THESIS

COLORADO SCHOOL SAFETY: AN EXAMINATION OF WEB AVAILABILITY OF EMERGENCY MANAGEMENT INFORMATION

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ABSTRACT

COLORADO SCHOOL SAFETY: AN EXAMINATION OF WEB AVAILABILITY OF EMERGENCY MANAGEMENT INFORMATION

The Colorado legislature declared their commitment to school safety in 2009. Yet, in the years since, there has been no systematic analysis of how Colorado's 179 public school districts communicate disaster management procedures through various mediums. In order to begin to fill this void, this thesis reviews and analyzes online safety information published by Colorado school districts. In total, 175 (98%) of Colorado's 179 public school districts have active websites. These 175 available sites were thus analyzed to understand (1) how many of Colorado's public school districts include emergency management information as part of their websites, (2) how does this online emergency management information vary by region, setting, student enrollment, and socio-economic status of the students and school districts, (3) how many of Colorado's public school districts publish emergency management documents online, (4) how do these documents vary by region, setting, student enrollment, and socio-economic status of the students and school districts, and (5) how do Colorado public school districts frame emergency management information published online. To answer these research questions, this thesis uses qualitative document analyses to systematically assess emergency management information and documents found on school district websites.

This study found that 31% (55 of 175) of all districts in the state publish emergency management information on their website. These districts enroll 87% of all students in Colorado and tend to be larger than those that do not publish online emergency management information.

Furthermore, the Metro Educational Region, North Central Educational Region, and Pikes Peak Educational Region, which all have total student enrollments of over 100,000, are also the only educational regions where 50% or more of their districts publish emergency information online.

School districts that did not publish any online emergency management information on their website constitute around 69% (120 out of 175) of school districts. These school districts encompass only 13% of enrolled students in Colorado.

Importantly, this analysis revealed a "rural-urban" divide, with approximately 90% of school districts that do not publish online emergency management information located in more rural areas of Colorado. On the other hand, nearly 60% of schools that publish online emergency management information on their website are located within the most populous settings including the Denver Metro, urban-suburban, and outlying city regions.

In addition to the analysis of the online information, 48 emergency management documents from 35 school district websites were collected for further analysis. Over 70% of these documents encompassed an all-hazards approach, but exhibited relatively low rates of actionable advice for students (5%), teachers/staff (42%), and parents (53%). This runs counter to a growing body of literature that suggests that in order to increase public preparedness, stakeholder groups must be advised regarding what they should actually do in the face of an emergency.

This thesis concludes with a discussion of the implications of the findings and suggestions for interventions based on best practices from the field of emergency management. Ultimately, this thesis reveals the lack in uniformity in published online emergency management information across region, setting, socio-economic status, and student enrollment and suggests

new pathways for increasing the dissemination of knowledge via school websites to communicate emergency management information.

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Finally, I would like to thank my family for supporting me throughout my entire academic career. I am forever indebted for the opportunities you have given me throughout my life.

DEDICATION

I dedicate this to my friends, and colleagues. Above all, I dedicate this thesis to Lucy Hannah Carter, my partner in crime.

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LIST OF ACRONYMS

CDRA……Center for Disaster and Risk Analysis

CSSRC…….....……Colorado Safe Schools Resource Center

CSU…….….Colorado State University

DHS……Department of Homeland Security

FEMA……..…Federal Emergency Management Agency

ICS……..Incident Command System

NIMS……...……National Incident Management System

PSD……....Poudre School District

REMS…….....Readiness in Emergency Management for Schools

SEMS……..Standardized Emergency Management System

SRP…….…..Standard Response Protocol

CHAPTER 1
INTRODUCTION AND HISTORICAL FOUNDATIONS

The Federal Government of the United States has historically played a minimal role in developing and implementing education policy within individual states due to the 10th Amendment of the United States Constitution (U.S. Department of Education 2015.a). The 10th Amendment details the relationship between Federal and State powers, by explaining the concept of reserved powers, which state that if specific "powers [were] not granted to the United States [Federal Government] they were reserved to the States or to the people" (Cornell University Law School 1992). This clear differentiation between Federal and local jurisdiction has created a precedent of optional Federal guidance for state public school districts' emergency and disaster mitigation strategies.

Despite this lack of requirement for consistency across state to state preparedness, Osofsky and Osofsky (2013: 96) argue that adequately prepared schools can act as an effective protective guardian during emergency events and ultimately improve the resiliency of students. This is important because between 15% and 20% of a child's life is spent in school (Hofferth and Sandberg 2001: 306; Child's Defense Fund 2003: 95). Furthermore, schools provide a source of social capital, which matters because as "children mature, the focus of their social development shifts from parents to include peers, other adults, and schools […] Thus the social relationships that are developed in school become increasingly important as children move into adolescence" (Lee and Burkam 2003: 362). Despite the clear and important role that schools play in children's lives, health, and well-being, few academic studies have focused on the comprehensiveness of school emergency preparedness (Kano and Ramirez 2007: 400). Moreover, due to the dispersion

of responsibility and lack of standardized review of preparedness strategies, many school districts may be left underprepared.

Today, the 10th Amendment's legacy of devolved powers affects over 55 million American students enrolled within 17,000 public schools and 29,000 private schools (Council on School Health 2008: 895). Despite the lack of regulatory capability of the Federal Government within emergency management strategies for schools, the Federal Emergency Management Agency (FEMA) and the Department of Homeland Security (DHS) strongly recommend the adoption of the National Incident Management System (NIMS) to help facilitate transparency between stakeholders, community members, and first responders through "[…] a comprehensive, national approach to incident management that is applicable at all jurisdictional levels and across functional disciplines" (Department of Homeland Security 2015: 1).

As of 2014, 33 states, one of which is Colorado, mandate school districts consider Federal disaster guidelines, including NIMS, when creating school emergency and disaster preparedness procedures (The Council of State Governments 2014). Table 1.1 lists the states that have, and have not adopted Federal guidance. Figure 1.1 highlights the states that have chosen to consider and comply with Federal guidelines to inform their state specific goals and disaster/emergency management strategies (Ashby 2007).

Table 1.1: List of states that do and do not adhere to Federal guidelines

States That Do and Do Not Adhere to Federal Recommendations Concerning School Safety	
Do Adhere	**Do Not Adhere**
Alabama	Arkansas
Alaska	Hawaii
Arizona	Idaho
California	Indiana
Colorado	Iowa
Connecticut	Kansas
Delaware	Massachusetts
Florida	Michigan
Georgia	Missouri
Illinois	Nebraska
Kentucky	New Jersey
Louisiana	New Mexico
Maine	North Dakota
Maryland	Oregon
Minnesota	Pennsylvania
Mississippi	South Dakota
Montana	Wyoming
Nebraska	
Nevada	
New Hampshire	
New York	
North Carolina	
Ohio	
Oklahoma	
Rhode Island	
South Carolina	
Tennessee	
Texas	
Utah	
Vermont	
Virginia	
Washington	
West Virginia	
Wisconsin	

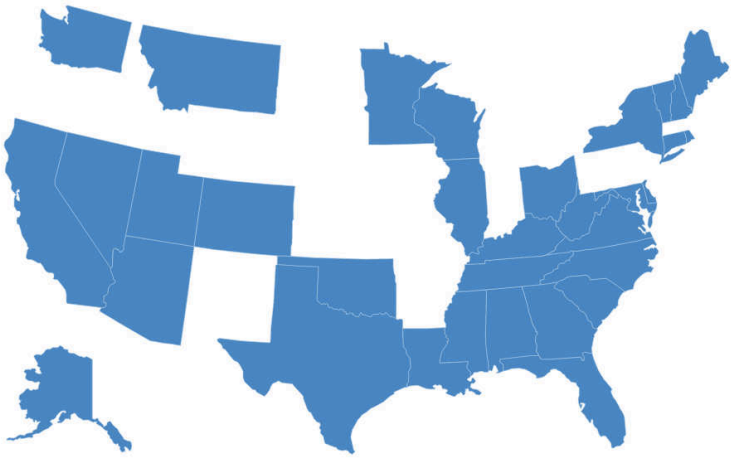


Figure 1.1: Map of states that adhere to Federal guidelines

As of July 1, 2009, Colorado's Department of Public Safety and School Safety Resource Center aligned their preparedness mission for school districts' disaster procedures to those provided by DHS and FEMA's NIMS' publications (Colorado General Assembly 2008). One of the main goals of NIMS is to facilitate an interoperable dialogue with all stakeholders to establish a common understanding of emergency management (National School Safety Center 2015; Colorado School Safety Center 2015). Furthermore, many experts underscore that this engagement between school staff, first responders, parents, and other key community members must be unified to "support schools in the prevention of, preparedness for, response to, and recovery from a disaster" (Council on Student Health 2008: 895).

Colorado is an interesting case for understanding school emergency preparedness actions, given the spectrum of student enrollment and per pupil funding within Colorado's school districts, which ranges from 10 to around 90,000 individual students per district and $6,580 to $16,123 in per pupil spending, respectively (Colorado Department of Education 2014; Colorado Department of Education 2015.A). During the 2014-15 school year, there were are more than 800,000 students enrolled in the 179 public school districts spread across eight regional

education areas, including the Metro Area, North Central, Northeast, Northwest, Pikes Peak, Southeast, Southwest, and West Central (Colorado Department of Education 2014; Sutter 2015). Figure 1.2 and Figure 1.3 display the location, physical size, and regional affiliation across the state (see Colorado Department of Education).

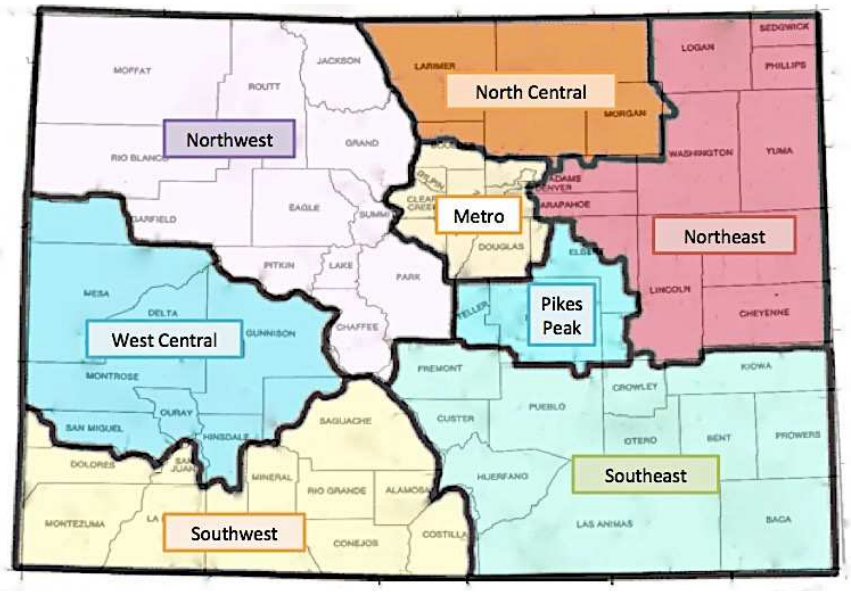


Figure 1.2: Colorado's eight educational regions

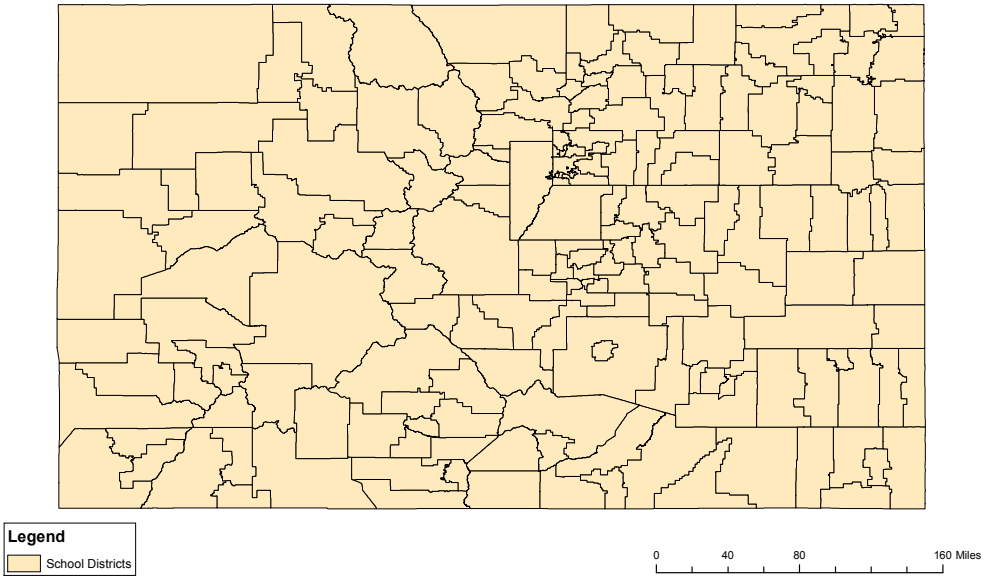


Figure 1.3: Geographic distribution of all 179 Colorado public school districts

Although it has now been nearly a decade since the enactment of Colorado's legislative commitment to school safety, there has been no analysis of Colorado's public school districts' incorporation of Federal recommendations regarding how district emergency management procedures are communicated. In order to begin to fill this void, this thesis will review and analyze online safety information published by Colorado school districts' to further understand:

> How many of Colorado's public school districts include emergency management information as part of their websites?
>
> How does this online emergency management information vary by region, setting, student enrollment, and socio-economic status of the students and school districts?
>
> How many of Colorado's public school districts publish emergency management documents online?
>
> How do these documents vary by region, setting, student enrollment, and socio-economic status of the students and school districts?
>
> How do Colorado public school districts frame emergency management information published online?

Studying online school safety materials is important. As Altheide and Schneider (2013: 5) argue, because of the growing utility of technology, "the relevance of documents in our daily lives cannot be overstated" (p. 5).

Historical Foundations of School Disaster Preparedness

This section describes the historical relationship between Federal and local powers in terms of school disaster preparedness. For the purposes of this research, disaster is defined as:

> "a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origin" (International Federation of Red Cross and Red Crescent Societies 2016).

In the disaster literature, emergencies are often treated separately from disasters. As Quarantelli explains, this is due to the greater constriction of autonomy and convergence of more unfamiliar

entities within a disaster than what occurs within an emergency situation (2000:1). Although disasters and emergencies are typically treated separately in the disaster research literature, these words are typically used interchangeably within school emergency management publications. As such, in this thesis, the terms will be used interchangeably as well, although when distinctions are important in the analysis (see Chapters 3 and 4) they will be made. Furthermore, in this thesis, emergency management will be used as an umbrella term encompassing school safety and security, which concerns emergency management within school districts as specific institutions.

School emergency preparedness has been heavily influenced by the policy sphere, as discussed below. As a prelude to the following discussion, Figure 1.4 offers a summary timeline of key legislation and events, both at the Federal and State level, related to public and school-based emergency preparedness practices.

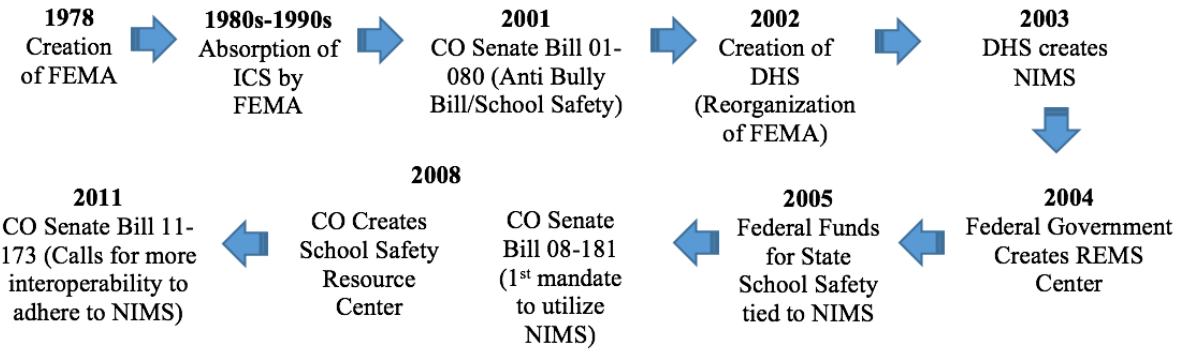


Figure 1.4: Timeline of important emergency management events

A Federal Exploration

FEMA was formed by President Jimmy Carter's Reorganization Plan No. 3 of 1978. FEMA was created on the basis of "[…] permit[ting] more rational decisions on the relative costs and benefits of alternative approaches to disasters" (Carter 1978: 2). In plain terms, FEMA was ostensibly created to cut disaster costs and strengthen the nation's capacity to prepare for

and respond to disasters. However, since FEMA's inception, many critiques concerning the capabilities of such centralized responsibility have been issued. Mushkatel and Weschler (1985: 50) describe this deep-seated skepticism towards FEMA as arising from its nebulous reorganization of centralized control, exclusion from the political protections of the Executive Branch, and its' apparent opposition with the general political inertia of decentralized functions within the United State's Federal System (Mushkatel and Weschler 1985: 50). Furthermore, after its creation in 1978, it took more than nine months for the first director of FEMA to be appointed and "Even that appointment was short-lived, for the change of administrations brought a new cast of senior personnel" (May and Williams 1986:41).

Perhaps one of the most successful practices purported by FEMA today includes the use of the Incident Command System (ICS). ICS was created through the United State's Forest Service in response to a series of deadly wildfires in California in 1970. The intent of ICS is to provide a more comprehensive command and control system that defines "job responsibilities and organizational structure for the purpose of managing day-to-day operations for all types of emergency incidents" (FEMA 2004: 2). Although not originally conceived within the confines of FEMA, ICS's subsequent evolution into an "all-hazards" management system by FEMA throughout the 1980s and 1990s profoundly shaped the direction of disaster management throughout the United States (FEMA 2004: 5). An all-hazards approach orients emergency managers to recognize many different threats and hazards and assess the likelihood that they may occur (Department of Homeland Security 2016a). This progression of emergency and safety management—as well as concurrent leadership changes—resulted in FEMA being labeled as "a particularly effective institution during the mid- and later-1990s" (Schneider 2005: 516).

After the attacks of September 11, 2001, the government's response to threats of any nature – whether intentional and human caused or natural in origin – was restructured. Indeed, as a consequence of one of the most substantial reorganizations of the American Federal Government "FEMA was moved (along with 21 other agencies) into the newly created U.S. Department of Homeland Security" (Schneider 2005: 516). Originally proposed by President George W. Bush in June of 2002, DHS was created to unify the Federal Government's effort to defend and protect the American people from terrorism and other harm by consolidating responsibilities from over 100 different government organizations (Bush 2002: 1). Under "The Homeland Security Act of 2002" FEMA's assimilation into DHS called for "consolidating existing Federal Government emergency response plans into a single, coordinated national response plan; and developing comprehensive programs for intraoperative communications technology, and helping to ensure that emergency response providers acquire such technology" (Department of Homeland Security 2002: 2213).

This advancement of a comprehensive national disaster management plan was further formalized in 2003, with President Bush's call for an ability to recover and manage domestic incidents under the National Incident Management System (NIMS) (Department of Homeland Security 2003). NIMS incorporates FEMA's prior work with ICS while attempting to universalize disaster preparedness. In short, NIMS is organized around being both standardized and flexible, representing "a core set of doctrine, principles, terminology, and organizational processes to enable effective, efficient and collaborative incident management at all levels" (FEMA 2004: 2).

Despite this inclusion of "best practices" and idyllic pragmatism within NIMS, many public administration experts identified transitional setbacks as FEMA moved under the

jurisdiction of DHS. This included approximately 20% of FEMA's positions being vacant at the time of Hurricane Katrina in 2005, as well as FEMA's shift in focus from natural disasters towards acts of terrorism (Menzel 2006: 811; Schneider 2005: 516). During this time, more outspoken critics noted the treatment of FEMA by the executive branch as inconsequential and akin to that of an "unwanted stepchild" (Krugman 2005: 2).

Nevertheless, the creation of NIMS in 2004 marked an important attempt to standardize preparedness throughout the United States' Federal Government. Not only did NIMS reiterate and reinforce core values of DHS, but it also reoriented FEMA's objective towards helping to ensure "the preparedness of our nation's emergency response, and aide America's recovery from terrorist attacks and natural disasters" (Bush 2002: 11).

To help facilitate this transition and in anticipation of school district adoption, the Department of Education created the Readiness and Emergency Management for Schools (REMS) Technical Assistance Center in 2004, which "provides a hub of information, resources, training, and services in the field of school and higher ed emergency operations planning" (U.S. Department of Education 201b: 1). Furthermore, within a year of the creation of NIMS, Federal funds for investing in disaster preparedness became tied to the adoption of NIMS and thus bolstered it as the gold standard of emergency and disaster preparedness strategies (NIMS Integration Center 2007). Despite this, the Federal Government still presents many of its latest official guides for developing high-quality emergency operations plans containing NIMS as non-mandatory guidance/policy that does not extend any law or regulation (U.S. Department of Education 2013: 3).

Although the Federal Government has been detached from formal disaster planning for individual states, the importance of Federal funding is intertwined within intrastate preparedness

and accounts for "over two-thirds of state[s'] budgets for disaster management" (Mushkatel and Weschler 1985: 51).This is an increasingly salient point, as some studies suggest that a school district's funding is directly related to their ability to exercise interagency coordination, emergency response training, and obtain a variety of emergency equipment (Kano and Bourque 2008: 55). Thus, Federal powers and policy regarding school safety have been positioned between that of a formal mandate and financial necessity, which in many ways embodies collectivist ideals and statutory authority outlined within the institutional approaches to policy (Midgely and Livermore 2009: 182).

Moreover, many states have in recent years cut back their contribution to disaster preparedness due to public perception of disaster and emergency (over)spending. Healey and Malhotra (2009) explore how the public often rewards incumbents for reactionary disaster relief and not for disaster preparedness despite "An ounce of prevention [being] far more efficient than a pound of cure" (p. 402).

Many nationwide studies illustrate a need for additional preparedness among schools. For instance, one study found that only one-fifth of schools nationwide communicate with local authorities and outside agencies in the development of their disaster and emergency preparedness protocol (Graham and Shirm 2006: 13). Furthermore, even though the adoption of NIMS is supported by FEMA and DHS through the selective awarding of preparedness grants, the United States Government Accountability Office reports that only 43% of schools actually use NIMS (Ashby 2007: 13). Coupled with this low level of initial acceptance within schools, many institutions that have already implemented NIMS reportedly have a poor understanding and execution of its principles due to a lack in consistency and continuity in knowledge of the management system (Jenson 2008: 12).

To further complicate matters, at the time that Federal funding was connected to NIMS, some states had already adopted similar disaster management procedures and applied them to school districts. For example, California's Standardized Emergency Management System (SEMS) is similar in many ways to NIMS, which may allow for an easier transfer to a now integral part of a schools' ability to receive Federal grants for disaster preparedness. However, even within schools that have publically adopted similar standards, many may not be adhering to formal procedure. This has caused researchers to suggest "that it may take several years until districts and schools nationwide are in full compliance with the newly mandated NIMS, especially where standardized emergency management systems have never been introduced before" (Kano and Ramirez 2007: 420). Although the struggle in adoption and appropriate understanding of NIMS may not have appeared immediate, states like Colorado have in recent years specifically outlined plans for their schools to follow and utilize such Federal resources.

Colorado's School Emergency Management Approach

The Colorado Safe Schools Act CRS 22-32-109.1 stems from anti-bullying legislation included in Colorado Senate Bill 01-080. Approved in 2001, Senate Bill 01-080 focuses primarily on anti-bullying policy. It does, however, include safe school reporting requirements, designs for a safe school plan, and an expansion of responsible parties for drafting such protocol. Additionally, under the bill, Colorado now requires that school districts submit annual reports to the Colorado State Board of Education to insure their fulfillment of these initial provisions (Colorado General Assembly 2000a.; Colorado General Assembly 2001b.).

Although not explicitly stated in the bill, the political climate associated with violence in schools may have spurred the writing and passage of Senate Bill 01-080. Furthermore, despite this early bill only providing cursory regulations for school safety, its focus on empowering local

school districts to take on specific actions marks the first step towards the age of individualized responsibility within school safety management in Colorado. However, it was not until 2008 when a more substantial and comprehensive Colorado policy was approved to provide more structure and guidance to emergency and disaster management in school districts.

Colorado Senate Bill 08-181 represents the largest advancement for Colorado in terms of standardizing its emergency protocol within school districts and bringing that work into alignment with specifications from the Federal Government. This most recent bill made NIMS the new standard for organization and maintenance of disaster and emergency protocols, with the Colorado Legislature declaring that school districts' must have "Key emergency personel, including but not limited to safety teams and backups, [and] complete courses provided by the Federal Emergency Management Institutions or by institutions of higher education in the state system of community and technical colleges" (Colorado General Assembly 2008: 4). This bill passed by a large margin and with strong bipartisan support. The staff summary of the House Committee on Education identified the bill's strong support as stemming from the ways it would especially help rural districts through the establishment of uniformity within school emergency response protocols (House Committee on Education 2008). Furthermore, Senate Bill 08-181 mandated the creation of Colorado School Safety Resource Center (CSSRC) to facilitate training and provide additional preparedness resources to schools. In many ways the CSSRC echoes many of the strategies established by the Department of Education's REMS by calling for the whole community to be involved in preparedness strategies for disasters and emergencies (Colorado Safety Resource Center 2016).

Since the passing of Senate Bill 08-181 and the its implementation in July of 2009, the adoption of interoperability to enhance communication between relevant stakeholders has

become the most recent objective for Colorado school safety. In 2011, this was exemplified with the passage of Colorado Senate Bill 11-173, which not only established a policy of partnership between schools and local Homeland Security personnel, but represents "the first bill in the nation to establish that communications interoperability is a necessary part of a school safety, readiness, and incident management plan" (PR News 2011: 2). This extended invitation for collaboration within many levels of governance clears a historical hurdle for partnership, leadership, and direction of shared governance often described in disaster management protocols (May and Williams 1986: 106). In large part, Senate Bill 11-173 works towards sharing responsibility to help ensure Colorado public school districts' emergency management measures will fulfill NIMS' intention to be fully utilized by key leaders and institutions in communities (Department of Homeland Security 2016b).

Figure 1.5 illustrates the diffusion of Federal recommendations to Colorado regulations. The colors and patterns chosen are utilized to help delineate how the Federal government's recommendations (shown in red dots) were implemented using Colorado state level policy (shown in blue diagonal lines) and were accompanied with a state level center modeled after Federal resources (shown in purple diagonal lines) to impact school district safety practices within Colorado (shown in dense blue dots).

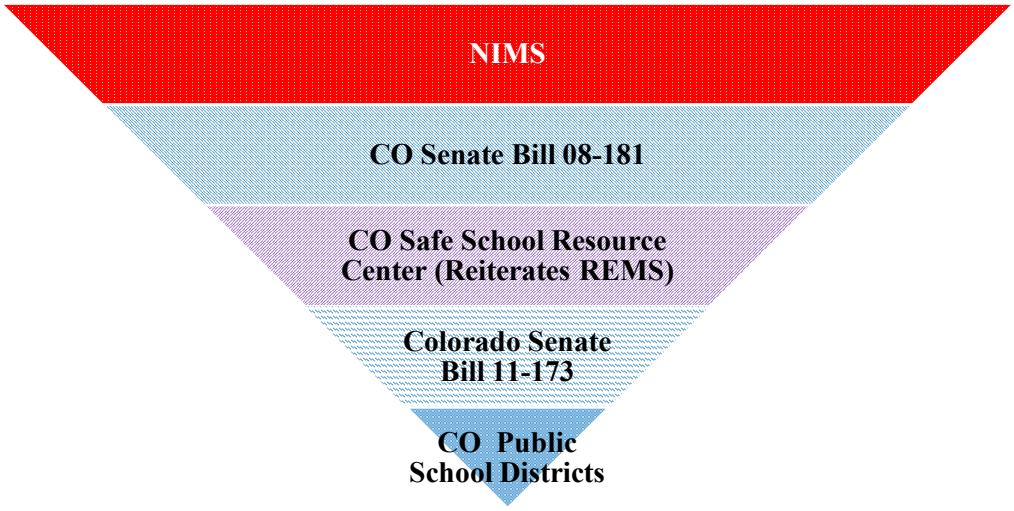


Figure 1.5: Dissemination of school safety policy

The remainder of this thesis is divided into four chapters. Chapter Two describes the methodological approach for this research. Chapter Three summarizes my descriptive analyses of emergency management information on Colorado school districts' websites. Chapter Four offers an analysis of school districts' emergency management documents found on school district websites. Chapter Five, the concluding chapter, describes the empirical and practical contributions of this work and identifies limitations as well as areas for future research.

CHAPTER 2
METHODS

In this thesis, I collected and analyzed secondary data to answer the following research questions:

> How many of Colorado's public school districts include emergency management information as part of their websites?
>
> How does this online emergency management information vary by region, setting, student enrollment, and socio-economic status of the students and school districts?
>
> How many of Colorado's public school districts publish emergency management documents online?
>
> How do these documents vary by region, setting, student enrollment, and socio-economic status of the students and school districts?
>
> How do Colorado public school districts frame emergency management information published online?

This chapter is divided into four subsections. I begin by situating myself as a researcher and discussing my own positionality in relation to this work. Then I describe how I collected and analyzed aggregate school district data. In the subsequent section I detail my qualitative content analysis protocol for evaluating emergency information on school district websites. In the final section, I discuss the protocol I developed to analyze school districts' emergency management documents published digitally for parents, students, and teachers.

Positionality

There have been increasing calls among scholars for researchers to address their positionality within their research projects (see Ravitch and Carl 2016). In doing so in this section, I describe the roles and positions I have held prior to and as a part of this research endeavor. Although my analysis of Colorado public school district websites and online

documents is considered "nonreactive research," it is still important to detail my own positionality and perspectives as they may have affected my approach to this study. For instance, because of my past experience working in schools, as described below, at times I found myself frustrated by inefficient or lackluster layouts of particular districts' websites.

My interest in analyzing school district websites and their emergency management information was driven by my prior work experience in the Poudre School District (PSD) in Fort Collins, Colorado, and given my research experience through the Center for Disaster and Risk Analysis (CDRA) at Colorado State University (CSU).

I was the Energy Intern at PSD from January 2014 to January 2016. During my time there, I was in charge of Energy Star building certifications as well as creating and maintaining data spreadsheets detailing the districts' energy usage and greenhouse gas emissions. These spreadsheets were published on PSD's website to help facilitate community engagement and PSD's ongoing commitment to sustainability. It was this transparency that showed me how powerful a school districts' websites could be in conveying information to the wider community.

As a graduate research assistant at CDRA, I have worked on various projects, although the one most relevant to this research is a Federal Emergency Management Agency (FEMA)-funded project to develop the school safety guidebook *Stronger, Safer, Smarter: A Guide to Improving School Natural Hazard Safety*. As part of that project I helped compile a comprehensive literature review and participated in the design and implementation of a series of focus groups with school leaders and emergency managers. These particular experiences within this project exposed me to the complexities of school safety and helped ignite my interest into understanding online communication of public school district safety information. Indeed, this

work ultimately led me to pursue this particular topic for my thesis research, as my work in Colorado spurred me to decide to focus on the local context where I live and have worked.

It is clear that my work at PSD and CDRA – as well as my training as a sociologist – drove my interest in completing this thesis and also undoubtedly shaped what I did (and did not) see as I analyzed the websites. I think, in the end, that my prior experiences ultimately improved my ability to identify idiosyncrasies of school district websites and important manifest and latent trends within information that was shared on school districts' websites.

Aggregate School District Data

To begin this research, I began by identifying different state resources that list aggregate school district information. This led me to the Colorado Department of Education's *School View Data Center* (https://www.cde.state.co.us/schoolview), because it displays each of Colorado's 179 public school districts' active websites and enrollment sizes for the 2014-15 school year (the most recently available). The reason I decided to proceed with school districts as my unit of analysis was due to districts acting as overarching bodies of governance for individual schools. Furthermore, a school by school search, through the 1,852 public school websites (Colorado Department of Education 2015.A), would have proved unwieldy due to the sheer number of schools as well high level of redundancies in emergency management information from schools that belonged to the same district.

Because I was interested in analyzing the school district websites geographically as well, I manually reorganized the student enrollment data and active website links for each school and district within multiple Excel spreadsheets to match the eight educational regional districts as defined by Colorado's Department of Education. As stated in Chapter 1, these educational

regional areas include the Metro Area, North Central, Northeast, Northwest, Pikes Peak, Southeast, Southwest, and West Central Regions.

In addition to the *School View Data Center*, I also used the *District Dashboard* (http://www.schoolview.org/dish/dashboard.asp). This online database is also maintained by the Colorado Department of Education, but includes more detailed information on school districts throughout the state. Moreover, all of the data from the *District Dashboard* database contained information from the 2014-15 school year, which allowed me to develop a more holistic perspective of each school district. In particular, the metrics that I used to complete this project included: per pupil spending, racial and ethnic demographic information, percentage of students receiving free or reduced lunches, and locational setting for each school district.

In total there are five distinct settings officially classified by the state of Colorado including Denver Metro, Urban-Suburban, Outlying City, Outlying Town, and Rural. A school district's setting as defined by the Colorado Department of Education is different than a school district's educational regional affiliation. This is due to settings being classified based on economic activity and population density. Table 2.1 displays each of the setting classifications in order of decreasing population density.

Table 2.1: Setting classifications as defined by Colorado Department of Education

Setting Classification	Definition
Denver Metro	Districts located within the Denver-Boulder standard metropolitan statistical area which compete economically for the same staff pool and reflect the regional economy of the area.
Urban-Suburban	Districts which comprise the state's major population centers outside of the Denver metropolitan area and their immediate surrounding suburbs.
Outlying City	Districts in which most pupils live in population centers of 7,000 persons but less than 30,000 persons.
Outlying Town	Districts in which most pupils live in population centers in excess of 1,000 persons but less than 7,000 persons.
Rural	Districts with no population centers in excess of one thousand persons and characterized by sparse widespread populations.

My initial searches of the *School View Data Center* and *District Dashboard* sites allowed me to compile financial, enrollment, and website addresses for school districts, as shown in Table 2.2. By not relying solely on search engines to discover relevant websites I was able to avoid sampling biases within my research (Bryman 2008: 629).

Table 2.2: Initial aggregate data collected for school districts

2014-15 Aggregate Public School District Information Collected via School View Data Center & District Dashboard Databases	
Settings	Denver Metro, Urban-Suburban, Outlying City, Outlying Town, Rural
Student Enrollment Sizes	
Total Per Pupil Spending	
Demographic Information	% White, Black, Hispanic, American Indian/Alaskan Native, Asian, Hawaiian/Pacific Islander
Rates of Free or Reduced Lunch	
District Website URLs	

With this information I was able to complete relevant calculations, including racial/ethnic background for the 866,686 enrolled students Colorado public school districts in the 2014-15 school year. This average racial/ethnic demographic information for school districts is displayed within Figure 2.1.

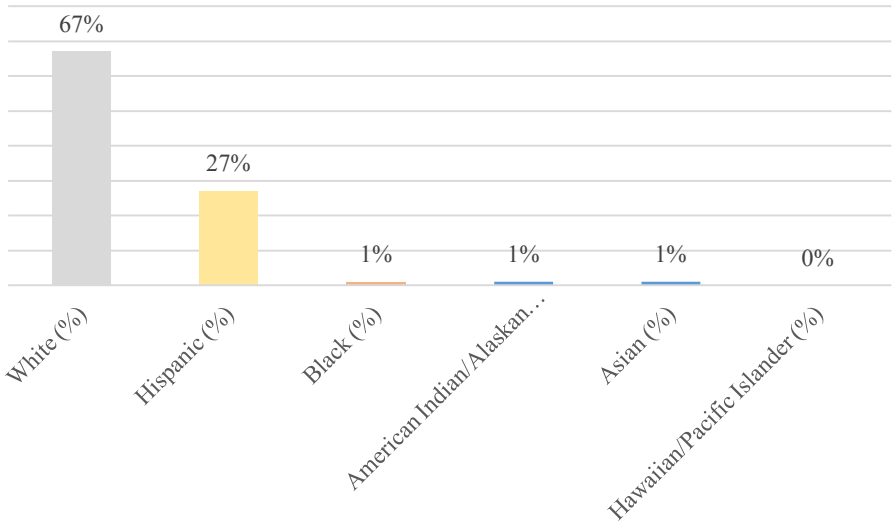


Figure 2.1: Colorado school districts by race and ethnicity

As a next step in my research process, I checked each school district's website to make sure it was functioning. Of the 179 school districts that were listed, four did not have active web addresses. To make sure that these school district websites were not just listed incorrectly on the *School View Data Center*, I entered each into the search engine *Google* to determine if an active website existed. Based on my searches, none of the four school districts that had invalid websites listed on the *School View Data Center* had an active website. These school districts included the Gilpin School District (429 enrolled students), Weld County Re 5J (no listed number of enrolled students), Florence Re-2 School District (no listed number of enrolled students), and Colorado School for the Deaf and Blind (214 enrolled students). These four school districts were thus excluded from this study because they lacked active websites. Thus, in the end, I analyzed a total of 175 public school district websites.

Website Analysis

After this initial compilation of websites was completed, I chose to employ a qualitative content analysis of the available 175 individual school district websites because it would allow for a meaningful and robust investigation of my research questions using both latent and manifest coding (Neuman 2011: 364-365). Qualitative content analysis is not just based around counting and coding different facets of information, but it also offers flexibility and a dedication to understanding the meanings of documents in order to associate these documents with conceptual and theoretical understandings (Bryman 2008: 288-289; Altheide and Shneider 2013: 70).

In my quest to answer my research questions, I created six categories or fields of interest for my content analysis (see Table 2.3).

Table 2.3: Early draft of qualitative website protocol

Rough Protocol Analysis Categories
Do websites have emergency management tabs?
Do websites include a statement about the school emergency plan?
Do websites include contact information?
Do websites list emergency manager contact person?
Twitter Presence?
Facebook Presence?

Once these six categories were formulated, I transferred them into the headers of eight different spreadsheet tabs that represented the eight educational regions throughout Colorado. This would ultimately allow me to analyze all 175 school district websites in a consistent manner.

I then began by reviewing a pilot sample of 16 school district websites (two randomly selected per region). I decided to begin with this pilot review so I could refine the categories in the spreadsheet, before moving onto reviewing all 175 sites.

During this initial review, I recorded information from each webpage that corresponded with each of the six initial categories. It quickly became apparent there was much emergency management information that my six categories were not fully capturing. To address this, I added additional relevant review categories that dealt with areas that were included on many of the websites. One category I added, for instance, was "outside resources" for emergency management. These resources sometimes included programs from the Colorado Department of Education (Safe 2 Tell), non-profits (I Love U Guys Foundation), and Federal programs (REMS). I continued to refine and update the qualitative content analysis protocol as I conducted the initial review of the 16 websites. This reflexive process within qualitative research has been used throughout the past century and is adept in orienting research towards "portion[s] or segment[s] of relevant documents [that] will actually be investigated" (Neuman 2011: 361; Altheide and Schneider 2013: 39).

By utilizing this iterative pilot review process, I developed a protocol that allowed me to capture and organize a larger breadth of information. In the end I used seven major thematic fields, with 25 subcategories under those fields, for my analysis. Table 2.4 list the fields and subfields of the qualitative media analysis protocol used for this investigation. Some of the subfields lent themselves to simple counting (quantification) of emergency management information included online, while other subfields were dedicated to capturing more qualitative, contextual information.

Table 2.4: Fields and subfields within website content analysis

Protocol Fields
1. General a. Does website have emergency management information? (Yes or No) b. How is this information referenced?
2. Hazards Addressed on Website a. Natural hazards (Yes / No) (If so what type?) b. Technological hazards (Yes/ No) (If so what type?) c. Man made/intentional active shooter (Yes/No) (If so what type?) d. All hazards e. Not specific
3. Website's Intended Audience a. Parents (Yes/No) b. Students (Yes/No) c. Teachers/staff (Yes/No)
4. School District Safety Information a. How many links does it take get to emergency management information? b. Specific link/tab pathway from website homepage? c. Brief mission statement regarding emergency management? (Yes/No) d. Parent safety brochure? (Page Length Included) i. Reunification procedures listed? (Yes/No) e. Comprehensive list of district policies and procedures (10 or more pages)?
5. Additional Resources a. Do websites list outside district resources? (Yes/No) b. I Love U Guys Foundation (Yes/No) c. Are there additional resources Federal, State resources, or both? i. Number of state resources • State resources listed ii. Number of federal resources • Federal resources listed
6. District Specialist Information a. Does website list emergency manager (safety specialist of any kind)? (Position title) b. Does website provide specific contact info regarding emergency/safety/security manager? (Yes/No) i. Email information for safety specialist? (Yes/No) ii. Phone number/contact information? (Yes/No)

7. **Social Media**
    a. Does district a have Twitter presence? (Yes/No)
        i. Does district have specific emergency alert profile? (Yes/No)
        ii. Number of Tweets
        iii. Date of creation?
        iv. Number of followers
        v. Linked from website? (Yes/No)
    b. Does district have a Facebook presence? (Yes/No)
        i. Does district have specific emergency alert profile? (Yes/No)
        ii. Message response time
        iii. Date of creation?
        iv. Number of followers
        v. Linked from website? (Yes/No)

Protocol Fields Rationale

Before moving on, here I offer a brief rationale for the fields and subfields included in the finalized protocol. To begin, field one, titled "General", was included to identify if any emergency management information within a school district's website was even listed. Furthermore, section B of field one was utilized to identify school districts' official title of the department or section header where emergency management information was found. This field was necessary to identify how districts label and identify their emergency and safety procedures for the public.

Field two, "Hazards Addressed on Website," identifies which, if any, specific hazards types were referenced on the website, ranging from natural, technological, and/or intentional/active shooter emergencies. In instances where districts would have one or two of these categories, I would mark "yes" under the corresponding subsection within the spreadsheet. If a district's website was not specific to a particular hazard, I used the "non specific" category. Moreover, many times I would also see an "all hazards" approach that was flexible against any emergency situation. For these situations I recorded these districts as employing an all hazards approach within the entire "Hazards Addressed on Website" field.

Field three, titled "Audience," identified the website's intended audience. This included students, parents, and staff members. To classify a website's audience, I analyzed the entirety of the content found on school websites. For instance, resources for students, like the availability of online teaching software including *Blackboard*, led me to designate that website as having an audience for "students." Resources for parents were often similar to those provided for students, often including online gradebooks and sometimes even resources for parents of bullied children. Websites that were distinguished as being for teachers/staff most often provided some form of link to gradebooks and or staff email.

Qualifying the specific emergency management webpage's audience did not occur because of a general lack of identified audience within this information. This coding category was designed to identify who was apparently being targeted for website use and by default the included emergency management information. Identifying key potential users of a website allowed me to record which individuals were likely to access emergency management information through periodic interaction with a school districts website.

Field four, "School Safety Information", provided a more detailed analysis of the initial information captured by field one. Specifically, field four categories focused on analyzing emergency management information in more depth. Subcategories focused on potential markers of user friendliness, depth of information, and whether or not school districts incorporated important aspects of emergency safety in digital and downloadable format. Some of these included district emergency policy and parent brochures.

Field five analyzed "Additional Resources" that were included or linked to on the site. I included individual tabs for state and Federal resources, along with the I Love U Guys Foundation, because all three were found to be the origin of the vast majority of outside

resources found on district websites. Field six was also geared toward identifying if there was any further contact information for receiving more school safety information through either specialist or staff member associated with emergency management.

The last field focuses on social media presence and utilization: specifically through Twitter and Facebook. In many cases, school districts had embedded links on their homepage to social media sites they have accounts on. However, if there were no links on a district's website, I used a *Google* search including the full name of a district, "Colorado," and either "Facebook" or "Twitter" to try to identify social media presence that may not have been linked on the website. The analysis of the data from the websites is elaborated on in Chapter 3.

Although there was obviously additional information on the websites than what I analyzed, I focused on the content that was most relevant to my research questions. Furthermore, to ensure consistency in my review, I conducted the review in a seven-day period. I began by assessing each school district's website by educational region, moving alphabetically starting with the Metro Area and ending with the West Central Region. I also re-reviewed the 16 websites I had previously utilized for the construction of my analysis protocol to ensure all districts with an active website were reviewed with the final protocol.

Document Analysis

While conducting the review of the websites, I quickly discovered that several contained lengthier emergency management protocols as well as documents that were geared specifically toward parents. As I came across these documents available for download, I saved them so I could conduct a more in-depth analysis. One of the reasons I deemed it important to conduct this more targeted review of the documents was to maximize two important aspects of a robust qualitative content analysis. This included attention to how the documents are defined and how

the documents contextualize the meaning making process for intended audience members (Altheide and Schneider 2013: 17; Ravitch and Carl 2016: 171). Moreover, providing an additional a document analysis increases the opportunity of uncovering specific descriptive features in a documents' content that may otherwise go unnoticed (Neuman 2011: 49; Shreier 2012: 43).

I began the document review process by saving each document on a local hard drive. Most documents were in PDF and Microsoft Word format, although about 10% were copied and pasted from webpages. Some districts with both detailed webpages and downloadable items also presented a challenge in the beginning of my analysis. However, in virtually all of these cases, the content found on the webpage mirrored that of the downloadable document. In these cases, only the downloadable document was reviewed to reduce analyzing repetitive information from the same school district. When one or more document was included on a webpage, I downloaded each one.

Once these documents had been downloaded and saved, I formulated a second qualitative media analysis protocol within an Excel spreadsheet. Similar to the process described above, I began with four broad thematic fields: "General Info," "Document Details," "Hazards Addressed," and "More Info?". To test each of these fields' utility, I selected 10 emergency management documents at random from 10 different school districts for an initial pilot analysis. Through a reflexive process of reading, re-categorizing, and refining gathered information in my spreadsheet, I was able to identify a series of categories for analysis that pertained to my research questions. From the four original fields, I generated two more fields including "Resources" and "Notes" to provide a space for describing both outside resources utilized and emergent themes within each document. Table 2.5 details the seven final fields and 23 subfields employed within

my qualitative media analysis protocol for specific emergency management documents found on school districts' websites.

Table 2.5: Fields and subfields within document content analysis

Protocol Fields
1. General A. Title of document B. Author C. PDF, Word doc, or copy-pasted from webpage D. Page length E. Type of document (e.g., letter, parent brochure) F. Year of publication
2. Document details A. Audience (parents, students, staff) B. Statements on what parents should do in event of an emergency involving the district. C. Major section headers or topics discussed? D. Reunification details? E. Pictures on the document? (If so, of what?) F. Active hyper links? (If so, to what?)
3. Hazards addressed A. Natural hazards (Yes / No) (If so what type?) B. Technological hazards (Yes / No) (If so what type?) C. Man made /active Shooter (Yes/No) (If so what type?) D. All hazards
4. Resources A. Outside resources listed? (Yes or No) B. Names of resource(s)
5. More info? A. Emergency specialist listed? (Yes / No) B. Emergency specialist contact info listed? (Yes / No) C. Any contact information listed? (Yes / No) (If yes, what type?) D. Any social media Presence Mentioned? (Yes/ No) E. Cable Channel Listed? (Yes / No) (District Owned or Local Media?) F. Radio Station Listed? (Yes/ No)
6. Notes A. Anything not represented within the other categories that is noteworthy? What was the overall presence of the document? How would parents view this information? Was it an easily "accessible" document?

Each of the fields listed in Table 2.5 were created to serve a function similar to the fields found in the protocol I used to review the websites. For instance, the "General Field" aimed at recording rudimentary information. "Document Details" was oriented towards identifying intended audience and general themes in each document. "Hazards Addressed" focuses on the content of the hazards and disaster protocol procedures discussed within each document. The "Resources" field centered on specific out of district organizations, while "More Info" was

dedicated to identifying internal sources of information that could be utilized by parents and caregivers in the case of an emergency. Lastly, "Notes" allowed for a more adaptable and reflective process of recording emergent themes, and latent coding of nuances found within a document. All of these fields allowed for a more informed analysis of emergency management information documents that have been published online by Colorado public school districts.

Much of the direction I present above emerged while reading, writing, and note taking during the initial evaluation of the first 10 documents. A good example of this iterative process of reviewing documents and then consequently reviewing and modifying my analysis template can be found within the field six, which allowed for me a space for a memo like reflection of each document to capture and record its nuances. By allowing for this dialogue between researcher and data, I was able to identify many more complex facets communicated by online school districts' emergency preparedness documents.

Once my qualitative media analysis protocol was developed, I printed all of the collected documents. In total, 48 documents were reviewed, both digitally and in printed copy. I decided to read and evaluate the documents digitally and in print to ensure I could have a sense of how a reader would view the document in question, as well as be able to record detailed notes on the pages of the document. Furthermore, by cross referencing the print and digital copy, I would ensure I accurately recorded the number of hyperlinks on a document that may otherwise have gone unrecognized. Furthermore, I reviewed all of the documents within a week time window and at the end of each day, I read through my notes on various thematic ideas and topics that were addressed to better facilitate an aggregated understanding of school districts portrayal of emergency management. The results from this document analysis process are presented in Chapter 4.

CHAPTER 3
SCHOOL DISTRICTS' ONLINE EMERGENCY MANGEMENT PRESENCE

This chapter analyzes the emergency management information on the 175 (of 179) Colorado public school districts that have an active website. The first section provides a brief discussion of the importance of online resources in the 21st century. The second section offers analyses of school districts with online emergency management information as well as these districts' social media profiles. The third section reviews districts that do not provide any emergency management information on their websites as well as these districts' social media profiles, as applicable. The last section offers a comparative analysis of school districts that do and do not publish online emergency management information.

The Importance of Online Communication

The Internet plays an integral role in the communication of information. Presently, the ability to access the Internet through "broadband, wireless, and mobile computing—combined with social media such as blogging, microblogging, and social networking—provide[s] a vibrant communication and information infrastructure for today's world" (Haythornthwaite and Kendall 2010: 1). Importantly, the proliferation of Internet accessibility has allowed more individuals to to obtain more types of information (Bekkerman and Gilpin 2013: 10) through more channels than ever before. This astronomical growth in availability has led many community organizations, including school districts, to publish and maintain information online to assimilate outside resources to form better "school-to-home" and "home-to-school" communication networks to cultivate a space for community engagement (Piper 2012: 36-38).

Schools may play a central role in communities and students' lives during times of disaster, "whether [it be] a large-scale crisis occur[ing] during school hours, before or after

school, or off the school campus, the school district plays an important role in the unfolding of events" (Council on School Health 2008: 895). This role of school districts necessitates the maintenance of fluid channels of communication to meet "extraordinary information needs [during crisis] where people use whatever means available to find information under rapidly changing conditions" (Shklovski, Palen, and Sutton 2008: 128).

When school districts are involved in emergency situations, their websites and online presence may become an advanced communicative tool. These websites can thus help to "facilitate communication, the exchange of information and ideas, and the sharing and creation of knowledge" (Taddeo and Barnes 2016: 433). In addition to the capacity of a school's website and other online resources, other more traditional forms of communication (i.e., phone numbers and radio broadcasts) also remain important. Many observers support this idea of "communicative multiplicity," finding "compelling evidence for the importance of using multiple forms and sources of information to communicate with publics during disasters" (Liu, Fraustino, and Jin 2015: 17).

The growth of social media usage presents another suite of tools for schools and school districts communicating information about school preparedness, response, and recovery. Within the United States, there has been a 63% growth in individuals' use of social media sites from 2005 to 2013 (Houston et al. 2014: 1). Furthermore, the usefulness of social media in communicating during emergencies and disasters stems from its inherent structure allowing "individual users to subscribe to flows of information" (Murthy and Longwell 2013: 837). This flexibility of social media to form "communities of practice" across disaster risk reduction, emergency management, and community development, have been noted by many as being an integral tool in the 21st century (Duffy 2012: 42). Despite this capacity for online communication

to mitigate information deficits, all school districts may not possess the resources to provide extensive district information or update online published information (Miller, Adist, and Miller 2005: 39).

Colorado School Districts with Online Emergency Management Information

There are 175 public school districts with active websites in Colorado; these districts represent 98% of all 179 districts in the state. This demonstrates that web use for schools is nearly ubiquitous, even though the content included within websites varies widely. This is especially true when it comes to the inclusion of emergency management information on school district websites.

As of January 2016, 55 of these 175 Colorado school districts had at least some emergency management information published on their district website. Table 3.1 lists the 55 school districts with online emergency management information in Colorado.

Table 3.1: Colorado school districts with online emergency management information

School Districts with Emergency Management Information on Website		
Adams 12 Five Star Schools	Greeley 6	Valley (Sterling) RE-1
Academy 20	Harrison 2	Weldon Valley RE-20(J)
Adams 14/Commerce City	Jefferson County R-1	Widefield 3
Adams-Arapahoe 28J	Julesburg RE-1	Windsor (Weld) RE-4
Alamosa RE-11J	Lewis-Palmer 38	Woodland Park RE-2
Bayfield 10JT-R	Littleton 6	
Boulder Valley RE-2	Meeker RE1	
Brush RE-2(J)	Mesa County Valley 51	
Burlington RE-6J	Moffat County 1	
Calhan RJ-1	Montrose RE-1J	
Canon City RE-1	North Conejos RE-1J	
Center 26 JT	Park County RE-2	
Cherry Creek 5	Park-Estes Park RE-3	
Cheyenne Mountain 12	Poudre R-1	
Colorado Springs 11	Pueblo City 60	
Custer County C-1	Revere School District	
Denver County 1	Roaring Fork RE-1	
Douglas County RE-1	Rocky Ford R-2	

Eagle County RE-50	Salida R-32	
Eaton RE-2	Sargent RE-33J	
Elbert 200	School District 27J	
Elizabeth C-1	Sheridan 2	
Englewood 1	Springfield RE-4	
Falcon 49	St. Vrain RE-1J	
Fort Morgan RE-3	Thompson R-2J	

These districts represent 31% of all public school districts within Colorado and currently encompass 750,863 students, or 87% of Colorado's total public school enrollment. As these numbers suggest, the school districts that publish online emergency management information tend to be located in more populous parts of the state. Indeed, of the 55 school districts that publish online emergency information, 13 are located within the Denver Metro area, 12 within urban-suburban environments, 14 within outlying towns, seven within outlying cities, and nine within rural areas (see Figure 3.1).

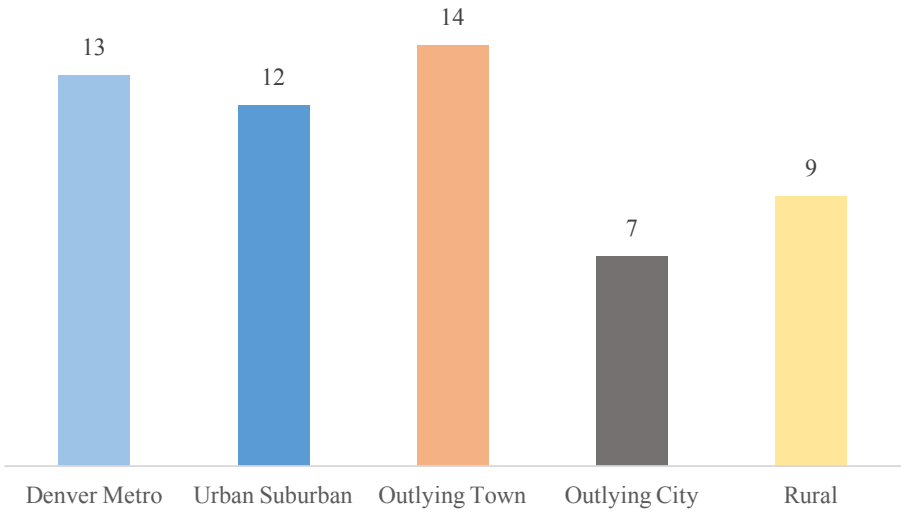


Figure 3.1: Locations of districts with online emergency management information

As described in Chapter Two, the setting/location metric used by Colorado's Department of Education is defined by economic activity and population density. Figure 3.2 shows their actual location in the state, and indicates that of the 55 school districts that have emergency

information on their website: 13 are located within the Metro Region, 10 in the North Central Region, four in the Northeast Region, six in the Northwest Region, 13 in the Pikes Peak Region, two in the Southeast Region, five in the Southwest Region, and two in the West Central Region.

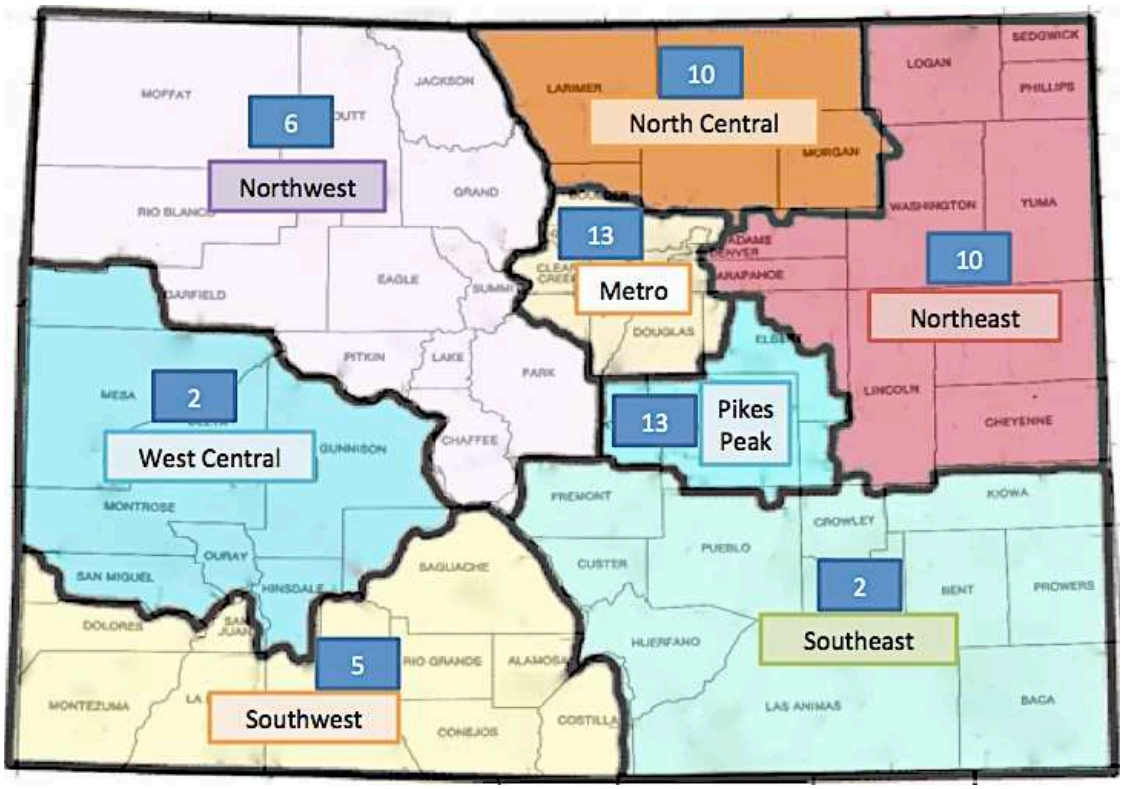


Figure 3.2: Colorado school districts, by region, with emergency information on website

In addition to understanding which school districts have emergency management information websites and where those districts are located, I also analyzed school enrollment data for those districts. This analysis showed that school districts that publish some form of emergency management information on their website have an average enrollment of 13,652 students. The racial demographic of these students is 61% White, 31% Hispanic, 2% Black, 2% Asian, and 1% American Indian/Alaskan Native. Thus, the average enrollment of school districts with some form of emergency management information on their website reflects a more diverse makeup then Colorado's average student enrollment as a state, which is respectively 67% White,

27% Hispanic, 1% Black, 1% Asian, and 1% American Indian/Alaskan Native (see Figure 3.3 for a comparison).

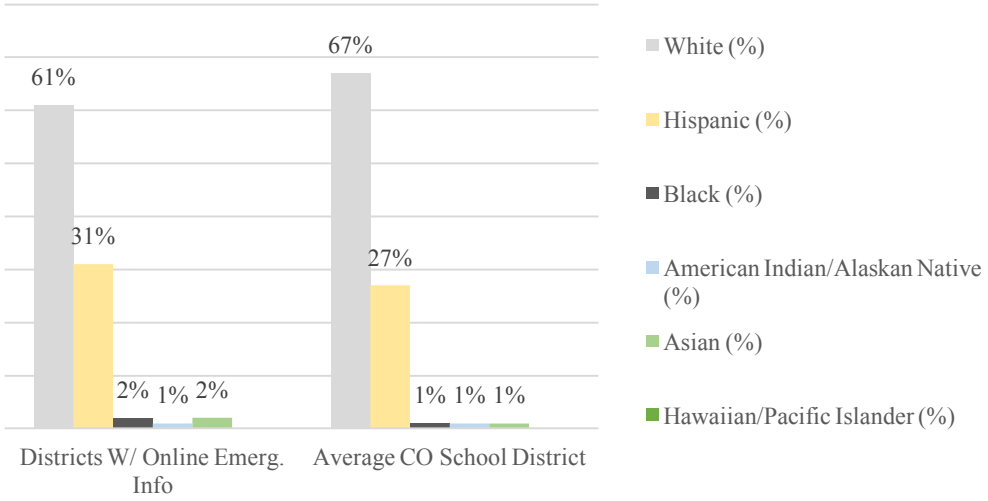


Figure 3.3: School districts with online emergency information compared to all Colorado school districts by race and ethnicity

The fact that schools with emergency management on their websites are slightly more racially and ethnically diverse than the state as a whole is likely attributed to the fact that districts with online emergency management information are more likely to be located in more densely populated and economically active areas of Colorado. Indeed, 32 school districts with online emergency information are classified as being located within Denver Metro, urban suburban, or outlying city settings.

Website Navigability

Website and webpage navigability is important to consider because "When a [web]site is highly navigable, a user can browse or search for information without difficulty; when a site is not very navigable, attempts at finding information may be fruitless or frustrating" (Wojdynski and Kalyanaraman 2016: 455).

To assess navigability for the purposes of this research, I recorded the number of links a website user must interact with to get to emergency management information. In sum, I counted the number of "click through actions" I had to engage in to get to emergency management information. The median number for the 55 active school district websites was two, with one being the least number of links and three being the maximum. In instances where there were one "click through action" necessary, the emergency management information was available through a single link on a school district's website home page. A specific example of this is included in Figure 3.4, which shows a screenshot of Brush School District homepage with the safety link outlined in blue.

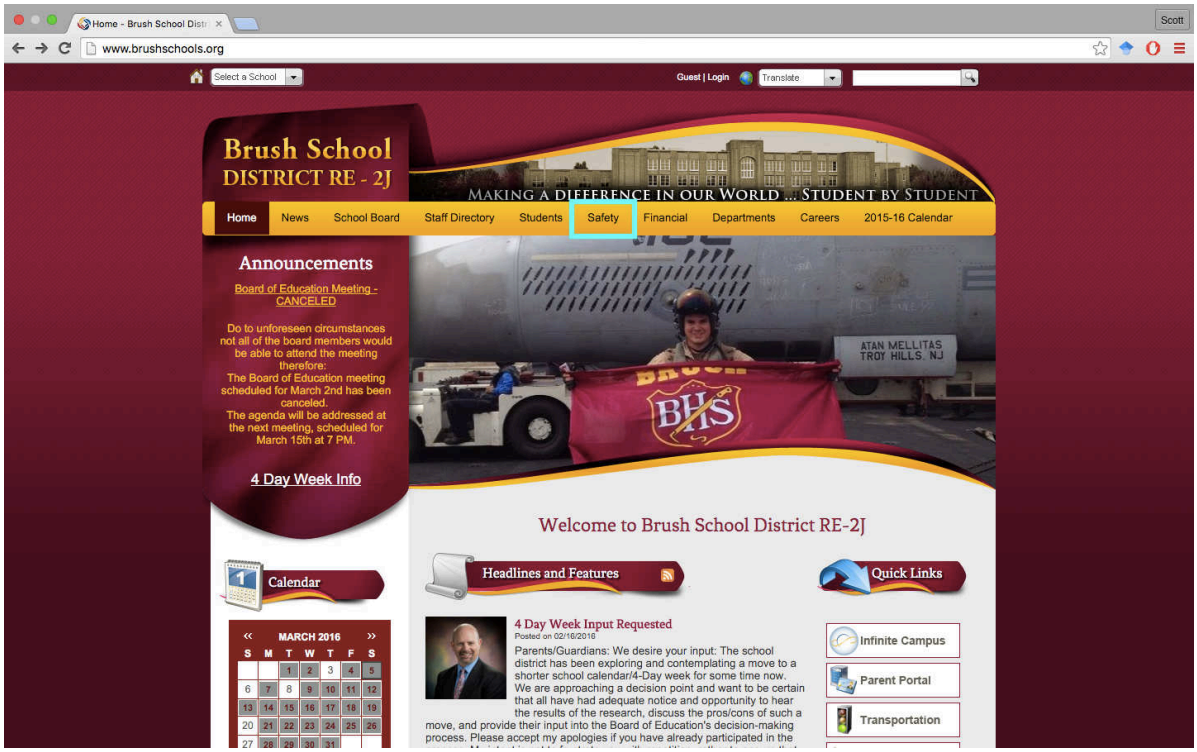


Figure 3.4: Screenshot of home page with one link accessibility to emergency management information

Although most school districts require users to click on very few links to get to the available emergency management information, there was great variability in terms of the

wording used to describe the emergency management information. In fact, the 55 district websites used 26 different titles or headers to reference emergency management information (see Table 3.2).

Table 3.2: All titles of emergency management information on Colorado school district websites

Titles of Emergency Management Information	
Crisis Action Plan	Safe Schools Handbook
Crisis Management Handbook	Safety
Department of Safety	Safety and Emergency Services
District Safety Info	Safety in Schools
District Safety Plan	Safety Info for Parents
District Security	Safety Procedures
Emergency Plan	School Safety
Emergency/Crisis Management	School Safety and Security
Health and Safety Resources	School Safety Plan
In Case of Emergency	Security
Internet Safety	Security and Safety
Safe and Healthy Schools	Standard Response Protocol
Safety and Security	Student Safety

Although the districts used a variety of descriptors for the online emergency management and safety information, about half of the 55 websites used four repeating idioms. These included "Safety and Security," "Safety," "School Safety," and "Student Safety." Table 3.3 lists the top 10 titles for the emergency management information found on Colorado public school districts' websites.

Table 3.3: Top 10 titles for emergency management information on district websites

Title of Emergency Management Information	Number of Districts Employing Phrase
Safety and Security	12
Safety	7
School Safety	4
Student Safety	4
Standard Response Protocol	3
Safe Schools Handbook	3
Security and Safety	2
School Safety and Security	2
Security	2
Department of Safety	1

Audience

Parents, students, and teachers were the primary audiences that the websites addressed. All 55 websites included information that was specifically geared toward parents; 54 of the websites had information for teachers/staff; and 51 of the websites had information that was student-centered.

I assessed the intended audience through sub-tabs, hyperlinks and resources offered on a district's website. Although there are many more audiences than just parents, students, and teachers/staff who may access school district websites (including master's students at Colorado State University!), these were the most prevalent audiences targeted by the districts. Moreover, these broader categories still allowed for me to record and express whether a district website's focus was on more internal district personnel as well as to members of the community.

Hazards Addressed

My analysis revealed that 37 of the 55 websites (67%) included an all-hazards approach to emergency management on their website. The all-hazards approach is the most comprehensive form of emergency management, and is defined by the Department of Homeland Security *Incident Management Handbook* as encompassing "Any incident or event, natural or human

caused, that requires an organized response by a public, private, and/or governmental entity in order to protect life, public health and safety, values to be protected, and to minimize any disruption of governmental, social, and economic services" (United States Coast Guard 2006: 25-1).

Seven of the 55 websites (13%) were classified as "nonspecific emergency management approaches" in terms of hazards addressed. In these cases, the only information regarding emergency management included reference to "safe learning environments" as a district priority.

Four of the 55 websites (7%) only included information revolving around active shooter situations. These cases included information pertaining to students and staff being told to immediately report unidentified persons and any unusual activities, how teachers lock non-essential doors to minimize threats from intruders, and of the increases in local law enforcement and security presence within a district. Another four websites (7%) exclusively dealt with technological or accidental disasters ranging from in-depth discussions pertaining to automobile traffic safety, to how to safely decorate for the holiday season. Another three districts (6%) were coded as "unavailable" because the emergency management portion of their website was password protected. See Figure 3.5 for a summary of online information by hazard type.

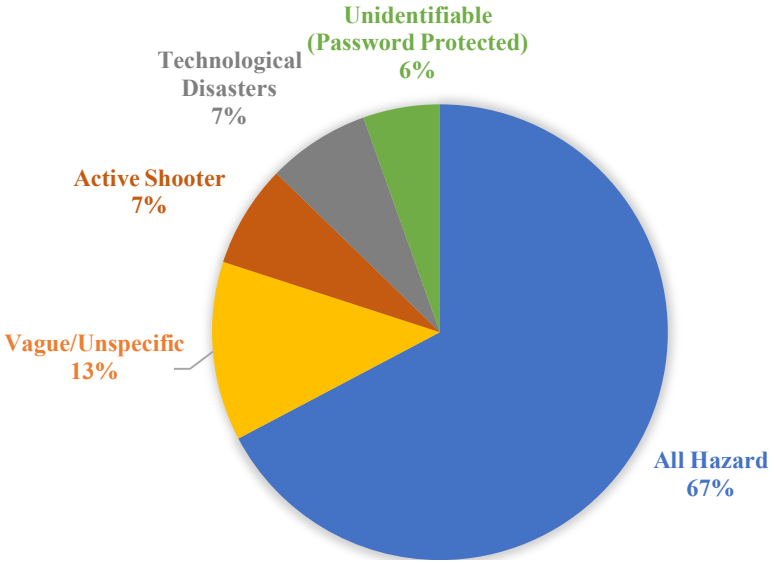


Figure 3.5: School districts' online published hazards approach

Emergency Management and School Safety Contacts

Only 23 of the 55 school districts (42%) with emergency information on their website listed some form of emergency manager specialists as leading up safety efforts. Of those, 22 websites provided some form of contact information (i.e., email address and/or phone and fax numbers) for these individuals or their offices.

Of the 23 districts which listed emergency management or school safety professionals online, nine are located in the Metro Region, three in the North Central Region, one in the Northwest Region, nine in the Pikes Peak Region, one in the Southwest Region, and one in the West Central Region (see Figure 3.6).

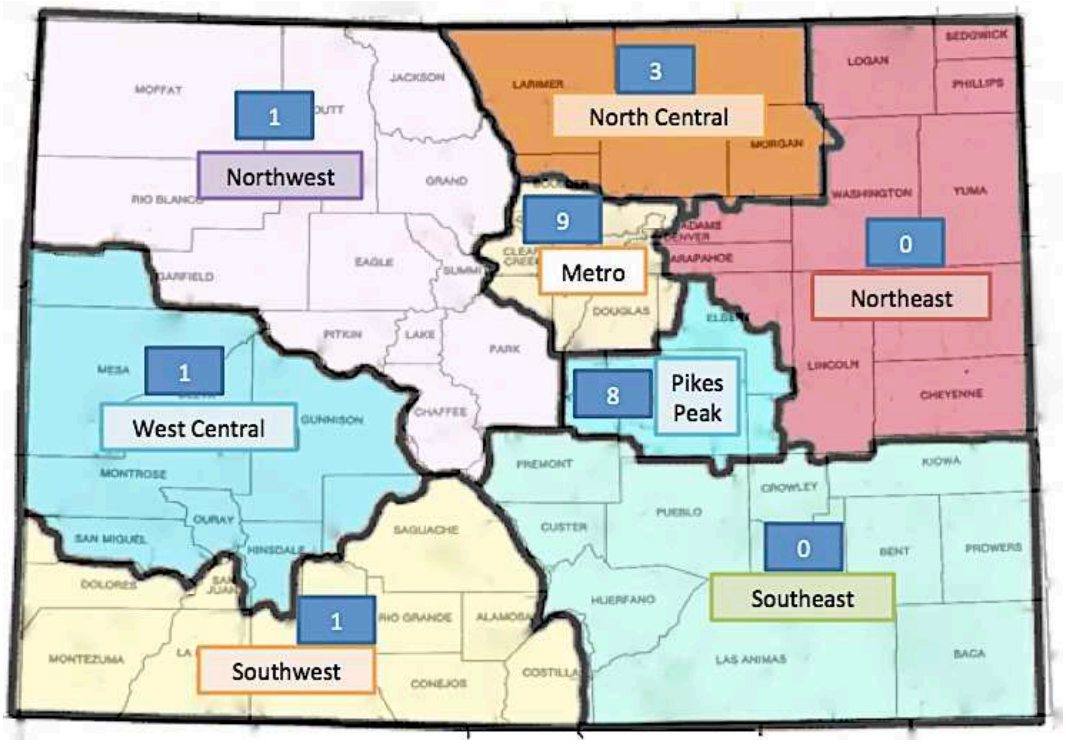


Figure 3.6: Distribution of emergency specialists listed on districts' websites

Figure 3.6 illustrates that most districts that list emergency specialists online are located in the most populous areas of Colorado. Indeed, only 13% of the listed emergency specialists found on school district websites are located in more rural eastern, southern, and western portions of Colorado. Furthermore, schools without emergency specialists listed on their website have an average enrollment size of 4,601 students, ranging from 106 students to 41,706 students. In comparison, school districts that list some form of emergency management specialist on their website have an average enrollment size of 26,244, with the smallest enrollment size being 1,127 students and the most populous being 88,839 students.

Outside Resources

Of the 55 districts, 40 (72%) list at least one outside resource – either in the form of a website link or a document available for download, for instance – geared toward parents or students. The most often listed resource for school districts was the Safe 2 Tell Program (29

cases). This program emerged as a public-private partnership in 2004. It provides a free hotline that guarantees anonymity in reporting any threats to school safety and "provides a lifeline for the youngest among us, thereby creating stronger, safer communities" (McCrimmon 2009: 7).

Another often included outside resource was the I Love U Guys Foundation's Standard Response Protocol (20 cases). The I Love U Guys Foundation is a nonprofit that was founded in 2009 after the death of Emily Keyes at Platte Valley High School. One of the Foundations' core goals is to provide "a classroom response to any critical incident" (The I Love U Guys Foundation 2015: 1).

Social Media

Of the 55 school districts that publish emergency management information on their website, 43 (78%) utilize popular social media sites such as Twitter or Facebook. Of these 43 social media users, 28 have adopted both Twitter and Facebook as an additional means of communication. Of the remaining 15 school districts that have emergency management information on their website and utilize social media, 11 school districts use only Facebook and four use only Twitter.

I visited the social media accounts for all 43 districts to verify that they were active and to assess user rates. My analysis found that together, these districts with social media presence have 145,684 persons, in total, who have "liked" the various Facebook pages, and 65,906 persons who have followed via Twitter. Further analysis of who the followers are in terms of socio-demographic information was impossible to ascertain, although as discussed in the conclusion, this is a fruitful area for future research.

Per Pupil Spending and Rate of Free/Reduced Lunch

In my analysis, I also wanted to understand how other socio-demographic factors – including per pupil spending and rates of free/reduced lunch uptake – might be associated with the publication of online emergency management information. To be clear, per pupil spending is predicated on factors related to a district's student enrollment. Within Colorado, there is a base amount of funding per student ($6,292.39), that is then adjusted varying on cost of living, personnel cost, and size of a district all (Colorado Department Education 2015.B). The average per pupil spending for school districts with emergency information on their websites is $7,632 as compared to the state average of $9,027. The average rate of free or reduced lunch for school districts with emergency information on their website is 46% as compared to the state average of 49%. Figure 3.7 displays these differing rates of per pupil spending, while Figure 3.8 displays the differing rates of free or reduced lunch.

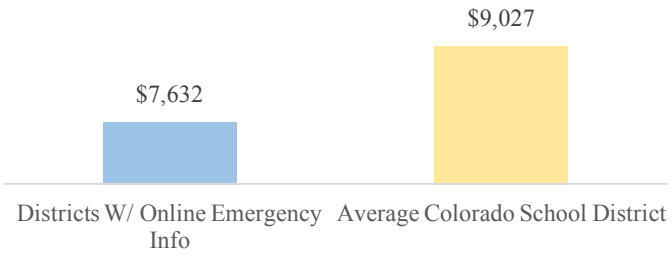


Figure 3.7: Comparison of per pupil spending among school districts with online emergency info and average spending in all Colorado school districts

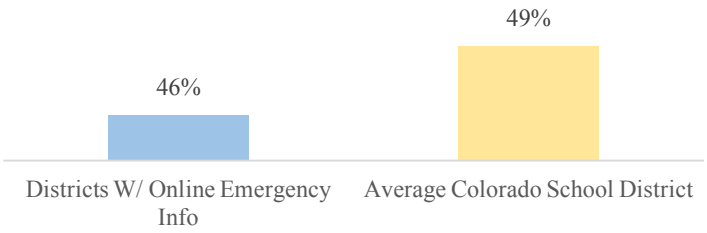


Figure 3.8: Comparison of average rates of free or reduced lunch among school districts with online emergency info, and average Colorado school districts

School Districts Without Online Emergency Management Information

A total of 120 school districts, or approximately 69% of all Colorado public school districts, do not offer any emergency management information on their websites. The school districts with no information are listed alphabetically in Table 3.4.

Table 3.4: Colorado school districts without online emergency management information

Agate 300	Edison 54 JT	Mapleton 1	Telluride R-1
Aguilar Reorganized 6	Ellicott 22	McClave RE2	Trinidad 1
Akron R-1	Fountain 8	Miami-Yoder 60 JT	Vilas RE-5
Archuleta County 50JT	Fowler R-4-J	Moffat 2	Walsh RE-1
Arickaree R-2	Frenchman RE-3	Monte Vista C-8	Weld County RE-1 (Gilcrest)
Arriba/Flagler C-20	Garfield 16	Montezuma RE-1	Weld County RE-8 (Fort Lupton)
Aspen 1	Garfield 2	Mountain Valley RE1	Weld County School District RE-3J
Ault Highland RE-9	Genoa-Hugo C113	North Park R-1	West End RE-2
Bennett 29J	Granada RE-1	Norwood R-2J	West Grand 1-JT
Bethune R-5	Gunnison Watershed RE1J	Otis R-3	Westminster 50
Big Sandy 100J	Hanover 28	Ouray R-1	Wiggins RE-50(J)
Branson Reorganized 82	Haxtun RE-2J	Pawnee RE-12 (Grover)	Wiley RE-13 JT
Briggsdale RE-10	Hayden RE-1	Peyton 23 JT	Woodlin R-104
Buena Vista R-31	Hi-Plains (Vona) R-23	Plainview RE-2	Wray RD-2
Buffalo (Merino) RE-4	Hinsdale RE-1	Plateau (Peetz) RE-5	Yuma 1
Byers 32J	Hoehne Reorganized 3	Plateau Valley 50	
Campo RE-6	Holly RE-3	Platte Canyon	
Centennial R-1	Holyoke RE-1J	Platte Valley RE-7 (Kersey)	
Cheraw 31	Huerfano RE-1	Prairie RE-11	
Cheyenne Co RE-5	Idalia RJ-3	Primero Reorganized 2	
Clear Creek RE-1	Ignacio 11JT	Pritchett RE-3	
Cotopaxi RE-3	Karval RE-23	Pueblo County 70	
Creede Consolidated 1	Kim Reorganized 88	Rangely RE-4	
Cripple Creek-Victor RE-1	Kiowa C-2	Ridgway R-2	
Crowley RE1J	Kit Carson R-1	Sanford 6J	
De Beque 49JT	La Veta RE-2	Sangre De Cristo RE-22J	
Deer Trail 26J	Lake County RE-1	Sierra Grande R-30	
Del Norte C-7	Lamar RE-2	Silverton 1	
Delta County 50(J)	Las Animas RE-1	South Conejos RE-1	
Dolores County RE2	Liberty J-4	South Routt RE-3	
Dolores RE-4A	Limon RE-4J	Steamboat Springs RE-2	
Durango 9-R	Lone Star 101	Strasburg 31J	
Eads RE-1	Mancos RE-6	Stratton R-4	
East Grand 2	Manitou Springs 14	Summit County RE-1	
East Otero (La Junta)R-1	Manzanola 3J	Swink 33	

The average enrollment size of school districts that do not have any emergency information online is 957 students, with all 120 schools constituting 115,823 students or 13% of total enrollment in Colorado. The average rate of free or reduced lunch for these schools is 51% and the average per pupil spending is $9,783; both of which represent higher numbers than state wide averages in Colorado. School districts with no emergency management information are slightly less racially and ethnically diverse than the state as a whole, as shown in Figure 3.9.

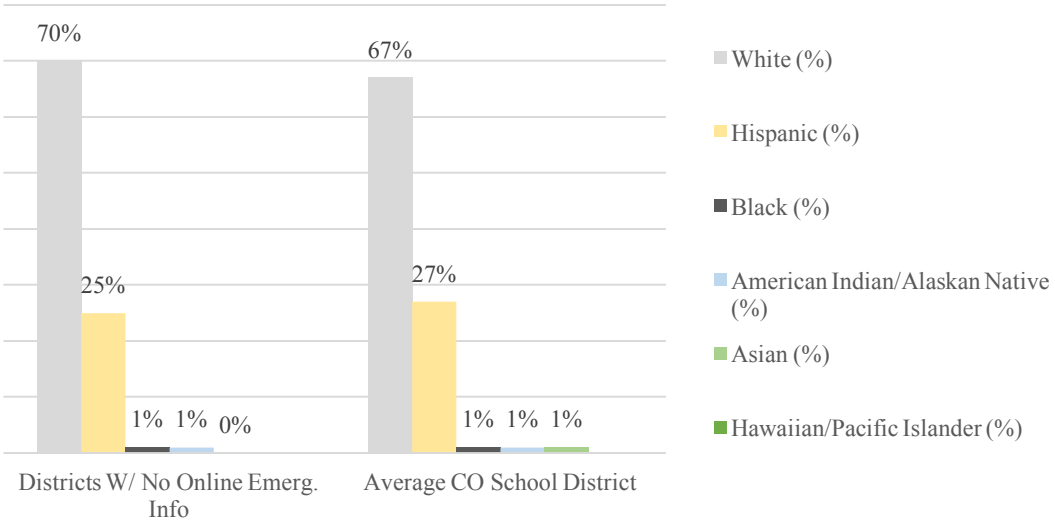


Figure 3.9: School districts without online emergency information compared to all Colorado school districts by race and ethnicity

Of those school districts that do not have any emergency management information online, only 1% are located in the Denver Metro area, 3% in urban-suburban areas, 26% in outlying towns, 6% in outlying cities, and 63% in rural areas (see Figure 3.10).

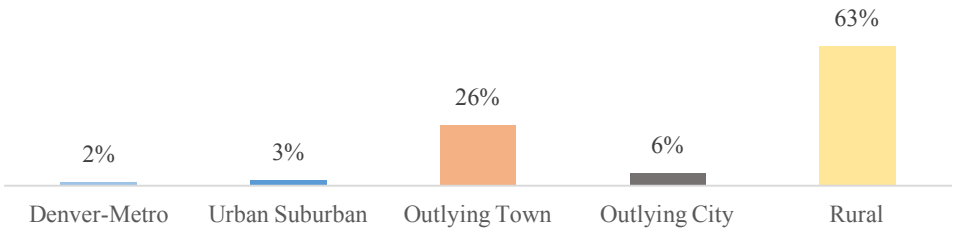


Figure 3.10: Settings of districts with no online emergency management information

Figure 3.11 displays the location of the 120 school districts that do not publish emergency management information online within Colorado's educational regions. School districts located in the eastern and southern part of Colorado are the least likely to have this emergency information on their school district websites.

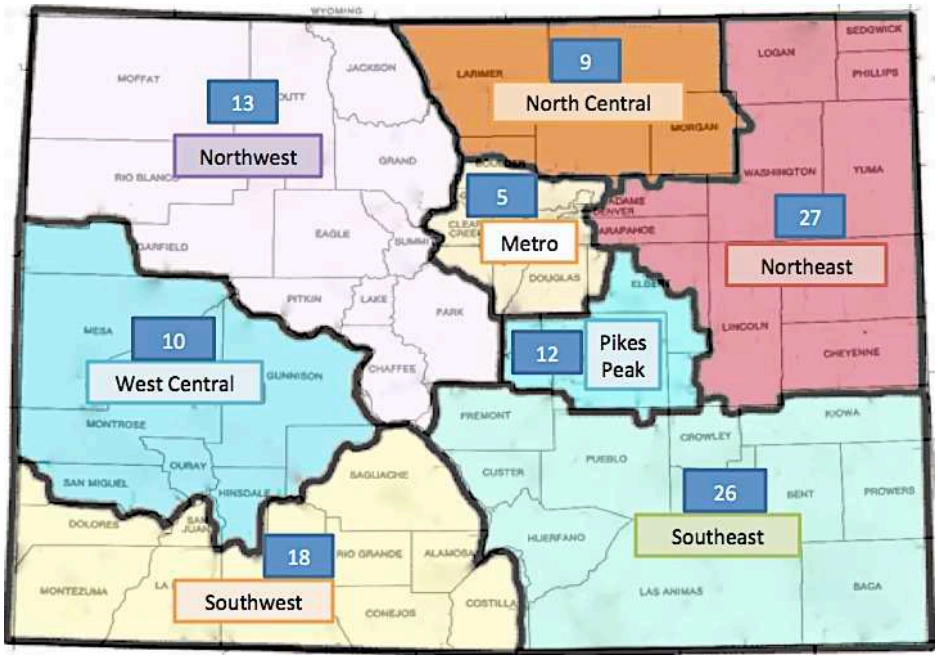


Figure 3.11: Location and number of Colorado school districts with no emergency information online

Social Media

Examining the use of social media sites among school districts without emergency management information on their website is important. Although a district's formal website may not have emergency management information, social media's flexible platform could allow users to rapidly upload and disseminate information as needed. Of the school districts that do not have any emergency information on their website, 36% do offer access to at least one form of popular social media (Facebook or Twitter), while 11% of these school districts have both Facebook and Twitter accounts. In total, Facebook connects approximately 22,105 people with their school

districts that otherwise provide no emergency management information online, while Twitter provides connection to 2,120 individuals.

Contrasting School Districts with and Without Online Emergency Management Information

This section compares the school districts that do and do not publish emergency information on their respective district websites. Figure 3.12 displays the number of school districts that publish emergency management information on their website in relation to how many total school districts contained within each educational region.

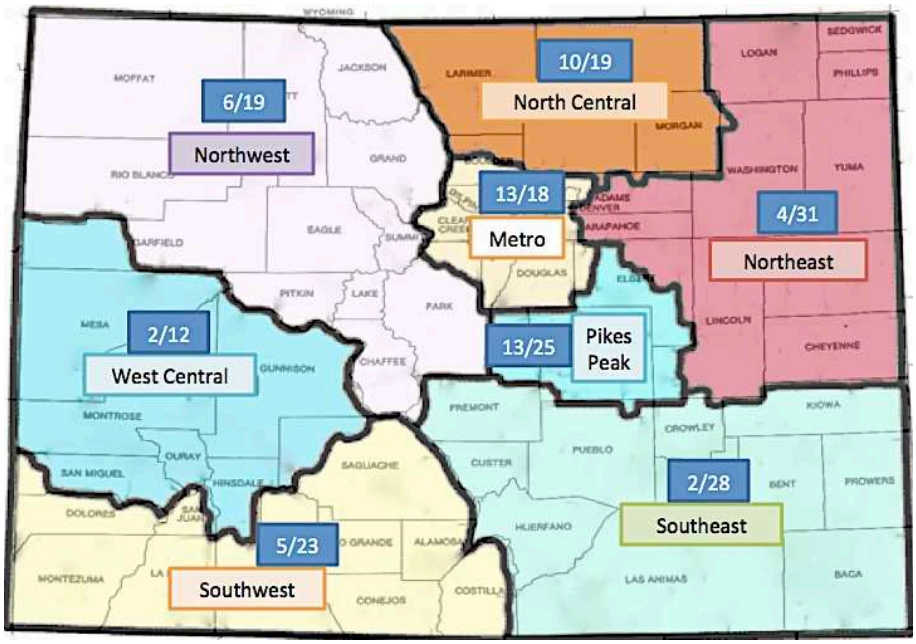


Figure 3.12: Number of districts that publish emergency management info online out of total number of districts in each educational region

The Metro Educational Region, North Central Educational Region, and Pikes Peak Educational Region, which all have student total enrollments of over 100,000, are also the only educational regions where 50% or more of their school districts publish emergency information online. Moreover, the educational regions that have the smallest percentage of districts that publish emergency information online, including the Southwest Educational Region, Northeast

Educational Region, and Southeast Educational Region, all have student enrollments below 20,000 students.

Figure 3.13 compares racial and ethnic composition of all school districts in Colorado to those that do and do not publish information online.

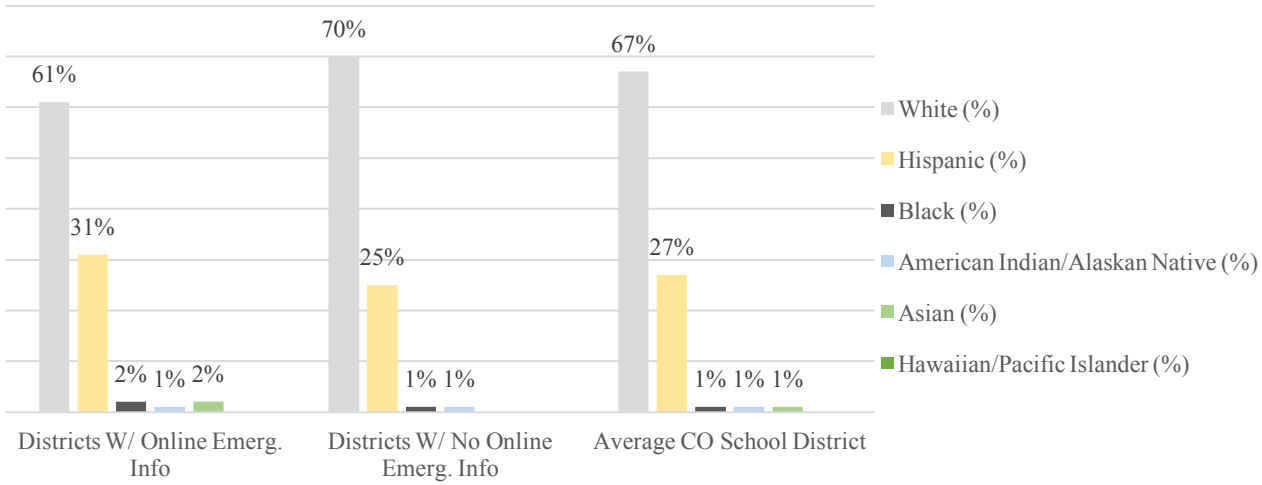


Figure 3.13: School districts with online emergency information compared to school districts without online emergency information and all Colorado school districts by race and ethnicity

Per Pupil Spending and Rate of Free/Reduced Lunch

Another important characteristic to investigate between schools that do and do not publish emergency management information on their website includes per pupil funding as well as free or reduced lunch rates. As Figure 3.14 shows, school districts that publish emergency management information online have slightly lower rates of free or reduced lunch eligibility among students as well as lower per pupil funding, as shown in Figure 3.15.

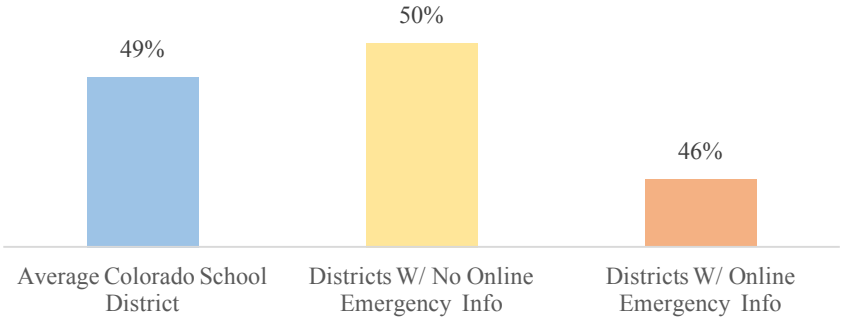


Figure 3.14: Comparison of average rates of free or reduced lunch

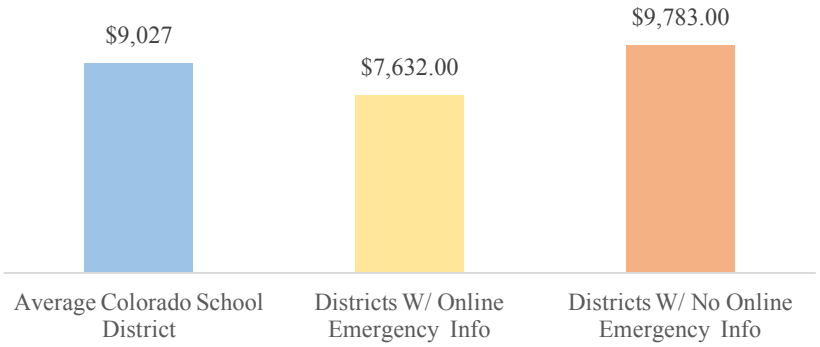


Figure 3.15: Comparison of average per pupil spending

Furthermore, school districts that do not publish online emergency management information not only have higher rates of per pupil spending and free or reduced lunch rates than school districts that do publish information, but are elevated beyond the average rates of school districts within Colorado. This may indicate that school districts that do not publish emergency management information on their websites are within more socio-economically depressed communities and may not have the means to update virtual tools such as a website.

Social Media

Figure 3.16 compares Facebook and Twitter use for all Colorado districts and between those with and without emergency management information online. Perhaps not surprisingly, those districts with no online emergency management information are also less likely to have active social media profiles.

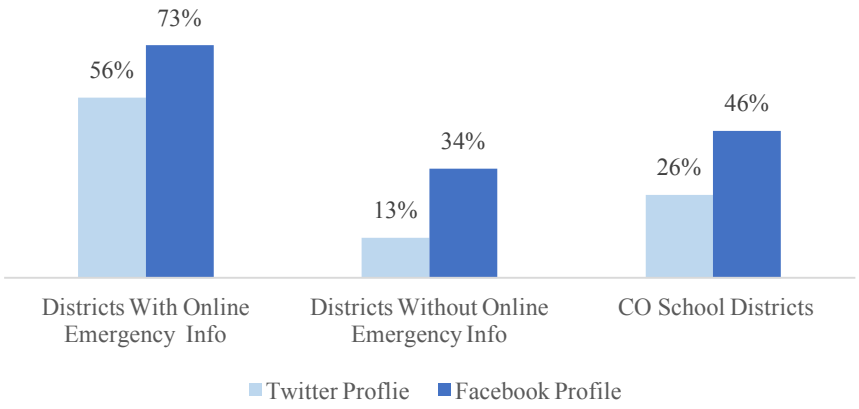


Figure 3.16: Comparison of school district utilization of social media among school districts with online emergency management information, school districts without online emergency info, and average Colorado school districts

In the next chapter, I will provide an analysis on specific documents that were found on the 55 school district websites that provided emergency management information. And in the conclusion chapter, I address the implications of the findings from both empirical chapters.

CHAPTER 4
SCHOOL SAFETY DOCUMENTS

This chapter analyzes the documents found on Colorado public school districts' websites. Documents are important due to their ability to help researchers understand complex social issues (Ravitch and Carl 2016: 171) and their relationship between production, consumption, and content (Prior 2003: 26). Moreover, documents play a paramount role in the communication of "interact in the "human lifeworld" where they can convey vital information because of their ability "to speak for us, on our behalf and in our absence. And in speaking for us, they take on work, they do jobs for us" (Levy 1999: 18-19).

For the purposes of this research documents are conceptualized as including any information containing any emergency management information for the district that was at least one page and/or approximately 500 words. The documents that were analyzed were found under emergency management sections of district websites and were both Microsoft Word Documents and PDFs.

The remainder of this chapter is organized in three main sections. The first examines school districts that publish online documents to illuminate which districts publish this information and how this publication of information is associated with other contextual factors. The second section explores the background of school districts that had no online emergency management documents published online. These first two sections allow me to compare and contrast which districts – by setting and region – do and do not publish documents online. The final section presents distinct-level trends and themes revealed through the content analysis of the collected documents from the online sources. Together, these sections offer a more thorough

understanding of public school districts' "meaning-making process in relation to publicly consumed materials, images, and messages" (Ravitch and Carl 2016: 171).

Background of Districts with Documents

Of the school districts that had some form of emergency management presence on their website (see Chapter 3), 35 out of the 55 (63%) also published an emergency management document. These 35 school districts, published at least one document regarding emergency management and serve over 600,000 students, which constitutes almost 70% of all public student enrollment in Colorado (see Table 4.1). The average enrollment size of these districts is around 17,000, with the smallest district enrollment being 221 students and the largest being over 88,000 students.

Table 4.1: Colorado school districts with online documents and school enrollment

Adams 12 Five Star Schools	38,701	Elbert 200	221
Academy 20	24,578	Fort Morgan RE-3	3,200
Adams-Arapahoe 28J	41,706	Harrison 2	11,441
Alamosa RE-11J	2,136	Jefferson County R-1	86,537
Boulder Valley RE-2	30,908	Lewis-Palmer 38	6,207
Brush RE-2(J)	1,518	Meeker RE1	697
Burlington RE-6J	784	North Conejos RE-1J	964
Calhan RJ-1	463	Park County RE-2	651
Center 26 JT	649	Poudre R-1	29,045
Cherry Creek 5	54,499	Pueblo City 60	17,960
Cheyenne Mountain 12	5,148	Roaring Fork RE-1	5,613
Custer County C-1	397	Rocky Ford R-2	809
Denver County 1	88,839	School District 27J	17,103
Douglas County RE-1	66,702	Springfield RE-4	299
Eagle County RE-50	6,713	St. Vrain RE-1J	31,076
Eaton RE-2	1,904		
Total Districts: 35		**Total Enrollment: 603,361**	

The educational region of the 35 district websites that published emergency management documents was as follows: eight of the 18 districts in the Metro Region, eight of the 19 districts were in the North Central Region, two of the 31 districts were in the North East Region, four of the 19 districts were in the North West Region, eight of the 25 districts were in the Pikes Peak

Region, two of the 28 districts were in the Southeast Region, three of the 23 districts were in the Southwest Region, and none of the 12 districts located in the West Central Region published any emergency management document (see Figure 4.1).

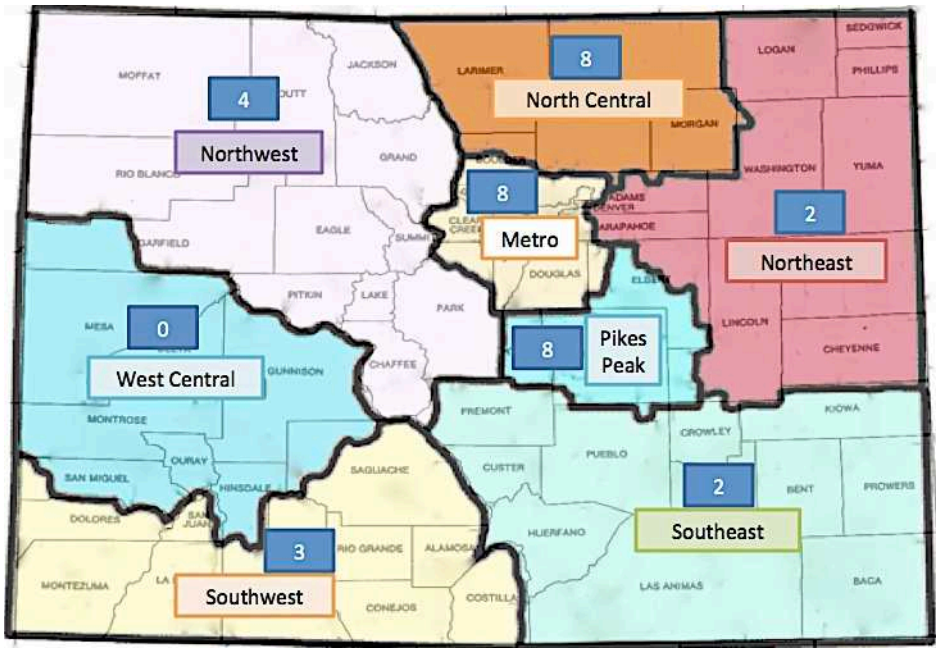


Figure 4.1: Number of districts that publish online emergency management documents by region

In terms of location, nine of the 35 districts with online emergency management documents were located within the Denver Metro setting, seven were in the urban-suburban setting, nine were located in the outlying town setting, four were in the outlying city setting, and six were in the rural setting (see Figure 4.2).

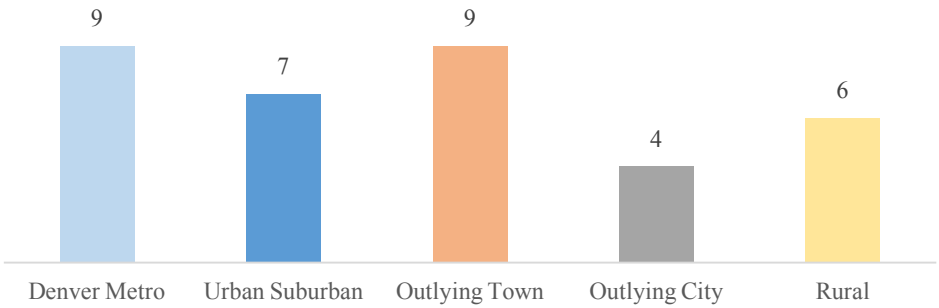


Figure 4.2: Settings of districts that publish emergency information document(s) online

Background of Districts without Online Documents

The analysis showed that 140 (80%) of the 175 school districts with active websites did not publish emergency management documents on their website. These 140 school districts serve over 200,000 students, which constitutes almost a quarter of all public student enrollment in Colorado (see Table 4.2). The average enrollment size of these districts is around 1,871, with the smallest district enrollment being 10 students and the largest enrolling over 28,000 students.

Table 4.2: Colorado school districts and school enrollment without online documents

Agate 300	10	Lamar RE-2	1,606
Aguilar Reorganized 6	130	Las Animas RE-1	501
Akron R-1	357	Liberty J-4	80
Archuleta County 50JT	1,326	Limon RE-4J	476
Arickaree R-2	107	Littleton 6	15,691
Arriba/Flagler C-20	195	Lone Star 101	106
Aspen 1	1,756	Mancos RE-6	455
Ault Highland RE-9	761	Manitou Springs 14	1,158
Bayfield 10JT-R	1,325	Manzanola 3J	147
Bennett 29J	1,079	Mapleton 1	8,646
Bethune R-5	117	McClave RE2	279
Big Sandy 100J	295	Mesa County Valley 51	21,742
Branson Reorganized 82	450	Miami-Yoder 60 JT	278
Briggsdale RE-10	177	Moffat 2	196
Buena Vista R-31	950	Moffat County 1	2,175
Buffalo (Merino) RE-4	315	Monte Vista C-8	1,130
Byers 32J	2,142	Montezuma RE-1	2,787
Campo RE-6	44	Montrose RE-1J	6,087
Canon City RE-1	3,603	Mountain Valley RE1	138
Centennial R-1	221	North Park R-1	190
Cheraw 31	229	Norwood R-2J	287
Cheyenne Co RE-5	182	Otis R-3	226
Clear Creek RE-1	890	Ouray R-1	191
Colorado Springs 11	28,332	Park-Estes Park RE-3	1,127
Cotopaxi RE-3	221	Pawnee RE-12 (Grover)	81
Creede Consolidated 1	77	Peyton 23 JT	622
Cripple Creek-Victor RE-1	384	Plainview RE-2	66
Crowley RE1J	437	Plateau (Peetz) RE-5	177
De Beque 49JT	151	Plateau Valley 50	459
Deer Trail 26J	184	Platte Canyon	1,017
Del Norte C-7	417	Platte Valley RE-7 (Kersey)	1,129
Delta County 50(J)	5,075	Prairie RE-11	190
Dolores County RE2	279	Primero Reorganized 2	197

Dolores RE-4A	796	Pritchett RE-3	37
Durango 9-R	4,564	Pueblo County 70	9,310
Eads RE-1	175	Rangely RE-4	542
East Grand 2	1,299	Revere School District	106
East Otero (La Junta)R-1	1,309	Ridgway R-2	356
Edison 54 JT	217	Salida R-32	1,194
Elizabeth C-1	2,545	Sanford 6J	391
Ellicott 22	1,072	Sangre De Cristo RE-22J	337
Englewood 1	2,866	Sargent RE-33J	424
Falcon 49	19,552	Sheridan 2	1,536
Fountain 8	8,120	Sierra Grande R-30	254
Fowler R-4-J	402	Silverton 1	62
Frenchman RE-3	198	South Conejos RE-1	218
Garfield 16	1,038	South Routt RE-3	391
Garfield 2	4,828	Steamboat Springs RE-2	2,468
Genoa-Hugo C113	171	Strasburg 31J	1,042
Granada RE-1	202	Stratton R-4	212
Greeley 6	21,183	Summit County RE-1	3,343
Gunnison Watershed RE1J	1,929	Swink 33	351
Hanover 28	260	Telluride R-1	898
Haxtun RE-2J	330	Trinidad 1	1,025
Hayden RE-1	414	Vilas RE-5	104
Hi-Plains (Vona) R-23	111	Walsh RE-1	156
Hinsdale RE-1	96	Weld County RE-1 (Gilcrest)	1,990
Hoehne Reorganized 3	363	Weld County RE-8 (Fort Lupton)	2,333
Holly RE-3	302	Weldon Valley RE-20(J)	244
Holyoke RE-1J	593	West End RE-2	274
Huerfano RE-1	537	West Grand 1-JT	422
Idalia RJ-3	201	Westminster 50	10,161
Ignacio 11JT	791	Widefield 3	9,283
Julesburg RE-1	794	Wiggins RE-50(J)	575
Karval RE-23	45	Wiley RE-13 JT	250
Kim Reorganized 88	48	Woodland Park RE-2	2,495
Kiowa C-2	287	Woodlin R-104	102
Kit Carson R-1	108	Wray RD-2	693
La Veta RE-2	215	Yuma 1	824
Total Districts: 140		**Total Enrollment: 262,896**	

Of these districts that did not have documents online, six were located with the Denver Metro setting, eight were in the urban-suburban setting, 38 were in the outlying town setting, 10 were in the outlying city setting, and 78 were in the rural setting (see Figure 4.3).

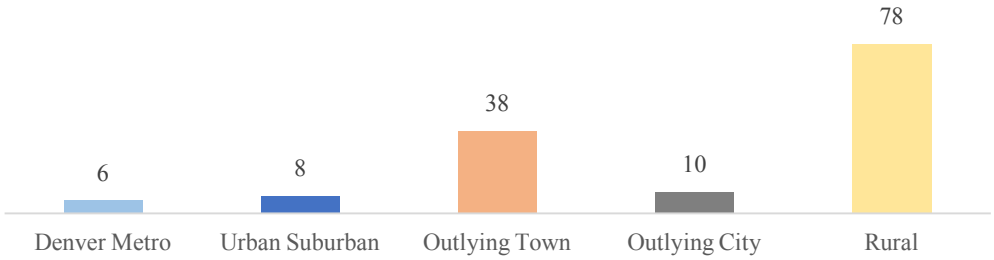


Figure 4.3: Settings of districts that do not publish emergency information document(s) online

Document Trends and Emergent Themes

As described in the first section of this chapter, a total 35 districts published 48 emergency management documents on their websites. This means the publishing ratio per district for emergency information documents is 1.4. Table 4.3 illustrates this document to district publishing ratio within each of the educational regions within Colorado.

Table 4.3: Distribution of online emergency management documents

Colorado Educational Region	Number of Districts with Emergency Documents online	Number of documents found in region	Document to District Ratio
Metro Region	8	12	1.5
North Central Region	8	10	1.2
North East Region	2	3	1.5
North West Region	4	5	1.2
Pikes Peak Region	8	13	1.6
Southeast Region	2	2	1
Southwest Region	3	3	1
West Central Region	0	0	0
Total	35	48	1.4

Listed Authors

29 out of the 48 documents did not list any authors for their online published documents. Of the remaining 19 documents that did list an author, 11 listed the I Love U Guys Foundation, six listed school superintendents, one listed an emergency manager, and one listed FEMA.

Type of Document

There were six main format types of emergency management documents within the 48 documents that were collected. Of the 48 documents, 16 (33%) were parent brochures, 10 (21%) were lengthy (20 pages and up) policy and regulation documents, 13 (28%) were brief policy outlines, seven (14%) were letters, one (2%) was a diagram of an incident command structure, and one (2%) was a classroom poster.

Document Length

The documents that were published online were relatively brief: the median length was two pages for emergency management documents found on school district websites. However, the 48 total documents ranged in length from one page to 67 pages in length.

Date of Publishing

Only 13 (27%) of the 48 documents published a date of publication. Six were published in 2015, two in 2014, three in 2013, one in 2012, and one in 2011.

Titles of Documents

Of the documents analyzed, eight had no title at all. These were typically letters to caregivers or parents that had no specific title. Seven had the exact same titles repeated. These were in cases in which school districts utilized the I Love U Guys Foundations' stock documents. These documents were titled "Standard Response Protocol Handout for Students and Parents." The remaining 33 distinct titles of emergency management documents illustrates the differing foci and framing techniques of districts' emergency management practices in Colorado. Many common phrases were found within document headers including plan/protocol, school, and parent. Table 4.4 lists the titles of each of the documents that were published online (with a title), and Figure 4.4 captures the 10 most frequently used phrases/words in the titles of the documents that were collected.

Table 4.4: Titles of online published documents

Cherry Creek School District	Lockdown Procedures: A Note to Parents
Cheyenne Mountain School District Crisis Guidelines and Responsibilities FAST FACTS!	No title **(X8)**
Crisis Action Plan	Parents Guide to Emergency Situations at Schools
Crisis Response and Management in PSD	Safe Schools Plan
Custer County School District Crisis Prevention and Response Plan	Safe Schools Policies and Regulations
Emergency Preparation Plan	Safety & Security
Emergency Preparedness for Parents	Safety and Security Plan (EOP) Summary
Emergency Preparedness Guide	School Crisis Management Plan
Emergency Procedures	School Crisis Management: A Parents Guide
Emergency Response: Emergency Response and Crisis Management	School Safety
Emergency/Crisis Management Plan	School Security Update
Guide for Developing High-Quality School Emergency Operations Plan	Standard Response Protocol Handout for Students and Parents (**X7**)
Guide to Emergency Situations at Schools	Standard Response Protocol K-12 Training
In the Event of an Emergency	Standard Response Protocol Poster
Incident Command Structure	Standard Response Protocol Volume 2
Jeffco Public Schools: Emergency Response Crisis Management Manual	Standard Reunification Method
Keeping Students and Staff Safe: Crisis Response and Safety in APS	Student-Parent Reunification… In the Event of an Emergency
Lewis-Palmer District 38 Parent's Guide to School Safety & Security	

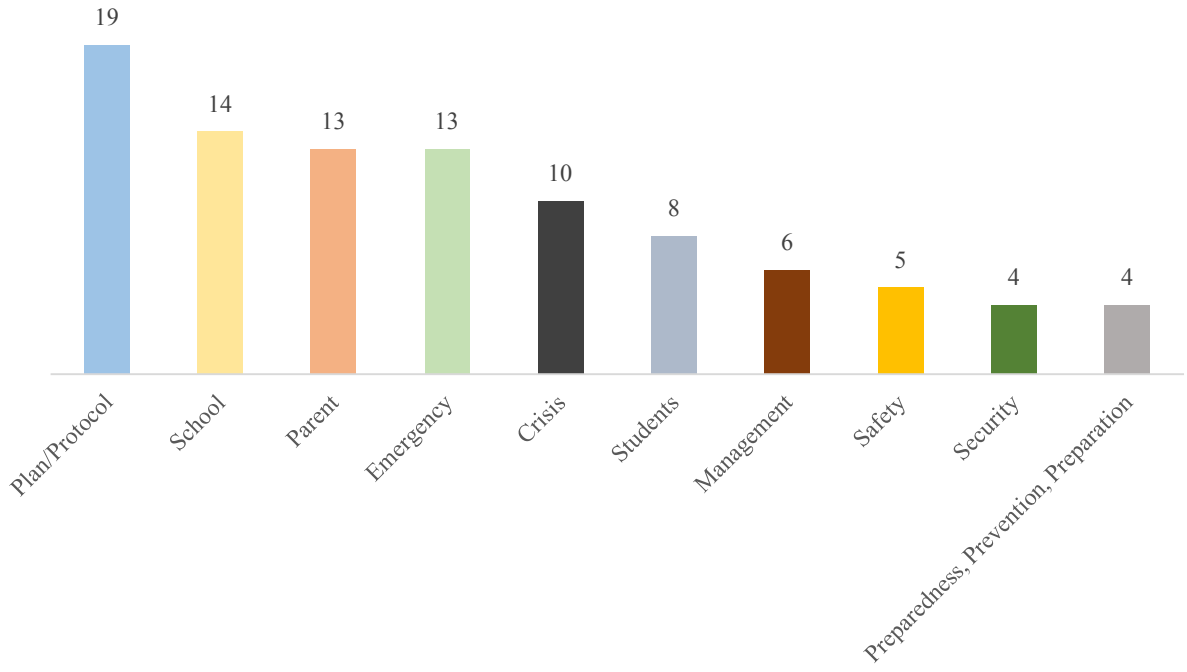


Figure 4.4: Top phrases used in title of emergency management documents

Audience

The documents were typically oriented towards parents, teachers/staff, and/or students. Documents tailored to providing parents information were identified through the direct reference to parents and caregivers concerns and responsibilities, while documents recorded as being intended for teachers and staff emphasized internal emergency procedures, including in school response team hierarchies and defined building conduct during emergency events. Documents classified as being geared toward students included language that explicitly referenced student roles or responsibilities, for instance helping school staff during emergency situations.

In terms of audience addressed, six of the 48 documents addressed multiple audiences, while the remaining 42 focused on a singular audience (see Figure 4.5).

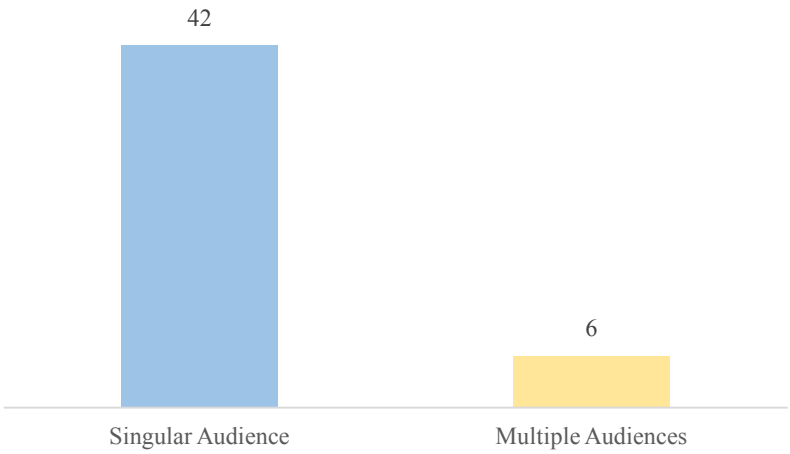


Figure 4.5: Intended audiences for emergency management documents

Documents geared in whole or part toward offering a reunification plan were especially like to address multiple audiences. For instance, these documents included information designed to help orient teachers during an emergency event, as well as to notify parents of where, when, and how to pick up their children after an emergency.

The remaining 42 documents were tailored toward a singular audience including parents (32) and teachers and staff (10). These documents addressed singular issues as well as multiple different emergency management issues, but they only offered information for one audience.

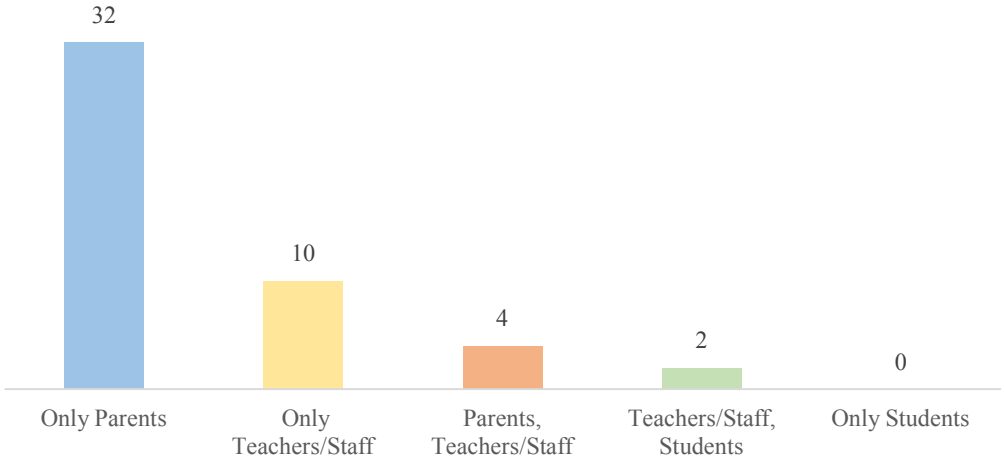


Figure 4.6: Intended audience(s) of online documents

Hazards Addressed

Nearly three-quarters, or 34 of the 48 (71%) documents, referred to their districts' emergency management procedures as utilizing an all hazards approach, while 14 (29%) of the documents did not specify what type of hazards their district emergency management and safety protocol covered (see Figure 4.7)

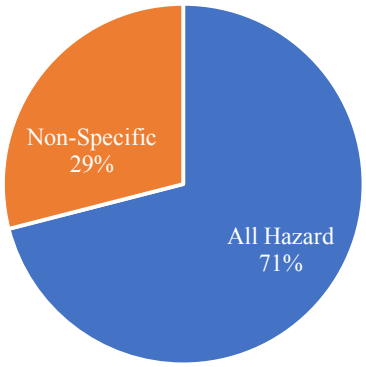


Figure 4.7: Hazards addressed within online emergency management documents

Some examples of all-hazards approaches within the collected documents included information regarding suicides and suicidal ideation, bomb threats, building fires, active shooters, hazardous material accidents, corrosive material accidents, mercury spills, gas leaks, floods, wildfire, and tornados. The emergency management documents that were coded as non-specific included statements regarding safety priorities for the district, but did not mention specific hazard types.

Additional Resources and Points of Contact

There was a great variety of the outside resources listed within the 48 documents that were collected. Some resources included local police departments and sheriffs' offices, while others mirrored resources found on the districts' websites, including Safe 2 Tell and the I Love U Guys Foundation. Although there were some instances in which there were as many as 17 listed outside resources for emergency/disaster related issues, the majority of these documents only listed between one or two distinct resources. In many cases, the shorter the document, the more prominently the outside resources for parents and caregivers, in particular, would be displayed. Longer documents typically only listed outside resources as part of an attached appendix.

Hyperlinks to outside resources were sometimes included in the published documents. In total, 18 hyperlinks were found among the 48 documents. Hyperlinks, however, were not exclusively employed for allowing easy access to outside resources, but were sometimes used to link back to the school districts' website as a point of contact.

Of the 48 total documents found on school district websites, 21 had additional further contact information for the district, while 10 of those 21 had specific emergency managers listed as contacts. This information for individual emergency specialists usually was not hyperlinked, but was only included as a district phone number.

Additionally, 11 districts suggested tuning into local radio stations (both AM and FM frequencies) for further emergency information. Six of these 11 districts listed television stations as an additional information outlet during and after an emergency. Interestingly, given the widespread use of social media in the contemporary United States, none of the collected documents referred parents or caregivers to their social media accounts for updated information or for communication purposes during an emergency.

Actionable Guidance in the Documents

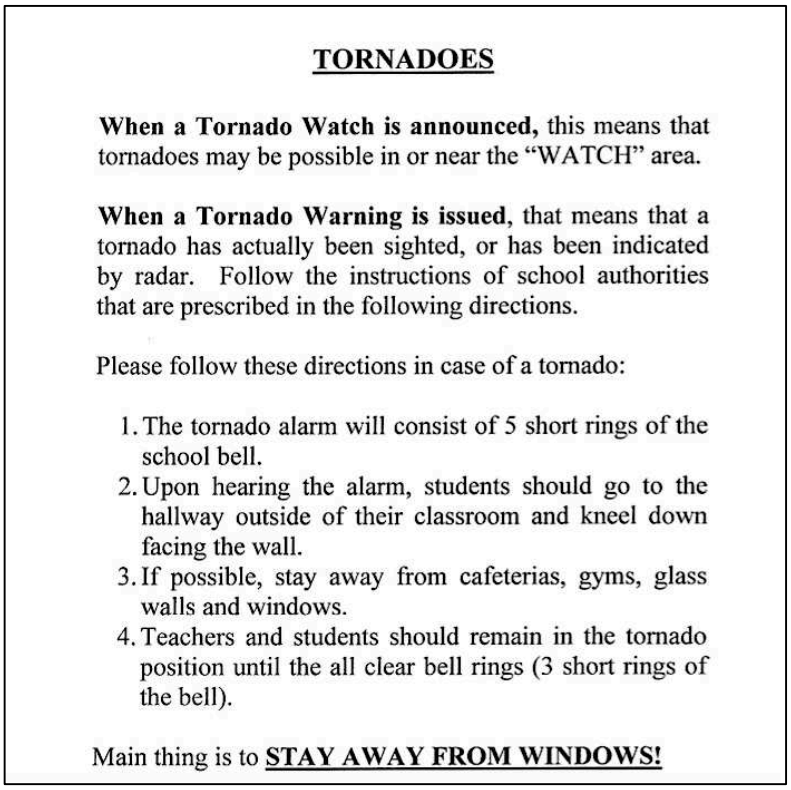
Examining actionable guidance within the gathered emergency management documents is important to note because it has a direct effect on a communities' level of preparedness. For instance, the more emergency management information tells individuals what actions they can take during/before an emergency, the more likely the individuals will be prepared and receptive to emergency procedures (Wood et al. 2012: 612). Thus, communicating more than potential threats and identifying what actions stakeholders should take, positively contributes to a communities' preparedness and response to an emergency.

In sum, there were 38 (79%) out of the 48 documents that gave actionable guidance. 20 (53%) of these 38 documents were focused towards giving actionable advice for parents, 16 (42%) for teachers/staff, and two (5%) for students.

Eight of the 20 documents that gave parents actionable advice focused only on what parents should not to do during an emergency. For instance, these documents instructed parents not to call or text their children, not to show up to school, and/or not to call the school for further information. However, another 10 documents that included a variety of actionable guidance including bringing a valid ID for reunification purposes, to keep emergency contact information up-to-date, to tune into local radio channels and media sources (i.e., television). The remaining

two documents that gave actionable guidance focused on emotional actions, which asked for parents to remain clam due the tendency for emergencies to cause "intense emotions."

Furthermore, 16 documents offered actionable directions for *teacher/staff action.* These actions ranged anywhere from listing procedures to maintain "orderly conduct" during emergency drills, threats to natural hazards, and crises events. Below Figure 4.8 illustrates an example of actionable advice found within an online document directed towards *teachers/staff action* during a tornado.



TORNADOES

When a Tornado Watch is announced, this means that tornadoes may be possible in or near the "WATCH" area.

When a Tornado Warning is issued, that means that a tornado has actually been sighted, or has been indicated by radar. Follow the instructions of school authorities that are prescribed in the following directions.

Please follow these directions in case of a tornado:

1. The tornado alarm will consist of 5 short rings of the school bell.
2. Upon hearing the alarm, students should go to the hallway outside of their classroom and kneel down facing the wall.
3. If possible, stay away from cafeterias, gyms, glass walls and windows.
4. Teachers and students should remain in the tornado position until the all clear bell rings (3 short rings of the bell).

Main thing is to **STAY AWAY FROM WINDOWS!**

Figure 4.8: Example of actionable guidance for teachers/staff

Two documents offered actionable directions for *student action*. Often the information geared towards students provided actions for emergency events included "listening to your teacher or an adult", "take emergency drills seriously" and to not run in the hallways or be by windows.

Visual Aides Found within Document

There is growing consensus in the literature regarding the importance of images in a "world [that] has never been more visually aware and visually engaged" (Harper 2012: 7). As such, I also analyzed the number and type of images or other photographs included in the 48 documents reviewed for this chapter to create a more robust analysis of the collected documents.

Of the 48 documents, 28 (58%) documents included photos or images. 17 (35%) documents included images, while 11 (23%) documents included photographs. There were only 2 cases in which a document contained both an image and a picture.

Images

The images I found in analyzing the emergency management documents were distinguished from photographs because they were not pictures and were usually a graphic or symbol of some nature. In all of the cases image were found on a document, there was never more than one. Of the 17 documents that included images, 13 documents contained images representing the main symbol of the I Love U Guys Foundation's SRP (see Figure 4.9).

Figure 4.9: The I Love U Guys' four standardized actions image

Of the remaining four images found, two were made up of graphics representing the emergency management process, and two were illustrations of incident command structures for specific school districts.

Photographs

Across the 11 documents with photos, there were a total of 24 photographs recorded. Among these 11 documents there was an average of three pictures per document.

I coded 21 (87%) of the photos as having a "positive" or "reassuring" theme comprised of first responders (three), smiling students, teachers, and parents (seven), students engaging with peers, teachers, or parents (six), first responders' vehicles (three), and students participating in an emergency drill (two). In some cases, the photographs that were used in these online documents were not just similar, but the same stock photograph that was repurposed between multiple districts' online documents. The remaining three photos that did not represent reassurance included pictures of badges, school buses, and snow capped mountains. Figure 4.10 includes examples of the types of "positive" photographs that were found in emergency management documents.

Figure 4.10: Example images from online emergency management documents

The codes for positive and reassuring themes emerged from brief memos I wrote through the initial analysis of each document. My memos included in depth descriptions of each photograph to most effectively analyze the collected photographs once all of the documents had been reviewed. Once I had finished reviewing all of the documents, I utilized open coding to formulate broad trends within the photographs and then moved toward focused coding to

elucidate “promising ideas and categories to provide the major topic and themes” (Emerson, Fretz, and Shaw 1995: 172) for the pictures found within the documents. Through this process, “hugging,” “smiling,” “engaging,” and “first responder” were descriptive words used in the memos that allowed me to identify the positive/reassurance themes within the analyzed photographs.

School Districts with Online Emergency Management Documents by Race and Ethnicity

School districts that publish online documents are, on average, more racially and ethnically diverse than districts that only have emergency management information on their website or that have no information at all on their website (also see Chapter 3). Figure 4.11 contrasts enrollment figures by race and ethnicity for the school districts that have online emergency management documents with those that only have an online emergency management presence, but no supplemental documents.

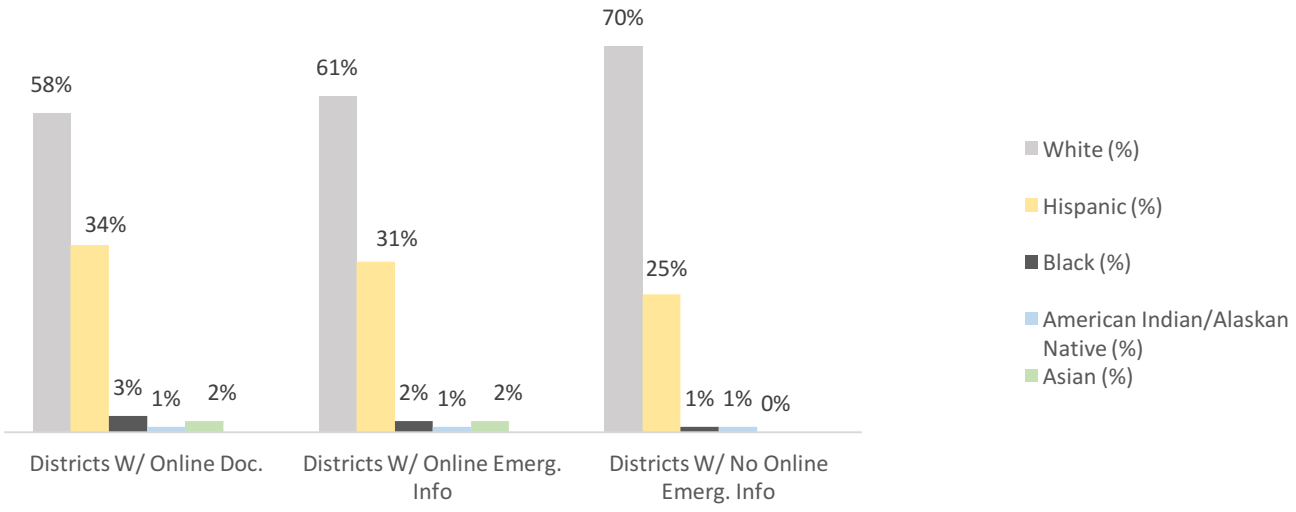


Figure 4.11: Districts that publish online emergency management document(s), districts with only online emergency presence, and districts with no online emergency information by race and ethnicity

Per Pupil Spending and Rate of Free/Reduced Lunch

Another important social dimension to consider when trying to understand which school districts publish emergency management documents on their websites is related to socio-economic factors for the schools and the students. On average, there is a lower rate of per pupil spending within districts that publish online emergency management documents ($7,284) as compared to districts that only have emergency management information on their district website ($7,632) or no information ($9,783). Districts that publish online documents and districts that only have emergency management information on their district website spend on average between $1,700 and $1,300 less per student than the average Colorado school district. Figure 4.12 displays this trend.

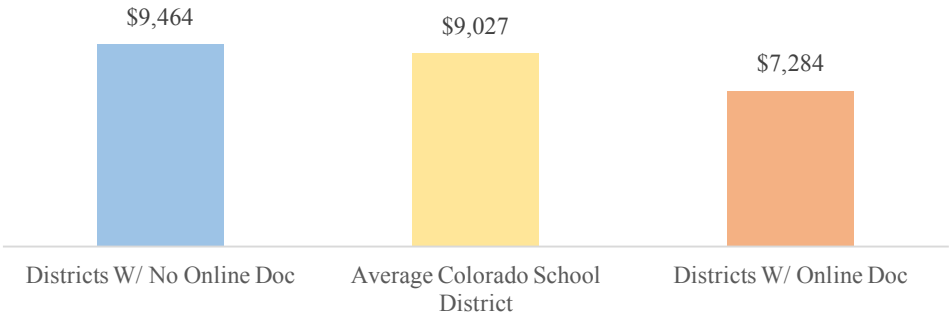


Figure 4.12: Comparison of per pupil spending among districts with no online document(s), average Colorado school districts, and districts that publish online emergency management document(s)

School districts that publish emergency management documents on their website have an average rate of 46% free or reduced lunch, which is 3% less than the statewide average, and 4% less that districts that do not publish emergency management documents online (see Figure 4.13).

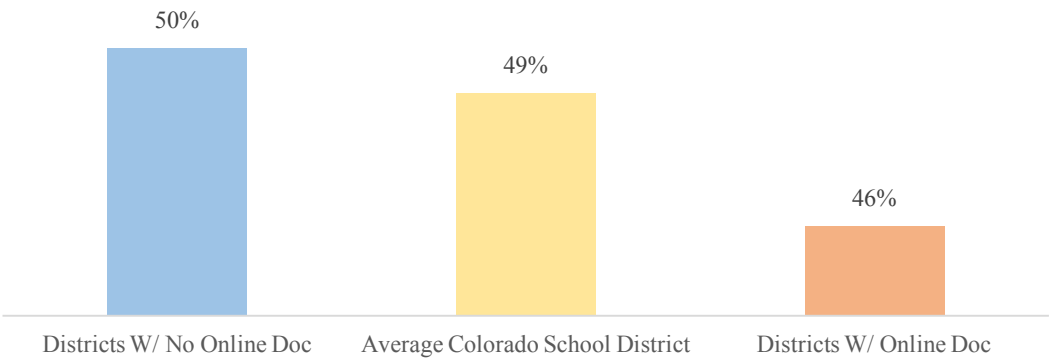


Figure 4.13: Comparison of rates of free or reduced lunch among districts with no online document(s), average Colorado school districts, and districts that publish online emergency management document(s)

CHAPTER 5
CONCLUSION

This final chapter reviews the central findings from this thesis. The first two sections are organized in response to the five primary research questions driving this work. I then summarize the primary research limitations. Then, I detail future directions for research on school district emergency management communication. This is followed by a short section presenting the benefits of integrating online communication of emergency management information within districts in Colorado. The final section offers three actionable improvements for school districts in Colorado. These suggestions are informed by the findings from this thesis as well as best practices in the current applied sociology and emergency management literature**.**

Results for Question 1 and Question 2

My first and second research questions sought to answer:

> How many of Colorado's public school districts include emergency management information as part of their websites?
>
> How does this online emergency management information vary by region, setting, student enrollment, and socio-economic status of the students and school districts?

My analysis revealed that as of January 2016, 55 out of 175[1] (31%) school districts have online emergency management information. These districts enroll 87% of all public school students in Colorado. The average enrollment size for school districts with online emergency management information on their website is 13,652.

School districts that did not publish any online emergency management information on their website constitute around 69% (120 out of 175) of school districts within the state, but only

[1] In total there are 179 listed school districts in Colorado. However, four school districts were excluded because they did not have an active website.

encompass 13% of student enrollment for Colorado. The average size for school districts without online emergency management information is 957 students.

Thus, this analysis revealed a "rural-urban" divide in terms of which districts across the state publish online emergency management information. Indeed, nearly 60% of schools that publish online emergency management information are located within the most populous settings as defined by the Colorado Department of Education, including the Denver Metro, urban-suburban, and outlying city settings. Furthermore, the Metro Educational Region, North Central Educational Region, and Pikes Peak Educational Region, which all have total student enrollments of over 100,000, are also the only educational regions where 50% or more of their districts publish emergency information online. In contrast, approximately 90% of school districts that do not publish any online emergency management information are located in the less populous areas of the state, including outlying town and rural settings. Moreover, only 13% of the districts in these outlying town and rural settings listed contact information for emergency specialists on their websites.

In terms of the hazards addressed, just over two-thirds (67%) of the districts with online emergency management information used an all hazards approach on their websites, while 13% were nonspecific and referred to school safety in general. About 7% focused on active shooter situations, 7% spoke to technological/accidental disasters, and 6% were password protected and hence could not be analyzed.

Nearly three-quarters or 42 of the 55 school districts that published online emergency management information listed at least one outside resource. The most often utilized outside resources included the Safe 2 Tell organization and the I Love U Guys Foundation.

This thesis revealed that school districts that publish online emergency management information are also more diverse than the average Colorado school district. For instance, schools with online emergency management information enroll fewer non-Hispanic White students and more Hispanic students than the average. In contrast, school districts without online emergency management information are more White, on average.

Interestingly, school districts without online emergency management information, actually spend more per pupil ($9,783), than school districts with online emergency management information ($7,632), and Colorado school districts on average ($9,027). There was less difference in rates of free/reduced lunch, with districts without online emergency management information averaging 51% of students being eligible for these programs, while school districts with online emergency management information averaged 46% eligibility. The statewide average for all Colorado school districts is 49%.

Results for Question 3, 4, and 5

My remaining research questions asked:

> How many of Colorado's public school districts publish emergency management documents online?
>
> How do these documents vary by region, setting, student enrollment, and socio-economic status of the students and school districts?
>
> How do Colorado public school districts frame emergency management information published online?

In order to answer these questions, I had to first identify and download all emergency management documents that were included as a subset of the online information that I had previously analyzed. My analysis revealed that 35 school districts (20%) published at least one emergency management document on their website. These school districts had an average enrollment size of 17,000 and constituted around 70% of total student enrollment within the

state. These school districts that published online documents, like those that had online emergency management information, were more likely to be located in the more populated educational regions including the Metro Denver Region, North Central Region, and the Pikes Peak Region.

Roughly 80% (140 out of 175) of school districts had no online emergency management documents available for download on their website. The average enrollment size for these schools was 1,871. School districts with no online emergency management documents enroll about one quarter of all students in Colorado.

In the end, I downloaded 48 documents from the 35 sites that published emergency management documents online. I then read and analyzed those documents, and found that there were 26 distinct phrases employed to signal emergency management information. These phrases primarily revolved around "Safety and Security," "Safety," "School Safety," and "Student Safety."

Of the 48 documents that were analyzed, 34 (71%) referred to their district emergency management procedures reflecting an all hazards approach, while 14 (29%) did not specify the type of hazards their district was prepared for.

From the 48 documents, there was a range of actionable advice given. For instance, 53% of documents offered actionable advice for parents in terms of preparing for or responding to an emergency situation; 42% of the documents included actionable advice for teachers/staff; and 5% offered actionable guidance for students affected by an emergency or disaster.

In terms of the framing and format of the document, I found that 28 number of documents included some sort of photograph or image. 17 of the documents offered 17 images. 13 of the documents that included an image or symbol used the I Love U Guys Foundation's

Standard Response Protocol images. I also analyzed 24 photos that were included in 11 documents. Of these photos, 21 (87%) represented positive or reassuring themes including first responders, smiling students and parents, students engaging with their peers, teachers, and parents, and students practicing emergency drills.

Limitations

As with any study, there were various limitations to this research. One such limitation was inherent in the approach. Specifically, I only analyzed secondary data that was available online. School districts obviously may rely on other communication channels to convey emergency management information to multiple audiences. Only analyzing information via the districts' online presence may not accurately reflect its communication through many other channels including emails, letters, text messages, automated phone calls, social media postings, handouts/flyers, and local radio and television channel broadcasts, for instance.

A second limitation to this study was that I did not capture how social media profiles and accounts of school districts are managed or used. Instead, I only identified whether a school offered access to social media. Given the rise in social media usage across groups and organizations, this is an important limitation. It also meant that I was unable document how often social media is actually used to share preparedness information or real-time emergency management information.

A third limitation to this study stemmed from the fact that I was the only person who coded the online emergency management information and documents that I collected. Although I followed rigorous protocol and procedures of qualitative content analysis (see Ravitch and Carl 2016; Altheide and Schneider 2013; Neuman 2011; Bryman 2008), I was the only researcher to

analyze the data for this project. This means that I was not able to test inter-coder reliability, which only could have happened had additional researchers worked on this project.

A fourth limitation of the research is that I did not gather primary data from school leaders, parents, students, or other possible respondents via interviews, surveys, or other means. Because I only drew on secondary data, I obviously was not able to use other methods to understand how teachers, parents, or students, for instance, are actually accessing emergency management information. I do not know how often the sites I analyzed are visited (or by whom), how often the documents were downloaded, or who uses the social media or for what purpose. Assessing availability of information is obviously one thing, while usage or access is a whole other thing.

Although there are certainly limitations to this work, I do believe that this represents a positive first step in beginning to assess and understand the availability of emergency management information through one particular channel. As with much research, this study also perhaps raises as many questions as answers. In the next section, I address some of the new questions and potential areas for exploration that this study may encourage in the future.

Future Research Directions

This thesis revealed that as of January 2016, there is a low rate of total school districts within Colorado that utilize online mediums for the communication of emergency information. This low rate of participation suggests several areas for future research. To begin, a statewide survey of school district leaders regarding emergency communication practices would allow for more statistically representative insight into each district's reasoning for choosing or not choosing to publish emergency information online. Surveys are an invaluable and relatively low cost tool for social research due to their ability to give representative portraits of attitudes,

behaviors, and beliefs of large populations that may be spread over a large geographic area (Babbie 2013: 253; Neuman 2011: 308-309; Bryman 2008: 217-218).

The suggested survey could be web based in order to reach both rural and urban districts in a timely manner and be focused on the emergency specialists and superintendents of Colorado school districts. Questions could inquire into ways in which a school district may choose to communicate emergency management information (which would help remedy a limitation within this study), if they have an emergency manager or specialist and when this position was created, if these districts had recently experienced any recent emergency situations or hazards, and what processes helped to inform their district's emergency procedures and communication of such procedures, for example. Future survey research would help contribute to an understanding beyond online information by addressing additional social and contextual factors influencing emergency management tools utilized by school districts.

Furthermore, an in-depth media analysis of how social media accounts are used by public school districts would provide a great companion to this current research by helping to characterize what, if any, emergency information is shared in general and during emergencies via social media sources. To do so, a researcher would have to download and analyze Twitter feed and Facebook posts to explore whether or not any of the information shared was related to emergency management. This approach has been used successfully by other social scientists in other disaster settings including wildfires in Southern California and the Virginia Tech School Shooting (see Hughes et al. 2008: 2; Shklovski, Palen, and Sutton 2008: 2). An analysis of this kind would be helpful given the widespread and growing use of social media by students, parents, and school districts and would contribute to the growing body of literature surrounding the benefits of social media use/microblogging during disasters (see Vieweg et al. 2010).

Case-studies of schools districts that do or do not have a history of online communication of emergency management information could also be a focus of future studies. This type of research could provide more depth of insight into the urban-rural divide that was revealed in the present study. Using a case study to investigate this division would further allow for descriptive and explanatory insight (Babbie 2013: 309), due to a case study's ability to "calibrate or adjust the measures of abstract concepts to actual lived experiences" (Neuman 2011: 42).

There is also a need for comparative research in other states beyond Colorado. This would expand the present analysis to "Different social settings [which would] provide a wide range of events or behaviors" (Neuman 2011: 487) to investigate. This thesis offers a template for analyzing online information as well as emergency management documents found on school websites and could be replicated in other states across the United States. Doing so would allow for a state-level comparison of the results of this study, and would help reveal whether there are geographic, political, or other contextual factors that may be shaping the publication of online emergency management communications.

All of these future research directions would be helpful to emergency managers due to their practical and applied nature. These studies would also provide important contributions to the literature on children and educational vulnerability, which advocates for the development of resiliency amongst children and communities (Peek 2008: 14) as well as for increased emergency management education of the wider community in which a school may be situated (Wachtendorf et al. 2008: 457-458).

The Internet and Emergency Management

Due to the low proportion (31%) of school districts publishing online emergency management information on their websites, many districts may utilize more traditional channels

of communication, which allow for only the passive reception of information. By integrating website and social media in emergency management communication, school districts could allow for more dynamic and real time dialogue between their emergency management team and the public.

Doing so would also provide a consistent source of up to date emergency management information, which has been shown to increase community-level emergency preparedness (Wood et al. 2012: 612). Furthermore, the more accessible information is, the more trust that can be built with affected stakeholders. Indeed, Sheppard, Janoske, and Liu (2012: 21) argue that effective communication can increase trust and mitigate secondary ramifications during the recovery stages of an emergency event. Thus, if parents and caregivers trust their child's school district with their emergency response, "[…] they are more likely to take a warning seriously and act accordingly" (Gachinger 2013: 1063).

Additionally, this continual exchange of information between residents and emergency managers may expand and improve the coordination of emergency responses within a given community (Jaeger et al. 2007: 593). This opportunity to engage in the formulation of emergency response protocols has also been found to be "[…] the most effective means to create awareness of potential disasters, to enhance the trust in public authorities, and to encourage citizens to take more personal responsibility for protection and disaster preparedness" (Gachinger 2013: 1063).

Although updating information through online mediums may be costly, social media provides a free platform for the dissemination of school districts' emergency management procedures. For instance, online information and information available via social media can provide fast and versatile flows of information, which allow for the opportunity to provide richer

coverage in circumstances where there is a lack of information (St. Denis et al. 2013: 745; Alexander 2013: 722).

Diversifying the communication of emergency management information is important because school districts often discourage using phone lines during an emergency event. Thus, communication via the Internet and/or through social media could ease traffic over more traditional information channels during a crisis. This also could: "[…] provide a more reliable means of communication, because traffic is designed to route itself intelligently around busy spots. Whereas landline phones must pass through a particular network and mobile phones have to communicate with a limited number of radio masts, Internet routers are more flexible" (Kapuco 206: 220).

Adoption of social media by school districts in Colorado has already begun to take place, with more districts having Facebook accounts (46%) than school districts that publish emergency management information on their website (31%). This thesis also revealed that school districts already have over 167,000 Facebook followers and more than 67,000 Twitter followers. All research in this area indicates that these numbers will undoubtedly continue to grow. With that in mind, however, it is important to remember as well that the rate of active social media adoption varies between districts that do publish online emergency management information and those that do not (see Figure 5.1).

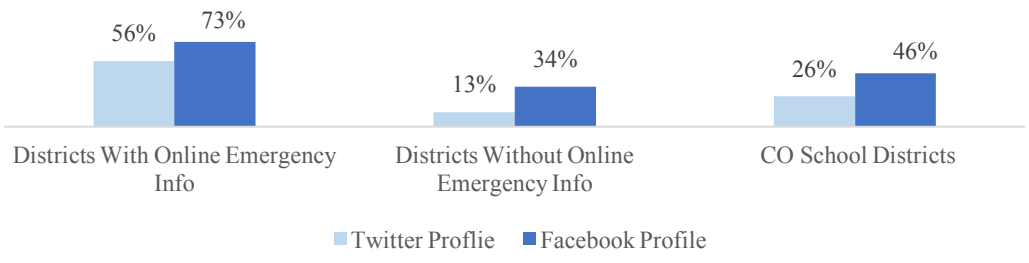


Figure 5.1: Social media adoption graph

Additionally, recent Colorado Senate Bills passed in June 2015 may disincentive school districts from incorporating more channels, including social media, to communicate emergency management information. Colorado Senate Bill Senate Bill 15-213 and Senate Bill 15-214 put additional pressure on school districts to provide adequate protection against emergency situations on school grounds. These bills dissolve governmental immunity for school districts and establish precedents for safety in schools in absence of "reasonable care" (Colorado General Assembly 2015). Some argue that this has created a panic amongst school districts due to these laws "encourage[ing] lawsuits by charging schools with a greater duty to protect public safety than currently applies to law enforcement" (Mickus 2015: 1). In part, these threats of litigation to school districts may reinforce a tendency towards emergency management confidentiality in order to decrease public scrutiny.

Thus, beyond the adoption of online resources, a potential update in the practices surrounding the disclosure of emergency management information online may need to occur to ensure Colorado school districts adherence to current emergency management best practices.

Concluding Suggestions Founded in Best Practices

Although there may not be one correct way for districts to publish online emergency management information, there may be better ways to communicate than currently employed by school districts. Below I discuss some of the shortcomings of online emergency management communication revealed by this research and offer solutions grounded within best practices of current applied sociology and emergency management literature**.**

To begin, the integration of providing more online emergency management information should occur. As this thesis revealed, only 31% of school districts publish any information pertaining to online emergency management. Of the school districts that did not publish online

emergency management information, 63% of these districts are located within rural settings in Colorado. Thus the parents, students, and school staff within these mostly rural districts are limited in their ability to advance a "culture of preparedness" that is heavily encouraged by most Federal agencies, including, perhaps most notably, the Federal Emergency Management Agency and the Department of Homeland Security.

By diversifying rural districts communication of emergency management information, a variety of best practices in applied emergency and crisis management can be applied. These include a district's ability to listen and understand their community, foster a partnership with the public, and allow for the public to participate in all stages of the of emergency management process (Seeger 2006: 237-240). Furthermore, many have observed that this process of increased accessibility of emergency management information helps to empower the public during emergency events and allowing the public to transition to recovery more rapidly (Virtual Social Media Working Group and DHS First Responders Group 2012).

This thesis also highlighted a need for not only the publication of more information online, but also for that information to be more actionable in nature. Specifically, this thesis showed that as of January 2016, only 20 (42%) of all online documents offered actionable guidance to parents, 16 (27%) to teachers, and 10 (20%) for students. And, recall that the number of online documents was severely limited in scope of coverage in the first place. By focusing on more actionable guidance, school districts can allow "stakeholders in a crisis situation to gain a sense of control through meaningful actions that promote a sense of self-efficacy" (Veil, Buehner, and Palenchar 2011: 120).

Another recommendation from this research revolves around how smaller and more rural school districts within Colorado may need additional human and financial resources in order to

advance their adoption of online communication of emergency management information. As reviewed in Chapter 1, Senate Bill 08-181 was passed on a premise that it would help bring uniformity within school emergency responses and also help rural districts to become better prepared (House Committee on Education 2008). However, this research reveals that a wide and remaining divide between urban and rural online communication of emergency management information. Thus, I suggest that state legislators as well organizations like the Colorado School Safety Resource Center help to create and support standards for online communication of emergency management information in all districts across the state. Others have suggested that "State and community agencies and organizations are the primary players in implementing related interventions" including the establishment of "standards and expectations in the effectiveness of risk communication" (Andrulis, Siddiqui and Gantner 2007: 1277). This work affirms the importance of exactly these sorts of interventions.

In order to move forward with this process, leaders and practitioners could offer instructions and even templates explaining how to display up-to-date information, informing the user of what types of actionable information should be included, and assisting with how to best utilize online resources. These templates could then be implemented through bond measures or other programs. Challenges to the actualization of this recommendation are real, especially in light of recent polls showing that Colorado spends roughly $2,700 less per student than the national average (Brundin: 2015: 1). Yet, even as budgetary barriers exist, the rising toll of disasters in Colorado and beyond underscores the urgency of moving forward with advancing emergency preparedness to all schools in the state.

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