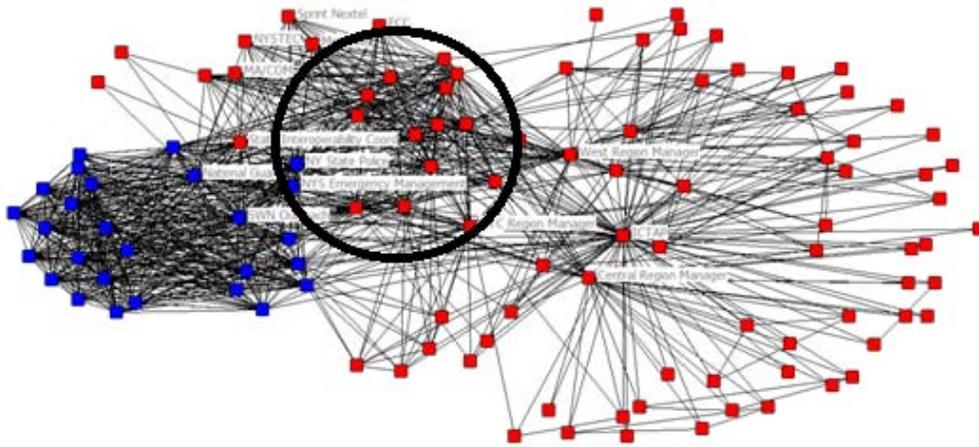


Figure 4-22. The SWN Advisory Council formed a close knit group.

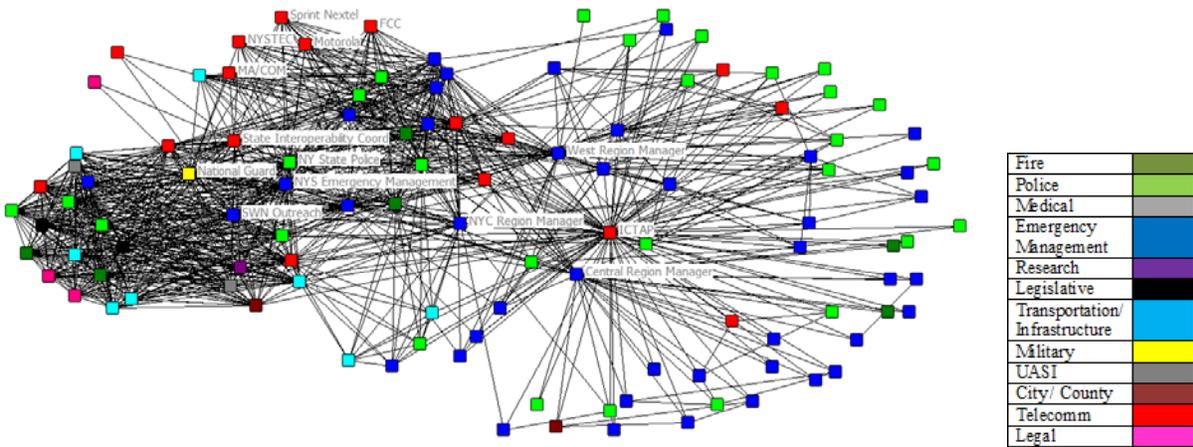


Figure 4-23. New York based on service type.

CHAPTER 5 CONCLUSION

This research examines collaboration among states and their respective local governments and asks what states can do during policy development to increase willing and fruitful collaboration with local entities. Particularly, why are some states able to facilitate collaboration and others are not? I investigate collaboration from two vantage points. First, though many states may need to overcome a historically negative and complicated relationship with their respective local governments, can they utilize political tools to increase the likelihood of success? Second, how does the structure of relationships among organizations contribute to the success or failure of a policy?

The research in Chapters 2 and 3 suggests that the “ideal” collaborative state can be achieved when states are willing to invest in policy inputs. The propositions in Chapter 3 propose that the ideal state should employ a mixed hierarchical and network approach which results in the development of regional and/or subject specific committees. Second, the collaborative effort will benefit from a strong leader or figurehead. Third, local governments will be more likely to collaborate with the state if there is a statewide network in place or, in the event that a network is impossible, the state has made plans to bridge or patch various networks together. Fourth, states who invest in a designated funding source and who help local governments find appropriate federal funding, will find that it is easier to collaborate. Fifth, states who offer professional development opportunities, especially by training locals to use the statewide network, will gain local support through education. Sixth, states who offer a memorandum of understanding or standard operating procedures to delegate responsibilities among all government levels will collaborate. Finally, as the NGA (2010) asserts, state plans or executive committees will not be seen as legitimate if they are not backed by legislative or executive action.

Chapter 2 and 3 also argues that political systems act on policy inputs and create either positive or negative policy outcomes. The most favorable political systems in the ideal state will bolster the state's efforts to foster collaboration. First, states who operate under home rule charters or who give local governments high levels of discretionary authority will be successful. Second, states with a high risk level, though beyond their control, will find that local organizations are more likely to collaborate based on a commitment to public safety. Finally, states with a large number of local units or large cities, will find it difficult to collaborate.

Chapter 4 uses network techniques to map the structure that was created in each state during policy development. This chapter seeks to evaluate how the relationships between organizations, formed at the beginning of the policy process, contribute to the success or failure of a policy. Three hypotheses are stated and considered. What level of internal density and external relationships result in greater collaboration? Does direct contact between participants and decision makers increase collaboration? Finally, do network structures that include a range of disciplines increase collaboration?

In the following section I explain why each state was or was not able to successfully collaborate and what contributed to this success or failure. I then conclude with recommendations or keys to collaboration, based on what the data demonstrates.

Louisiana

In the past, Louisiana's state and local governments had a difficult time collaborating. Before Katrina, the state adhered to a strictly hierarchical structure which did not garner much support from local officials. Then, everything changed...

Hurricane Katrina, while tragic, was the catalyst for development of numerous emergency management policies. All communications networks were completely decimated in the storm and local and state agencies were embarrassed by the mishandling of emergency management after

Katrina. Collaboration between and among federal, state, and local agencies became essential. All levels of government had an unprecedented desire to come together, identify their most pressing problems, and develop a solution.

Louisiana has implemented a combination of subject-specific and regional committees through the SIEC to ensure that everyone who wants to be involved can be. Louisiana's 2007 SCIP development network includes an exceptional balance of both internal density and external range. Local entities communicate directly with regional representatives who are decision makers. Some local organizations communicate directly with state decision makers and other locals are involved first-hand in the decision making process.

GOHSEP took the initiative to bring together state, local, and federal officials and develop a statewide plan that serves the needs of all organizations. Both Governors Blanco and Jindal have also been supportive of LWIN and numerous state officials have provided necessary oversight and leadership such as Brant Mitchell of the SIEC.

With regards to incentives, the amount of federal and state funding that has been dedicated to this project makes the decision to buy-in very easy for local agencies. The Louisiana Legislature has designated recurring funding from the state's general fund to pay for all of LWINs maintenance fees. Use of LWIN is basically free for local governments; only a few agencies had to buy P25 compliant systems. This caused an increase in LWINs users and has sparked positive interest from local agencies who encourage the state to complete LWIN (Mitchell 2009).

State and local agencies are not required to adopt LWIN but usage has become more and more popular; on average over 1,000 users are added each month (Radio Reference, 2010). There are no other viable multidisciplinary, multijurisdictional communications networks

available in Louisiana and so far, complaints about the effectiveness of LWIN have been minimal (Radio Reference 2010). All of these factors combine to make LWIN an attractive system for both state and local public safety agencies.

Arkansas

Arkansas has a small, mostly white, and largely poor population. While the homogenous nature of the state does not contribute to its success, its small population does make collaboration easier because there are fewer people and populated areas to oversee. Its largest city, Little Rock, has a population of only 184,564 people. Furthermore, Arkansas has only 547 cities and counties, with small populations.

Governor Mike Huckabee provided support for interoperable communications and the AWIN system early in the development process. This support encouraged state legislators to set aside a yearly revenue source for development of AWIN. The development of AWIN has significantly increased collaboration between the state and local governments. At first, local governments were uncertain about the system but a series of tornados and floods gave them an opportunity to utilize the state's technology. AWIN continues to expand its membership. There are very few reasons why local governments would not adopt AWIN because there are no user fees associated with usage of the system. Most local agencies must purchase P25 compliant equipment but the state provides some funding assistance and has designated federal grant money toward the purchase of radios.

ADEM provides training for any state and local agency who uses AWIN. They also provide training to agencies that do not use AWIN but who communicate with agencies who are on the system. State and local agencies must sign a memorandum of understanding to use AWIN which clearly sets out the goals and responsibilities of each user. Finally, communications governing bodies in Arkansas, the AICC and the AICEC, were created by executive order and a

designated funding source was established through Act 1255. This gives these organizations the power necessary to manage and enforce the goals of the program.

State officials chose which organizations would be involved in SCIP development. While there were only a small number of organizations involved, information flowed smoothly and directly from local to state level decision makers. Their network map was not dense, which would suggest that a strong cohesive bond was not formed during this process. We know this is true because Arkansas had a difficult time acquiring buy-in at the beginning of the process. They were able to overcome this based on three factors: strong leadership, a perceived high risk level among first responders, and well managed funding sources.

Rhode Island

Rhode Island's size provides it with a significant advantage when it comes to collaboration. The entire state has only five counties and most government operations are already centralized. Not surprisingly, state officials chose a traditional hierarchy, as the governance structure and the policy development network reflects this choice. Rhode Island's network model shows that the primary decision makers were directly connected to everyone in the network. The dense cluster of organizations in the model are the members of the CWG and the organizations to the right are independent. The network is small and only utilizes the expertise of one group. The dense cluster and small size of the network leads us to believe that that information was limited to those organizations already in the group, although we cannot be sure and hope that this is not the case, because most organizations were associations or unions with outside members.

Rhode Island established a mini- system of systems approach, linking regional networks with one another to create RISON even though the state itself was not at risk for a natural disaster or terrorist attack. The state has managed what little funding they have well by using

PSIC money to buy equipment for local agencies leading to increased buy-in. Furthermore, the members of the CWG and former Governor Donald Carcieri provided the necessary direction, motivation, and leadership to achieve success.

Texas

Texas is at risk for natural disasters including fires, tornados, hurricanes, and heat waves. Furthermore, border security continues to be an issue and the large numbers of oil refineries pose the risk of a possible terrorist attack or oil spill due to negligence, leading one to believe that collaboration is necessary. Governor Rick Perry has been supportive and TxRC Chairman Peter Collins has provided leadership and direction for interoperable communications in Texas.

The TxRC includes numerous local participants; anyone from a public safety organization can apply to become a member. The TxRC was established via legislative action, giving it authority to act. The TxRC is broken into subject specific committees and the state as a whole is divided into 24 regional governments which coordinate resources and provide services to the citizens of that district. Whether agencies choose to adopt the Channel Plan or not, they are required to participate in the communications planning activities of their regional council.

One might argue that Texas's historical distrust of a strong executive and the resulting lack of power for both cities and counties, would lead to reduced collaboration. However, the lack of collaboration is more a result of their inability to secure state funding and the diverse terrain in Texas which has made it difficult to expand the channel plan. In fact, I hesitate to put Texas in the moderate category because the state boasts the most developed regional structure of any state in this analysis. Their network structure includes an excellent combination of internal density and external range. To say that they are not collaborating is simply untrue; however, while it can be attributed to factors beyond their control, Texas's Channel Plan is not being utilized as frequently or by as many agencies as some other state networks. Even though the state has

worked to include many local and state agency representatives in the policy development process, only 1,560 of the state's 5,300 public safety agencies operate on the Channel Plan (TxRC). For Texas, funding and geography supersede their ability to develop a statewide network and increase collaboration.

California

California has the largest and one of the most diverse populations in the U.S. Furthermore, California is considered a high risk state for possible terrorist attacks and natural disasters. The federal government has designated 5 regions as UASI in California due to their high risk level. California's large population and high risk designation make it, on one hand, less likely that they will collaborate because of the sheer number of people that need services. On the other hand, a high risk level should attract collaboration.

Both Governors Grey and Schwarzenegger have provided nominal support for interoperability efforts but neither has secured funding, which has turned out to be California's 'Achilles heel.' The California Legislature has not been willing, or able, to establish a dedicated funding source for emergency communications. Most local and state organizations have received funding only through federal grants. Recently, state and local officials were cited for mismanagement of federal funds, making the federal government less likely to be so generous in the future.

California already suffers from a lingering negative relationship with its local governments. Voter referendums, especially Proposition 13, have had unforeseen consequences, such as a decrease in state aid and an increase in state unfunded mandates. This however, has not been the major barrier to collaboration. A lack of funding coupled with California's diverse terrain makes it difficult to establish a statewide network. Officials elected to create a System of Systems (SoS) approach which links existing networks with one another. They believe that by

using existing networks, rather than replacing them, local agencies will be more likely to buy-in to the state's plan, but the lack of funding has made it impossible to start implementation.

What California's public safety officials do have is pride as innovators in the field of emergency management. California developed many of the programs that the federal government has now adopted. Along those same lines, no one person has contributed more than any other to emergency communications in California. Rather, many people from both state and local organizations have contributed to California's success over time.

California's network structure included a large number of structural holes which suggests that organizations were participating but were not forming a cohesive bond. After analyzing the network used for SCIP development, the question remains: if more local governments had been included in the development of the SCIP or had there been more communication between them, would they have been able to form a stronger coalition, lobby the legislature, and win support for their project?

Illinois

Two-thirds of local governments in Illinois operate under home rule charters because of an amendment to the 1970 Illinois Constitution. The citizens of Illinois and even the Illinois Supreme Court are supporters of home rule and in many cases the state has very little authority to act against local governments. While increased discretion is generally seen as a benefit, it has become an obstacle in Illinois. Increased power has made it difficult for local governments to collaborate because they feel that they must constantly defend their authority. Furthermore, Illinois has more local governments than any other state, over 6,700. The sheer number of local entities has made it necessary for the state to create support offices that serve local governments.

SCIP development was a closed process, very few local agencies had a say in SCIP development. Many members of the STARCOM 21 Oversight Committee and SIEC are also

from state agencies or populous regions. The state utilizes a combination leveraged and traditional governance structure which does not include the decentralized measures necessary for collaboration. This created a development network that was predictably dense, with very few links to organizations or actors outside of the network. Interestingly, Illinois' network reflects the reality of state and local relations in the state, many actors seeking power and very little indication of who exactly is in charge.

We found in Chapter 3 that most states do not necessarily need formal authority for their governing bodies to be successful. However, states in Illinois' position, with many local entities and confusion over which organization is in control, might prudently consider legislative or executive authority. The SIEC is governed through bylaws which limit its power. A charter would allow them to set their own rules and exercise more power.

While Illinois has used state and federal grant funding to buy STARCOM 21 radios for some state and local public safety providers, there are still many organizations who must buy their own equipment if they want to participate. At \$4,000 to \$6,000 a radio, this is not an inexpensive task. STARCOM 21 users must also sign an agreement administered by Motorola and the STARCOM 21 Oversight Committee before they can begin use. This is common in all states with a statewide network; however, a \$53 fee per month per radio is uncommon. STARCOM 21 offers reliable coverage and is maintained by a reputable telecommunications company; however, there are some issues with Motorola and the lack of competition surrounding its contract with the state.

Illinois' success can be attributed to the development of a statewide network and the designation as a high risk state. However, the state could be more successful if it were not for the confusing number of local entities and lack of leadership. Also, while STARCOM is the major

communications network in operation throughout the state, there are also many other discipline specific networks being used by the various public safety agencies. The state has not been able to encourage autonomous and powerful local governments to adopt the statewide network.

Washington

Washington State is considered a moderate risk state by the federal government. It is home to several critical infrastructure areas including federal, military and port assets. The state also hosts many large manufacturing companies (Lockheed Martin and Boeing) which provide goods and services to the military and to private airlines. Finally, they are at risk for such major disasters as earthquakes, tsunamis, and volcanoes.

Washington State has adopted a regional approach with subject specific committees and an SIEC; however, local governments are not well represented on the SIEC. Due to time constraints, the SIEC made most of their decisions by consulting a close knit group. This resulted in a network structure that is densely populated on one side, with numerous structural holes on the other. In this case, one might argue that there are too many structural holes making it difficult for independent groups to communicate with one another. Like California, if the organizations involved had formed a more cohesive group, would they have been able to increase outside support for the project?

Washington officials have made use of federal funding but have received very little state support or funding for communications related projects. Washington has contributed far less funding to interoperable communications than other states in this analysis. The only states who have contributed less, California and Texas, have received a greater amount of federal funding.

With regard to technology, the diverse terrain in Washington makes it difficult to patch even existing networks. The state plans to develop a “multiple systems” model much like California’s SoS but has not yet been able to secure the necessary funding to do so.

Washington's "political systems" would at first glance appear to be its strength. Unfortunately, like Illinois, too much of a good thing (local autonomy) can backfire and result in nothing actually being accomplished. Washington has in general taken more of a carrot versus a stick approach. The state has adopted a relaxed form of home rule which also does not lend itself to greater control over local communications systems. In fact, the SCIP continually mentions that the state was by no means trying to preempt the power of local governments.

The SIEC was established through legislative action but serves only as a subcommittee of the Information Services Board. This creates a problem because the SIEC provides Washington's only form of leadership on emergency communications issues though it has very little power to act. In most states, this lack of control might not matter, but in a state where relaxed home rule has resulted in local governments who feel that their power is being usurped whenever the state asks them to complete a joint project, increased control might be necessary.

New York

New York State, especially the city, is considered at high risk for terrorist attacks and cold weather related natural disasters. Furthermore, the state hosts many large events and is home to numerous critical infrastructure sites, which also add to the potential for terrorist activity. This fact alone should lead to collaboration.

New York's Constitution allows home rule for counties and cities, but home rule is only symbolic. The New York Supreme Court ruled that state doctrine preempts home rule so whatever power the state gives, it could just as easily take away. Furthermore, the relationship between the state and the city is precarious.

Initially, New York had plans to develop a SWN but state officials proceeded to develop the network without input from local practitioners. At that point, the legislature stepped in and formed the SWN Advisory Council which they hoped would provide outreach to local

governments but the same problems persisted. Motorola and M/A-COM fought over contract bids and were accused of secret lobbying efforts. After years of subpar results, the contract with M/A – COM was dissolved.

The original governance structure was confusing for local officials. This structure is in the process of consolidation and a new governance structure has not been completely decided upon. No one individual or group has provided the necessary leadership to bring together state and local officials.

Perhaps the most disturbing revelation about New York’s SCIP development network was the role that private organizations played in the decision making process. Both Sprint and M/A-COM were considered gatekeepers, controlling information flowing in and through the organization. This phenomenon was unique to New York; no other state utilized private company input to this extent during policy development.

Considering the amount of funding that New York State had pledged to develop the SWN (\$500 million - \$2 billion), and the amount that the federal government has awarded to New York in grants, one might expect seamless collaboration. Unfortunately, there are very few incentives for local governments to work with the state. Program implementation by the state has proven to be expensive and ineffective. The state has, over time, shown local officials that they cannot be trusted. From symbolic home rule to scandal, the state has a challenging path to overcome in order to achieve successful collaboration.

Keys to Successful Collaboration: Policy Inputs and Political Systems

The top two most successful collaborative states, Louisiana and Arkansas incorporated each policy input into the final SCIP. This leads me to conclude that states that incorporate each input are more likely to be successful. Nevertheless, other states also experienced varying levels

of success and did not necessarily include all inputs. Therefore, while inclusion of each input is advisable, it is not absolutely necessary.

A regional and/or subject specific, decentralized, governance model is not necessary. Both successful and unsuccessful states utilized this structure. Louisiana and Arkansas used this structure and did well. Rhode Island, because of its small size, used a more traditional hierarchy. New York used, or at least claimed to use, a regional and subject specific approach, but it did not result in successful collaboration because of outside factors.

A designated state funding source and federal funding is helpful but diligent management and use of funding sources determines success. For example, a lack of funding hurt California and Washington and paralyzed their programs. High levels of federal and state funding were the key to Louisiana's success. Minimal funding was managed well in Arkansas and Rhode Island. New York devoted the greatest amount of funding and was still unable to be successful.

Legislative or executive action, bolstering a statewide plan or governing board, also does not necessarily translate into increased collaboration. Some states, such as Texas, had strong governing boards and did not need formal authority. Other states, such as Washington and Illinois, have created a relaxed relationship with their local governments. In this case, increased authority would be a useful tool.

Two policy inputs were identified as necessary for any state: leadership and a statewide network. Strong leaders, whether gubernatorial or simply members of a governing board, could facilitate buy-in and gather support from state legislators. A statewide network gave local officials something tangible that they could work toward that would link all organizations and require them to work together. Patching disparate networks worked moderately well for some states but did not create enough of an incentive for others. Professional development through

training and standardized SOPs assisted collaboration but was strongly correlated with use of a statewide network.

With regards to political systems, high levels of discretionary authority backfired in some states and resulted in nothing being accomplished (Illinois and Washington). In some cases, relaxed relationships did not matter because an outside, uncontrollable factor, was contributing to a negative relationship, as was the case with California. Still, some states granted their local governments home rule but it was only symbolic, as was the case with New York. Overall, states who granted their local governments a moderate level of authority, some home rule with set standards for control were most successful.

Risk level proves that factors that might be considered motivation in one state do not translate into collaboration in another. Louisiana used Katrina as a catalyst while New York has not been able to use 9/11 as a medium for increased collaboration. Rhode Island is not at risk for terrorist attacks or natural disasters but officials were concerned about the response to Katrina and 9/11 and did not want this to happen in their state.

Finally, state demographics can make collaboration difficult but overcoming this barrier depends on how these factors are handled. Illinois has the largest number of local entities and was unable to overcome the confusion. In contrast, Texas has the largest number of counties and had formed regional councils years before to reach out and integrate local officials into the decision making process.

Keys to Successful Collaboration: Networks.

The first hypothesis states that collaboration is more likely when states employ a combination of dense internal relationships and open external relationships or structural holes. States who strictly utilize regional councils during policy development have the most success

balancing both components. Inclusion of both types of relationships is however, desirable but not necessary. Several successful states were unable to find the right balance.

The second hypothesis states that direct contact between participants and the decision maker increases the likelihood of collaboration. The importance of this assertion is evident because all successful states incorporated direct contact with decision makers and unsuccessful states did not. From this we can conclude that direct contact is immensely important to the success of the collaborative endeavor.

The third hypothesis states that network structures that include a wide range of service disciplines and government levels will be more likely to collaborate. Whether it can be attributed to the diligence of the states in the analysis or some other factor, there was no evidence that any state neglected to include a variety of services and government entities. Each made an effort to include as many diverse groups as possible. Based on this information, we cannot conclude that fulfillment of hypothesis three will necessarily lead to collaborative success.

Future Research

Organizational mapping has become more common throughout the public and private sector because it provides a means for researchers and ultimately public administrators to focus on patterns of relationships that have caused the success or failure of a policy or program. In the case of emergency communication, organizational mapping can help identify where weaknesses in communication occur so that issues can be resolved and public safety improved.

The next step in this research will be to map an actual communications network and the State of Florida, who boasts high levels of collaboration and organization, provides an excellent starting point. Florida operates within a regional governance structure. The state is split into seven Regional Domestic Security Task Forces (RDSTF) that deal with general emergency management issues. The regional groups all have interoperable communications committees

consisting of radio system staff in that region (FIN, 2009). These groups meet regularly, build regional relationships, and contribute to the statewide discussion on interoperability.

“The focus on relations, and the patterns of relations, requires a set of methods and analytic concepts that are distinct from the methods of traditional data analysis” (Wasserman and Faust, 1994). I will create a survey to distribute to actors within the interoperable network. Network analysis calls for a particular type of survey, one that focuses on the existence or lack of personal and professional relationships. Each question on the survey will be accompanied by a list of names of actors involved in the emergency communications network. Respondents will be asked to list the frequency with which they communicate with specific people on specific issues. Respondents will also be given the chance to specify whether it was a specific person giving information or an organization as a whole.

Implications for Federalism and Localism

This research served as an assessment of the larger issues of modern federalism. In particular, and for many states in this analysis, the history of state and local relations began to manifest during the development of each state’s interoperability policy. Something as basic as public safety, which should have been a non-controversial issue, proved to be divisive and challenging for some states. Illinois and Washington continued to follow their historically permissive relationship with their local governments, which resulted in uncertainty over who should be held accountable and who was in control. California was unable to overcome its history of unfunded mandates and form a strong enough bond with its local governments to lobby legislators for increased support. New York could not overcome its city versus the state mentality which led to even more distrust between these two entities; the state remains hostile and the city is unreceptively autonomous.

Perhaps most interesting is what this research suggests about the future of public-private relationships and the conflict that can arise between one entity whose responsibility is to serve the public and the other, whose mission is to turn a profit. The states who were most able to achieve their goals and who were largely unaffected by controversy, were the states whose communications network was owned by the state rather than a private telecommunications company. Public-private partnerships are common and will continue to increase as government turns to contractors to provide services. This research speaks to the necessity of accountability measures to ensure that the public's best interest is constantly considered. For example, Illinois was plagued by rumors that Motorola's considerable political clout played a role in continuously increasing monthly user fees; resulting in a decrease in local trust and buy-in. In New York, private companies were present at local stakeholder meetings and played a considerable role in the decision making process. Their presence convinced those in power to make poor choices and further alienate local officials.

Private involvement in government delivery of services is inevitable and potentially desirable. However, those in power, and especially those who tout the need for government accountability should not neglect the importance of holding private contractors accountable when they also utilize taxpayer money. Furthermore, states and local governments must seek out new and innovative methods for improving their working relationships. The federal government will continue to delegate unfunded mandates and these will require states to work with locals to produce controversial joint policies. The responsibility often falls on the state to improve relationships. With this in mind, states should focus on using available political tools as collaborative inputs during policy development, increasing direct communication with local officials, and setting an example by maintaining ethical standards.

Why I chose this research topic? When I worked in the executive branch I noticed that states were having a difficult time obtaining sensitive information from the federal government because state officials did not have security clearances. I saw how frustrating this was for emergency management officials and I knew that local government officials must be feeling the same frustration from both the federal government and their state. I believe that understanding why local governments decide to willingly join collaborative efforts is fundamental to increasing public safety. I also believe that I can aid state and local leaders in their pursuit of unique solutions to address a wide variety of complicated issues by uncovering why and under what conditions government officials will make the decision to collaborate.

APPENDIX A INTEROPERABILITY BACKGROUND AND TERMINOLOGY

There are several barriers to effective interoperable communication. Clearly, agencies have different procedures, missions, and protocols, but they also operate on different radio frequencies. “Wireless technology requires radio frequency capacity in order to function and existing wireless technology is designed to work within specified frequency ranges” (GAO 2007). Varied radio frequencies have created obstacles to effective communication and, thus, have created the need for greater collaboration between federal, state, and local agencies.

First responders typically use land mobile radio systems to communicate during emergency situations (GAO 2007). Land mobile radio systems include handheld portable radios, mobile radios, base stations and repeaters. “Handheld portable radios are typically carried by public safety personnel and tend to have a limited transmission range. Mobile radios are located in vehicles and use the vehicle’s power supply and larger antenna, providing a greater transmission range than handheld portable radios” (GAO 2007). Base station radios have the most powerful transmissions and are located at public service points such as a dispatch center. First responder networks connect handheld portable radios and land mobile radios to the same communication systems. Repeaters increase the communication range of handheld portable radios, land mobile radios, and base stations by retransmitting radio signals (GAO 2007).

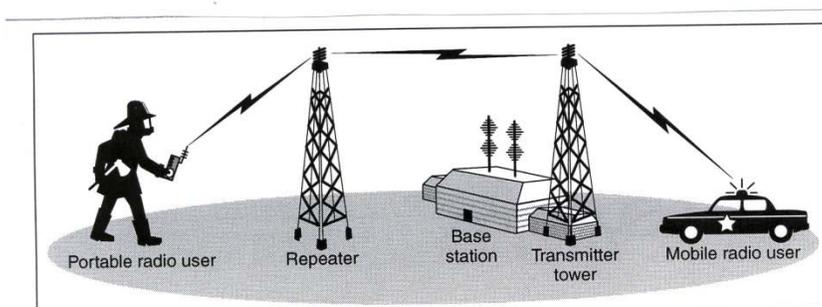


Figure A-1. Basic components of a land mobile radio communications system.

“Each communications link uniquely occupies a specific frequency or set of frequencies for as long as information is being transmitted” (GAO 2007). Radio spectrums are used for a variety of communication types including television and AM/FM radio. “Radio spectrums are a fixed and limited resource” (GAO 2007). Not every frequency band is available for emergency management agencies. FM radio stations transmit in a frequency band between 88 megahertz and 108 megahertz. AM radio stations transmit between 535 and 1700 kilohertz.

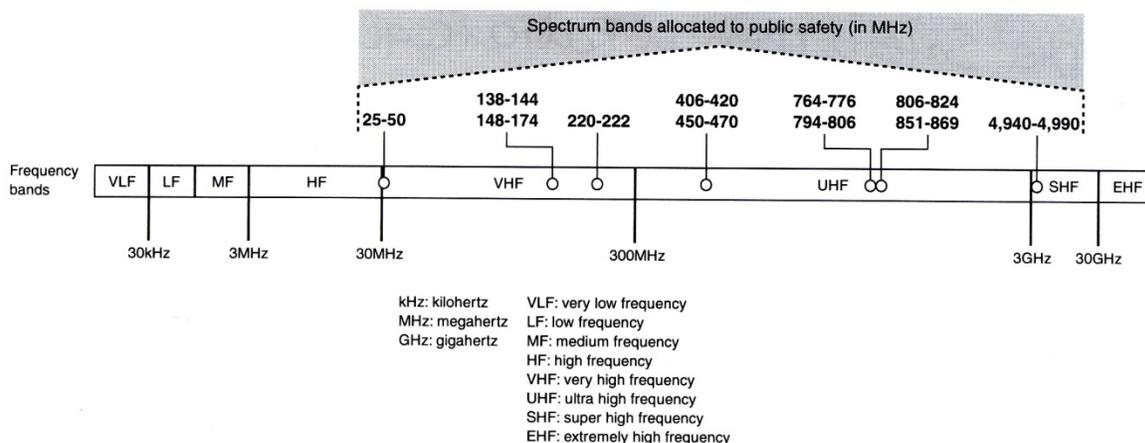


Figure A-2. Public safety agency radio frequency bands.

Public safety communications are typically transmitted in the very high frequency (VHF) and ultra high frequency ranges (UHF). VHF signals are useful in suburban and rural areas because they travel farther than UHF signals. However, UHF signals are able to penetrate buildings, making them ideal for dense urban areas (GAO 2007). The National Telecommunications and Information Administration manage the frequencies used by federal agencies and the Federal Communications Commission manages state and local frequencies.

Radio systems can be either conventional or trunked (GAO 2007). “Conventional radio systems have dedicated frequencies – also referred to as channels – assigned to individual groups of users. When a user makes a call, other members of the group cannot use the channel until the call is over” (GAO 2007). Trunked systems allot channels for use by multiple individuals. When

a call is made an available “channel is automatically selected from the pool of channels, leaving the remaining channels available for others.” Trunked systems are more complex but they reduce congestion by opening additional communication channels (GAO 2007).

The variation in radio frequencies across agencies has led to incompatible communication systems and; therefore, has hampered the ability of agencies to collaborate. The incompatibility of many communications systems can be blamed on the myriad of manufacturers who produce and sell incompatible products (GAO 2007). However, incompatibility also stems from changes in frequency bands over time. Over time agencies were assigned higher frequencies as lower frequencies became more congested. Unfortunately, older equipment cannot transmit and receive all frequency bands. Differences in equipment and frequency bands make it difficult for first responders to communicate with other first responders in different jurisdictions because technology was purchased without regard for interoperability (GAO 2007).

Agencies have developed several technical approaches for improving interoperable communications across jurisdictions. Some of these techniques include swapping radios, patching incompatible radio systems together, developing mutual aid channels, and internet based systems. Some agencies swap radios when they have a supply of extra radios. They can then lend extra radios to first responders in jurisdictions where communications are incompatible with their own. The advantage to this system is that no extra funding is needed to buy new radios, however, this approach requires high levels of management and coordination to lend the radios and then retrieve them when the incident has been resolved (GAO 2007).

Patching allows two incompatible radio systems to be connected by a central switchboard; translating one signal so that it can be received by the other (GAO 2007). The advantage of this system is that jurisdictions can use existing systems (GAO 2007).

APPENDIX B
STATEWIDE COMMUNICATIONS INTEROPERABILITY PLAN CRITERIA

SAFECOM developed a set of criteria to assist states in developing the SCIP (DHS 2007).

The criteria were developed with input from state and local officials. Individual SCIPs cannot be approved until all criteria are addressed. The following criteria are evaluated in this research project through content analysis of SCIPs and converted into data for dependent and independent variables. The criteria are taken directly from DHS documents. Source: U.S. Department of Homeland Security, *Criteria for Statewide Interoperability Strategic Plans*. 2007.

www.safecomprogram.gov/SAFECOM/library/grant/1304_fy2007.htm

- 1.1 Provide an overview and background information on the state and its regions. Include geographic and demographic information.
- 1.2 List all agencies and organizations that participated in developing the plan.
- 1.3 Each state will have a full time interoperability coordinator; unaffiliated with any particular agency or group.
- 1.4 Describe the interoperability environment of the current emergency response effort.
- 2.1 Describe the strategic vision, goals, and objectives for improving emergency response interagency wireless communications statewide.
- 3.1 Describe the method by which multi-jurisdictional input was provided from all regions.
- 3.2 Define the process for continuing to have local input and for building local support.
- 4.1 Identify the executive or legislative authority for the governing body.
- 4.2 Provide an overview of the governance structure that will oversee development and implementation of the plan. Illustrate how it is representative of all the relevant emergency response disciplines and regions in the state.
- 4.4 Identify the members of the governing body and its committees.

- 4.6 Describe multi-jurisdictional agreements needed for sharing resources.
- 5.1 Include a statewide technology assessment. This should include types of radio systems, data and incident management systems, manufacturer, and frequency.
- 6.1 Include an assessment of current local, regional, and state operating procedures.
- 6.2 Define the process by which the state, regions, and localities will develop, manage, maintain, upgrade, and communicate standard operating procedures.
- 6.3 Identify the agencies included in the development of the SOPs and the agencies expected to comply with the SOPs.
- 7.1 Define how the state will develop, manage, maintain, and upgrade, or coordinate statewide training programs.
- 7.2 Describe the process for offering and requiring training and exercises as well as any certification that will be needed.
- 7.3 Explain how the process ensures that the training is cross-disciplinary.
- 9.1 Identify committed sources of funding or the process for identifying and securing short and long term funding.
- 10.4 Describe the roles and opportunities for involvement of all agencies in the implementation of the statewide plan.
- 10.7 Describe critical success factors for implementation of the plan.

APPENDIX C
STATE INFORMATION TABLES

Table C-1. Indicating whether the state has UASI regions.

	UASI
Arkansas	No, Little Rock has been designated the state's only UASI area
California	5 in total; two Tier 1 (Los Angeles and the Bay Area) and three Tier 2 (Anaheim, Sacramento, and San Diego)
Illinois	Yes, one Tier 1 (Chicago Area)
Louisiana	Yes, two Tier 2 UASI (New Orleans and Baton Rouge)
New York	5 in total; one Tier 1 (New York City) and four Tier 2 (Rochester, Buffalo, Albany, Syracuse)
Rhode Island	1 Tier 2 UASI (Providence and surrounding areas)
Texas	5 in total; two Tier I Urban Area (Houston and Dallas – Ft. Worth - Arlington) and 3 Tier II Urban Areas (Austin, El Paso, and San Antonio)
Washington	Yes, two Tier 2 UASI (Seattle and Portland/Vancouver)

Table C-2. US Census Bureau 2009 population estimates.

	Largest city	Population
Arkansas	Little Rock	191,930
California	Los Angeles	4,065,585
Illinois	Chicago	2,851,268
Louisiana	New Orleans	354,850
New York	New York City	8,391,881
Rhode Island	Providence	626,150
Texas	Houston	2,257,926
Washington	Seattle	617,334

Table C-3. Grant totals by state from 2006 to 2010 in millions. Also, total expenditures per person based on Census Bureau projections for 2009. Sources FEMA, DHS, and National Telecommunications and Information Administration. (Granted, not all money went towards interoperable communications; some went to local agencies to put toward their public safety needs. If UASI money is removed, some states spend less than Arkansas on emergency communications.)

	Arkansas	California	Illinois	Louisiana	New York	Texas	Washington
PSIC	\$11.17	\$94 M	\$36.4 M	\$19.67 M	\$60.7 M	\$65 M	\$19.2 M
IECGP	\$646,172	\$11.5 M	\$3.9 M	\$1.8 M	\$13.3 M	\$7.26 M	\$2.2 M
UASI	\$0	\$724.88M	\$252.06M	\$35.63M	\$739.7M	\$307.92	\$51.94M
TOTAL	\$12.3M	\$830.38M	\$292.36M	\$57.1M	\$813.7M	\$380.18M	\$73.34
Expend P/P	\$4,257	\$22,466	\$22,646	\$12,711	\$41,640	\$15,341	\$11,005

Table C-4. Local discretionary authority. “Scale is 1 to 5 with 1 indicating the greatest degree of freedom from state control and 5 indicating the smallest degree of freedom.” Source: Zimmerman 1995.

	Average City Discretionary Authority	Average County Discretionary Authority
Arkansas	3.125	2.125
California	2.0	3.0
Illinois	1.8	3.0
Louisiana	1.625	2.375
New York	3.125	3.125
Rhode Island		
Texas	1.175	4.075
Washington	2.575	3.575

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BIOGRAPHICAL SKETCH

Kimberly Martin received a bachelor's degree in American government and international affairs from Sweet Briar College in 2003. She received a master's in political science from the University of Florida in 2007. Kimberly currently works at the University of Florida.