2019

Miami-Dade Task Force: A Content Analysis of How Coastal Communities View Sea Level Rise as a Threat

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MIAMI-DADE TASK FORCE: A CONTENT ANALYSIS OF HOW COASTAL COMMUNITIES VIEW SEA LEVEL RISE AS A THREAT

by

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B.S. University of Central Florida, 2017

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Science
in the Department of Interdisciplinary Studies
in the College of Graduate Studies
at the University of Central Florida
Orlando, Florida

Spring Term
2019

ABSTRACT

Sea level rise (SLR) has become a serious threat for coastal communities in recent years. Many communities, including South Florida, are already having the security of their daily lives impacted as climate change causes SLR and other environmental impacts to worsen. This study reviews the Miami-Dade Sea Level Rise Task Force Report to determine how this coastal county government views SLR as a threat. Using mixed content analysis to analyze the report qualitatively and quantitatively, the Task Force's recommendations are categorized based on their focus on security, infrastructure, economics, and the environment. One finds the concerns of the people to maintain their property and infrastructure, as well as their access to water and other basic needs, as insurance costs spike and funding becomes more difficult to obtain. Policies will have to be revised using updated scientific studies, modeling, and mapping to mitigate against the worse-case scenarios.

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INTRODUCTION

Sea level rise (SLR) is an important problem for coastal and island nations and communities. These areas are accustomed to their own set of challenges: storm surge, tropical storms, flooding, shoreline erosion, and management of drinking water. Changes in sea level have been an obstacle to people living near or surrounded by the ocean as long as human society has been in existence. However, the rate of SLR has increased and only makes the challenges these communities face even more of a threat.

Scientific studies into the subject have found highly consistent evidence that links these rates of SLR to the effects of climate change; the research and prediction models also show increased risk to many coastal communities around the world (IPCC, 2013). The state of Florida is considered to be one of the coastal regions that will be the first to experience serious impacts related to SLR driven by climate change, with South Florida already starting to be affected (Donoghue, 2012). Because of this, Southeast Florida Regional Climate Change Compact set up a way to further address the threats of SLR in their 2012 Regional Climate Action Plan. The next year, The Miami-Dade Sea Level Rise Task Force began meeting. Their mission: "an urgent, though optimistic, call to begin the step by step process needed to design and build a re-engineered urban infrastructure that over time will withstand a worst-case scenario" (Ruvin et al., 2014, p. 2).

The South Florida Regional Climate Change Compact was a meeting between Palm Beach, Broward, Miami-Dade, and Monroe Counties in January 2010 to address increasing climate change issues affecting these areas. This Compact leads to the creation of the 2012 Climate

Action Plan to plan out reducing greenhouse gas emission and other ways to adapt to regional and local impacts (Ruvin et al., 2014). Part of the adaptation plan for Miami-Dade County was creating the Climate Change Advisory Task Force. This Task Force recognized the need to address the impacts of SLR in greater detail as "sunny day flooding" and other issues continue to worsen. This is why Miami-Dade created the Sea Level Rise Task Force.

This study examines, through content analysis, the Miami-Dade Sea Level Rise Task Force Report. The goal is to understand the way Miami-Dade County government perceives the threats of SLR. First, the paper will review relevant literature and SLR, climate change, and the choice to analyze the Miami-Dade Sea Level Rise Task Force Report for this study. We will then go over the methods used in conducting the content. Finally, the paper will review the data resulting from the analysis and discuss what these results mean for the perspective coastal communities place on the threat of SLR.

LITERATURE REVIEW

Before we can analyze how the Sea Level Rise Task Force defines SLR as a threat to Miami-Dade County, it is important to have an understanding of some of the background knowledge on SLR. As the main focus of the analysis is SLR, this chapter will first go into some of the science behind SLR and why it is a cause for concern. Then, as SLR is highly linked to climate change, we will take a quick overview of climate and the effects of climate change.

As this study analyzes how SLR is viewed as a threat, this analysis looks at SLR as a security issue instead of solely an environmental one. Because of this, we will discuss some of the basics of studying security concepts to fall back on when reviewing the content analysis. The topic of why we look to South Florida for insight into the minds of coastal communities will be discussed at the end of this chapter.

Sea Level Rise

Many only think of SLR within the context of global warming and climate change, but changes in sea level have been a natural part of the Earth and its oceans. For many, ocean and sea levels are thought of as constant. Sea level is even used to define the elevations and depths of key geographical locations, further cementing in the mind of laypeople that SLR is permanently fixed in time and space (Hine et al., 2016). This can lend to a lack of understanding when it comes to the subject of SLR and the effects it can have on people and the environment.

Natural Sea Level Change

Natural cases of sea level change can be seen in a number of forms. One of the most observable is daily tides. The position and gravitational pull of the earth, moon, and sun create tides that contribute to a short-term and cyclical form of sea level change. These events occur as equal reactions to one another, however, and does not create a permeant positive or negative change in sea level. Even more short-term versions of sea level change can be observed during high- and low-pressure systems, as well as when there are variations in temperature, rainfall, wind circulation, and evaporation levels. Although often extremely damaging, storm surge from hurricanes, typhoons, tsunamis and other types of natural disasters are not usually considered a type of sea level change. While surges can cause water to come far inland, these events are localized, and the water returns to mean sea level after some time (Hine et al., 2016).

Sea level changes can also occur on a more long-term time scale. This kind of change to sea level generally relates to the melting and creation of continental ice sheets. As these ice sheets melt, water returns to the ocean and sea levels rise; however, as more ice sheets are formed, sea levels drop as water is removed from the ocean. This naturally occurs due to variations in both the cycles of the earth's orbit around the sun, and the cycles of the earth's rotation around its own axis, often referred to as the Milankovitch Cycles (Hine et al., 2016). Changes to sea level occurring over long periods of time often also result from tectonic plate activity. With variations in the rate at which the seafloor spreads and mid-ocean ridges expand or contract, the basin of the oceans decreases or increases and cause sea levels to rise or fall respectively. This will also occur when underwater eruptions of lava pour into the seafloor.

Human Contributions to Sea Level Change

If changes in sea level are a natural part of the earth and its oceans, why are we so concerned about SLR now? One of the main concerns with modern-day SLR is that the rise in sea levels does not follow the patterns of the natural variations discussed previously. According to the pattern of earth's orbit and orientation cycles, we should be experiencing a cooling planet as the magnitude of solar radiation reaching the planet lessens. However, this does not appear to be the case: "Currently, the incoming solar radiation, which is driven by orbital parameters, is on a downward trend and cannot explain today's observed warming" (Hine et al., 2016, p. 24).

Much of what contributes to modern-day SLR is related to changes in the earth's climate. As mentioned, temperatures around the world have been steadily getting warmer. This warming has led to global ice sheets melting more rapidly than in the past, putting more water back into the ocean and rising sea levels (Anderson, 2007). The water levels in the ocean do not even need to change for SLR to occur; changes in sea level can occur when there are changes to the density of ocean water. Since the global climate is currently warming, this is leading to a decrease in the density of seawater. As the mass of the ocean is not changing, the volume must become larger to compensate for the loss of density, making sea levels rise.

Modern-day SLR can even be seen happening due to causes that are on a much more regional scale. One such regional cause is land motion. Land motion can be caused by tectonic activity, mining, hydrocarbon extraction, and similar activities. Fluctuations in wind and ocean current patterns can also lead to localized SLR. In specific regions, sea levels can increase rapidly due to intense flooding caused by storm surge, winter storms, and tropical cyclones.

All of these variables, both natural and modern, contribute to changes in sea level over space and time. Current knowledge suggests that the effects of climate change and human activity will cause SLR to continue to occur. Even if there were global decarbonization effort to mitigate this, we will still have to be committed to long-term SLR on the scale of years or even decades (Goelzer, 2012). As is the case, many ocean and shoreline communities will need to rely on SLR mapping and modeling to predict different risk scenarios more.

Climate and Climate Change

As climate change plays such an important role in modern-day SLR, it is important that we have an understanding of the climate, as well as why and how it is changing. Many laypeople tend to use the words "climate" and "weather" interchangeably, but climate is different from weather. Weather is used to refer to atmospheric conditions at any given point in time, usually referring to any timeframe between minutes and months. Climate, on the other hand, refers to the pattern of these individual atmospheric conditions over a period of time consisting of a year or longer. Weather is the daily trends that add up to produce what we observe as climate.

There are a number of factors we look at when we look at climate. One such factor of climate we look at is temperature. More specifically, we observe global increases and decreases in temperature over time. Another important factor is high and low atmospheric pressure patterns. These pressure patterns are what lead to conditions that result in periods of time during the year where storms such as tropical storms and hurricanes occur more frequently. Other factors that are observed to understand climate are precipitation, humidity, sunlight exposure, and wind velocity.

Climate has always been a changing variable in earth's history. The earth the dinosaurs roamed 66 million years ago is believed to have been 20 degrees warmer than today (Collins et al., 2017, 199). Due to varying levels of sunlight reaching earth over long periods of time, the planet experience patterns of ice ages and warmer periods. This pattern of change between these periods is often related to the Milankovitch Cycles discussed in the previous section.

Contemporary climate change is different from changes naturally observed in the past, due to human activity. According to observed natural patterns in temperature and the Milankovitch Cycles, the planet is currently in an ice age (Hine et al., 2016). However, global temperatures continued to be observed breaking record highs year after year. Much of this rise in global temperature is contributed to human activity. Increases in human populations and advancements in society lead to more and more changes to the land's surface. This can disrupt natural temperature regulators that helped maintain the past natural patterns in global temperature. Since the Industrial Revolution, there has been exponentially increasing usage of fossil fuels and other products that release carbon dioxide and similar gases into the planet's atmosphere. These gases absorb energy and heat coming up from the earth's surface and re-radiates much of that heat back to the surface of the planet. This greenhouse effect, exacerbated by human activity, leads to the pattern of global warming we have observed in recent years.

Security

The word "security" is a word that can take on different meanings depending on what the situation is. Many laypeople's understandings of the term are as the state of being or feeling secure, but one can achieve or lose this in a multitude of ways. If one wants to feel safe from robbers and break-ins, they will get a home security system. If people want financial security,

they carefully save their money and sometimes also get insurance for their house, automobiles, and other expenses. There is such a vast number of different types of security, as well as a number of different concepts of security and what it means to be secure. How does one go about explaining and defining such a vast and general concept? And what does this have to do with SLR?

Understanding Security and Security Studies

The definition and requirements for what constitutes as "security" differs between different schools of thought, and has changed, as well as evolved over time. Globalization and boundaries, resource usage, the role(s) the environment plays, and the human factor, among other things, often shapes how a person looks at security, as well as how much these conditions should define security, in the modern era. Let us start by going into more detail on the concepts of security and security research.

Boundaries and the increase of globalizations in the world have become important factors in defining "security". One of the impacts of globalization on today's society is the increased emphasis on borders between nations and sovereign states. An unfortunate result of the increase emphasis on boundaries and borders is the increase in "us versus them" rhetoric. The Copenhagen School of thought looks at security from the perspective that the articulation of security helps to structure social practices (Stritzel, 2007, p.340). Much of this articulation is in the context of borders and "homeland security" is the "us versus them" rhetoric. The exact context of these "us" and "we" statements often depend heavily on who exactly is encompassed in the "us" that is being discussed at the specific moment.

Another school of thought on this matter, besides the Copenhagen School, is the Neo-Gramscian approach. This approach, as discussed by Earl Conteh-Morgan, adds to the points made by Chris Philo on the negative impacts of globalizations on security. The focus of Conteh-Morgan's (2002) article is how while globalization, which he refers to as internationalization, creates positive effects in some places, many places have found globalization to produce more negative results (p. 58). The rapid increase of globalization in many places has affected the status quo, and this in turn leads to a rise in human insecurity. Many times, this is because the social economic and political changes produced by globalization deepens the unequal power levels between national and international levels: "The eruption of violent conflicts is, at times, an attempt to address human economic existential anxiety caused by globalization's destruction of the 'social contract' between state and society resulting in loss of economic support systems" (Conteh-Morgan, 2002, p. 6).

The global market, especially in developing countries, are often easily able to overtake local economies. This can lead to unrest that causes the conditions, such as migrant workers, where "us versus them" rhetoric narrows people to only an inward-looking perspective on security. It is as Philo (2012) states in his work, *Security of Geography/Geography of Security*, "the long-term security of either a discipline/subject or a people/community/environment is going to depend less on sealing their boundaries and more on an open-handed – if always critically careful – encouragement of boundary crossings" (p. 6).

Security and the need to feel secure has become a standard part of daily life in modern society. As such, almost every discipline has a focus dedicated to understanding the ways security pertain

to or could be affect by their field of study. This makes security an interdisciplinary topic, but this also means one if usually left to guess at the precise meaning of the term "security" when it is used (Bourbeau, 2015, p. 22). Because of this, it becomes the responsibility of the one presenting the information to help the audience understand the context in which the term "security" is being used.

While security is a multidisciplinary subject, experts and researchers do not always treat security as multidisciplinary. The accepted norm for many fields of study when it comes to research has generally been the concept of researchers "staying in their own lane". Biology studies should only reference Biology research and techniques, Psychology studies should only use other Psychology studies and concepts for their research, and so on. Literature on security often has this problem, often having research consolidated into different disciplines (Bourbeau, 2015, p. 5). But, by bringing elements of each discipline together, future research can use the strengths of different fields of study to gain an improved understanding and knowledge of security.

Human Security

While there are many different foci when it comes to analyzing security, much of what this paper analyzes and discusses generally relates to the idea of Human Security. Before the concept of Human Security was born, the notion of security traditionally focused on military power. As the name might suggest, Human Security shifts the focus of analysis towards the security of the individual. As such, Human Security can broadly be defined as the protection of people from any risks to their physical or psychological safety, dignity, and well-being (Tadjbakhsh & Chenoy, 2007, p. 3). This means Human Security research analyzes numerous aspects of human society, as well as the different physical and social environments people live in. Many of these

aspects can be broken down into their own specialized concepts of security, including Economic Security, Food Security, and Health Security.

Since the concept was first thought up, many have theorized about and further developed the concept of Human Security. People want freedom from both their fears, as well as their wants. This means looking at security protecting people's daily lives from sudden disruptions, instead of just physical safety. Two main schools of thought that arose are the minimalist and maximalist approaches to Human Security. The minimalist approach focuses more on the "freedom of fear" aspect of Human Security. This approach addresses more traditional threats, such as armed conflict, human rights abuse, and public insecurity (Tadjbakhsh & Chenoy, 2007, p. 40). This allows for improvements to the analytical quality and policy-applicability of Human Security.

On the other side of the spectrum is the maximalist approach to Human Security. This school of thought includes "freedom from want" along with the "freedom of fear" aspect addressed by the minimalist approach (Tadjbakhsh & Chenoy, 2007); even broader approaches usually also includes insuring people a life of dignity. These added aspects of Human Security require the analysis of non-classical security factors like education and health care. These broader studies of Human Security provide the perfect environment for increased interdisciplinary dialogue.
The minimalist and maximalist schools of thought might not seem like they would agree, there is some overlap in their definitions of Human Security:

> The various definitions of human security differ according to the nature of threats, values and priorities to be pursued, and strategies for prevention, yet, there are commonalities to be found, the foremost being that security is seen beyond the

> prerogative of the State, but as that of individuals within them. Second is the inter-dependence between the security of individuals and that of systems. Human beings therefore become a point of national and global interests. Third is the expansion of the notion of violence, which goes beyond physical threats to such outcomes as extreme under-nourishment, human rights abuses, etc., echoing the structural violence in the writings of Galtung. To traditional threats of conflict, violence, nuclear weapons, military threats and terrorism are added non-traditional ones, i.e. economic, social, environmental, etc., in other words, quality of life (Tadjbakhsh & Chenoy, 2007, p. 49).

Because of this, it is important to consider applying multiply schools of thought when analyzing matters of Human Security. This will allow for the bigger picture to become clearer.

Environmental Security

As mentioned previously, Human Security can be broken down into different fields of study depending on which threats to security are being examined. However, many of these aspects of Human Security can be placed into the overarching study of Environmental Security. The general idea of Environmental Security is defined as trying to minimize the risks of environmental impacts on human health and safety (Porfiriev, 1992, p. 736). This is a relatively simple definition of the concept, as there are many different environmental and human factors that play into how Environmental Security can affect people's livelihoods. These impacts can be caused by all kinds of environmental factors that regularly happen in natural systems. Many of the factors that get the most attentions are along the lines of natural disasters and other extreme events, such as droughts, wildfires, tropical storms and other extreme weather events, and earthquakes.

The management of resource usage also plays into these the parameters of security and the role the environment plays in it. Resources have up to now been managed in a relatively fast-and-loose manner. This leads to more and more practices, such as deforestation and overfishing, that leave an impact on both the environment and the societies in those areas. Unfortunately, as Shane Mulligan (2010) points out in *Reassessing the Crisis: Ecology and Liberal International Relations*, "The degradation of the global environment is a problem, but it is not seen as a threat to the system that has, so to speak, *governed* that problem…" (p. 138). Many say that this is because the government in many places will put corporate interests above human rights, and even sometimes cooperate in repressing opposition to exploitation (Hipwell, 2004, p. 364). This exploitation often leads to the situations of scarcity and environmental disaster that creates conditions of insecurity.

Climate Security

The effects of climate change only seem to exacerbate the threats analyzed when studying Environmental Security. Warming temperatures are creating longer dry seasons and rising sea levels (Collins et al., 2017). Correlations between human-driven climate change and the increased frequency and intensity of hurricanes and other extreme weather events are being researched to understand what kind of link there is between these factors (IPCC, 2013). Because of this, security analysts have given climate change its own security focus known as Climate Security.

Climate Security generally encompasses many of the same dimensions as Human Security does: Water Security, Food Security, Energy Security, Economic Security, and Health Security. (Phillis et al. 2018. p. 27). These factors are analyzed along with their interactions with different

environmental impacts, similarly to how one does when researching Environmental Security. The main difference when it comes to Climate Security is the added focus on the environmental and security impacts of human-driven climate change. Climate Security is about the interactions between these security and environmental aspects and what that means for people's livelihoods. This is all viewed under the lens of how climate change is worsening these interactions and analyzing how we need to respond to keep people's daily lives and rights secure.

Climate Security can have difficulties when it comes to safeguarding against security threats. As much information we have on the subject of climate change, much of climate science includes significant uncertainties. Since much of record climate date only reliably data back to a century at best, much has to be filled in using prediction models and equations. While these models are usually highly accurate, there is always room for error. Many of these mapping models are also used to predict future climate change impacts. However, it is impossible to determine whether impacts will be on course with predictions, not as bad, or worse until it happens, in part because the future of reducing carbon dioxide emissions is hard to predict. This usually means there is no choice but to plan for the worse-case scenario.

Why Florida?

Although looking at the Miami-Dade Sea Level Rise Task Force Report will help us understand perceived threats to SLR, some of the perceived threats are going to have a heightened sense of urgency. But why is there this sense of urgency with SLR driven by climate change? Florida is in a position where it is one of the earlier places to be having to deal with the consequences of and facing extreme risks associated with SLR (Hine et al., 2016).

Much of Florida's climate, geography, and composition lends to the extreme risks the state now faces because of SLR driven by climate change. Florida's Southern position near the Equator gives the state a sub-tropical climate. With its rainy season coinciding within the July-August season with diurnal variability, the state of Florida receives some of the highest volume of rainfall in the continental United States (Chassignet et al, 2017, p. 486). Being a sub-tropical climate, Florida generally maintains warm temperatures and higher humidity levels throughout most of the year. Also due to the state's position near the Equator, Florida is prone to experiencing seasonal extreme storms in the form of tropical storms, hurricanes, and occasionally tornadoes.

Florida is a peninsular ocean state. With low overall elevations, Florida is the flattest U.S. state. Much of the state is made up of an underlining layer of thick rock known as limestone. This limestone contains many interconnecting holes and cracks, allowing for vast storage of fresh groundwater which feed into rivers and springs throughout the state. Much of Florida's irrigation and drinking water comes from this groundwater storage. Despite this, Florida's water table is very shallow, as described by Tonya D. Clayton:

> The water table…fluctuates but is rather shallow in Florida. (This is why few Florida homes have basements.) The depth and salinity of the water table strongly influences where different plants and animals can live. The nature of the local water table also affects rainwater infiltration, storm-water runoff, and underground infrastructure such as septic fields (Hine et al., 2016, p. 79).

Florida already feels a number of pressures related to climate change and SLR. Florida was shown to have had a mean annual temperature increase of 1.6 degrees Fahrenheit; this is similar to the national and global trends (Collins et al., 2017, p. 206). Florida also has several large urban concentrations throughout the state. In these sections of the state, temperature increases are even greater. The frequency of precipitation has increased in Florida over the last 30 years, but there has also been an increase in the periods of drought in the state (Collins et al., 2017).

Climate change has led to an increased frequency in extreme storms like hurricanes and has also led to these storms becoming more intense. Due to its position near the equator, Florida will have to deal with these storms on an annual basis. This will lead to increases in the amount storm surge Florida experiences. As sea levels continue to rise, these storm surges will push further inland, leading to increased flooding. As more seawater goes into the already shallow water table, levels of flooding will begin to become a more daily occurrence. This leads to saltwater intrusion into the underground freshwater, reducing the amount of drinking water Floridians have access to (Hine et al., 2016).

Human activity is causing changes to natural climate patterns and leading to increasingly rising sea levels. Florida is in the unfortunate scenario of already suffering from SLR, with more extreme risks facing the state in the future. This puts increased pressure on the governing bodies of the state to be able to ensure the Human and Climate Security of the members of the communities. As Galen Treuer and his team have noticed in their research (2018), more South Floridians are beginning to become aware of the situation and want to take action to save themselves from these risks:

> Within our simulation, a large majority of South Florida homeowners, over 75%, support higher taxes to pay for climate adaptation, now and into the future. However, our data contains a cautionary warning for policy makers and planners. Less than 25% of South Floridians in our sample are currently concerned or worried about sea level rise. Worry steadily grows as they experience the impacts of moderate to high sea level rise, 45.7 cm (18 in) over the next 35 years, and that growing concern appears to increase homeowners' willingness to move out of the region (p. 115-116).

Citizens of South Florida are beginning to realize the threats SLR does have and will have on their lives and are wanting to take action against it. Some community leaders are eager to review studies of Climate Security and comparing these studies to the policies in place to determine how vulnerable Florida truly is and what can be done to ensure people's livelihoods and safety.

To recap, changes in sea level have always been a natural part of the Earth and even happen on a daily occurrence. Since the turn of the century, however, SLR has not been following natural trends and has been increasing at unnatural rates. Along with this, the climate has changed to where temperatures continue to, on average, get hotter, even though the planet would normally be going through a cooling cycle based on past trends. Both of these events have links to the effects of human activity since the Industrial Revolution. This SLR driven by climate change threatens to impact the security of many coastal communities and to ruin the safety and freedom of the people living there.

South Florida is one of the coastal communities that is already starting to see some of these impacts of SLR affecting their daily lives. Therefore, analyzing the content of the Miami-Dade County Sea Level Rise Task Force Report will give us insight into how the people and county government of Miami-Dade are defining SLR as a threat.

METHODS

This research into the perceived threats of SLR will involve doing a content analysis. Kimberly A. Neuendorf (2017) briefly defines content analysis as systematic, objective, quantitative and/or qualitative analysis of message characteristics involving human-coded and computer-aided text analysis (p. 1). Content analysis is useful for analyzing the language and message of many different forms of literature or communications. Using content and data analysis has even been used to explore environmental issues in Florida before. Data analysis was used examining The Northern Everglades and Estuaries Protection Program Bill to understand viewpoint shifts in policy change (Knox, 2016).

An important aspect of content analysis is developing a coding frame for reviewing the source data. These codes usually consist of sets of words, phrases, and other language concepts that can be used as the basis for searching through the text being analyzed. The goal of doing this is to create a coding frame so complete and unambiguous that individual differences among coders can be reduced or even eliminated (Neuendorf, 2017, p. 156). This produces a more reliable coding practice and creates more accurate results in the analysis. Usually, there will be a primary coder that sets up the code to be used for the analysis, and a secondary coder will attempt to use the same coding ruleset to test for comparison, allowing us to determine a measure of the reliability and consistency of the coding frame. I served as the primary coder for this research, where I coded the Sea Level Rise Task Force Report after the inter-coder reliability for the coding ruleset was tested. Regular sessions were held between the primary and secondary coders to discuss the coding frame ruleset and train the secondary coder for the inter-coder reliability tests.

Content analysis has several types of approaches to analyzing research material. These variations boil down to three standard types of content analysis: qualitative, quantitative, and summative or mixed content analysis. We will now take a look at these types of content analysis and which will be used for this research.

Qualitative Content Analysis

When discussing content analysis, many researchers think of the analysis technique within the terms of qualitative content analysis. Qualitative content analysis is often defined as "a set of techniques for the systematic analysis of texts of many kinds addressing not only manifest content but also the themes and core ideas found in texts as primary content" (Drisko & Maschi, 2015, p. 85). The key to qualitative content analysis is to address the content of the text being analyzed. This method involves summarizing key themes found in the content, examining the delivery of the content's message, and then creating a conceptualization of the text's content. This systematic approach thus allows for researchers to find and describe patterns within the text being analyzed and the meaning behind some of the content. This is done using custom coding frames as discussed previously and is usually an inductive, theory-building, method.

Quantitative Content Analysis

Where qualitative focuses on the underlining meaning of the content being analyzed, quantitative content analysis focuses on producing measures of different counts and amounts:

> A quantitative content analysis has as its goal a numerically based summary of a chosen message set. It is neither a gestalt impression nor a fully detailed description of a message (Neuendorf, 2017, p. 21).

Much of what quantitative content analysis involves is searching for patterns in the frequency at which certain words and phrases occur. Doing this allows researchers to quantify the number of times specific content is mentioned in the text analyzed and use these counts to determine subjects important to the author or authors of the text, assuming that the frequency is related to the selective attention of the speaker/writer.

Summative Content Analysis

The last approach to content analysis is referred to as summative or mixed content analysis. Mixed content analysis, as the name suggests, combines elements of both qualitative and quantitative content analysis. These kinds of analysis usually concentrate more on summarizing rather than reporting all the details concerning the message of the content. Using a mixed method allows for combined analysis that can be used on a wide number of fields of studies, such as communication, social science, healthcare, and many more. Mixed content methods have been used to analysis the effectiveness academic service learning programs (Hatziconstantis & Kolympari, 2016), as well as to analysis the effects of using social media in health care communication (Hamad et al., 2016). Mixed content analysis has many advantages from combining parts of the other two styles:

> [C]ritical and qualitative analyses that are empirical are typically extremely useful to the content analyst. They have the potential to provide a highly valid source of detailed or 'deep' information about a text….Such an analysis may bring us into the world of the text (Neuendorf, 2002, p. 14-15).

Researchers are able to use the coding of qualitative analysis to investigate the meaning behind the words used in the message of the text being analyzed, while able to use quantitative analysis

to determine the frequency of words and messages used in the text and determine an order of the importance in the messages delivered by the author or authors.

For this research on the Miami-Dade County Sea Level Rise Task Force Report, I will be conducting a mixed method content analysis. The type of qualitative content analysis being used in the mix method approach taken is inductive. As stated by Graneheim et al. (2017):

> An inductive approach, also called data-driven (Schreier, 2012) or text-driven (Krippendorff, 2013), is characterized by a search for patterns. During the analysis the researcher looks for similarities and differences in the data, which are described in categories and/or themes on various levels of abstraction and interpretation. The researcher moves from the data to a theoretical understanding – from the concrete and specific to the abstract and general (p. 30).

This portion of the analysis will also involve a coding frame consisting of two questions. The first question asks which aspect of Miami-Dade and Miami-Dade society is being addressed. Within these categories, the second question asks which aspect of these facets of Miami-Dade are threatened by the risks of SLR. This information will show us how the people of Miami-Dade view SLR as a threat.

Another important step in the analysis taken from qualitative methods is reducing the data. The final report contained a large series of appendixes that accompanied the main body of the report. In reducing the final report, I only included Appendix C, which consisted of the recommendations of the Climate Change Advisory Task Force, and Appendix D, which include the Regional Climate Action Plan. These two appendices where selected to be included in the

data analyzed because both the Regional Climate Action Plan and the Climate Change Advisory Task Force were fundamental in the forming of the Sea Level Rise Task Force and many of the recommendations from these played an important role in the decisions made by the Task Force.

This research, as using a mixed method content analysis, also uses aspects from quantitative content analysis. The frequency of passages in the categories and subsets produced by the coding frame will be analyzed to measure the count for each. Doing this will show which concerns were discussed by the Task Force more often and had the most time spent on. This will allow us to determine which SLR threats addressed by the Miami-Dade people are perceived to be more pressing than other SLR risks.

Analysis Coding Ruleset

As mentioned previously, an important aspect of conducting this research was setting up the ruleset used to code the qualitative portion of the content analysis. To do this, we first started with the two questions mentioned in the last section to create the categories and subsets. The categories correspond with the first question asking which aspects of Miami-Dade County and Miami-Dade society are being discussed. Using this question, four categories were created: Infrastructure, Economic, Environmental, and Security. Subsets for each category were then created using the second question which asks what facet- or the "why"- of these aspects of Miami-Dade society are threatened by SLR. This will help to determine 1) what is the threat perceived and 2) why it is deemed a threat.

The following paragraphs will go into the different subsets in each category and how passages were determined to be coded into each; a comprehensive overview of the ruleset can be seen in

Table 1 below. For all categories and subsets, passages were coded when referencing or discussing SLR, the impacts and mitigation of SLR, or the effects or aspects of climate change driving increased SLR.

Table 1: Coding Frame (Ruleset for Placement into Categories and Subsets)

Category	Subset	Rules
Security	Preventative Planning & Policy	Use of terms like "vulnerability" and "Adaptation Action Areas"; General discussion of policy and planning to help decrease vulnerability to sea level rise.
	Water Supply	Any discussion of water supply, water management, and water supply infrastructure and how they are threatened by sea level rise (ex. Saltwater intrusion).
	Storm Surge & Extreme Weather	Direct reference to "storm surge"; References to extreme weather, such as tidal surges, heavy rain, and tropical storms.
	Flooding	Statements that discuss "coastal flooding" and "inundation".
Infrastructure	Land Use Planning & Policy	If the statement uses the term "building code"; Any statement discussing changes to current or future land use planning and infrastructure policy.
	Transportation	Any statement that specifically uses the term "transportation" when discussing planning, policy, and infrastructure.
	Inundation	Any reference to flooding that directly mentioned at risk infrastructure or property damage.
Economic	Funding & Investments	Any statements that discuss "costs"; Any statement that uses the term "investment" regarding the impacts of sea level rise and planning and policy to combat them.
	Insurance & Financial Impact	Statements that discuss changes to insurance costs as related to sea level rise; When the statement states that "taxable value" is at risk; Statements that discuss a significant loss of money due to sea level rise impacts.
	Agriculture	Use of the term "agriculture" regarding sea level rise.
Environmental	Natural Systems	Statements that use the term "natural systems"; Statements that reference natural environments and the species of plants or animals that are a part of them.
	Everglades	Statements that directly discuss the Florida Everglades and the Everglades Restoration.

The category of Infrastructure focuses on passages discussing SLR in regards to the urban and artificial landscape of Miami-Dade County. Infrastructure is broken down into three subsets.

When passages discuss SLR regarding the impacts to current building codes and possible changes to future land use development and policy for more resilient infrastructure, these passages are coded into the subset Land Use Planning and Policy.

Referencing the threats and impacts of SLR to public transportation systems and roadways means the passage is coded into the subset Transportation. This subset also includes discussions of transportation planning and policy. The final subset, Inundation, codes passages that analyze current and possible damage to buildings and similar infrastructure caused by increased flooding driven by SLR.

The Economic category refers to the effects of SLR on Miami-Dade's economy. The Agriculture subset codes for passages that discuss impacts of SLR on the agriculture industry in South Florida and mitigation for these impacts. It might seem strange that agriculture would be in the Economic category, but the agriculture industry is considered one of three consistent drivers of the Florida economy as the 12-month growing season provides other states with tropical crops during the winter months (Ruvin et al., 2014, p. 93). When passages discuss the impacts of SLR on the insurance industry or potential risks to different taxable properties and other economic drivers, the passages are coded into the subset Insurance and Financial Impacts. Passages referring to the cost or funding of SLR mitigation, as well as the effects on stakeholders and their investments are coded in the Funding and Investment subset.

The Environmental category covers discussion of SLR affecting the natural environment of Miami-Dade and is divided into two subsets. The Everglades subset codes passages that analyze

the impacts of SLR on the Florida Everglades and restoration to help mitigate against these impacts. The Everglades gets its own subset as the Florida Everglades is a very unique South Florida environment and has many important services the system supplies to the Miami-Dade area. The second subset, Natural Systems, codes for passages discussing all other natural environments and SLR impacts and mitigation pertaining to different aspects of these systems.

The final category, Security, is the largest of the categories with four subsets. This category focuses on different security risks SLR poses to the people of Miami-Dade County and their livelihoods. The subset Preventative Planning and Policy focuses on coding passages that look into policy changes to improve mitigation to SLR and improve people's safety to its impacts. These passages usually contain the terms "vulnerability" and "Adaptation Action Areas". Passages analyzing the impacts to SLR to Miami-Dade's water supply and discussing policies to improve water management and infrastructure against SLR are coded into the Water Supply subset. These impacts usually include threats such as saltwater intrusion.

The subset Flooding codes for discussion of people and communities at risk to increased coastal flooding from SLR. This subset differs from the Inundation subset as Flooding focuses on the effects and impacts on people's safety instead of damage to buildings and other infrastructure. The final subset, Storm Surge and Extreme Weather, codes passages that focus on the risks of storm surge and extreme weather events that can be worsened by SLR and climate change.

Inter-Coder Reliability

An important part of any content analysis's ruleset is to confirm the reliability of the ruleset for coding the literature. If one were to try to replicate the analysis or conduct similar research, we

would want the ruleset to produce the as close to the same passage coding as possible to the original analysis. For this, we need to test the inter-coder reliability to determine the accuracy of the ruleset.

The inter-coder reliability is determined by tests that compare decisions of at least two coders on selected passages. For this, ten passages from the literature were assigned to categories by the two coders independently of one another. Both the secondary coder and I assigned a number 1, 2, 3, or 4 (Infrastructure, Economic, Environmental, and Security respectively) to each passage. The first test determines a simple interrater reliability percentage for the ruleset, which the results of which can be seen in Table 1 below. Passages where the two coders assigned the same number to the passage were given a value of 1; differences between the two coders meant the passage has assigned a value of 0. These values were added together to get the total number of matches, which was then divided by the total number of passages which was 10. This calculation gives an inter-coder reliability of 90%.

Table 2: Interrater Reliability (Code Results and Percent Match)

Researcher	Secondary Coder	Match(1)/Different(0)
4	1	0
3	3	1
1	1	1
4	4	1
1	1	1
4	4	1
4	4	1
4	4	1
3	3	1
3	3	1
Match		9
Total		10
IRR		90%

The result of 90% is a great start to testing the accuracy of the coding ruleset, but the test is simple and does not account for random coder agreement. This is why we also tested for Cohen's Kappa. The Cohen's test is determined using Equation 1 which goes as follows:

$$k = \frac{\Pr(a) - \Pr(e)}{1 - \Pr(e)} \quad (1)$$

In Equation 1, k refers to Cohen's Kappa, Pr(a) stands for the rate of agreement between the coders, and Pr(e) is the probability of random agreement between the coders. The values used for finding Kappa can be seen in Table 2 below.

Using the coding responses from Table one, the number of each combination of 1, 2, 3, and 4 between both coders is recorded. The total of each of these values is then divide by 10 to get the percentage each combination makes of the total results. Pr(a) is going to be the same as the interrater reliability percentage we calculated in Table 1, so we know that Pr(a) has a value of 90% or 0.9. The Pr(e), probability of accidental agreement, is then calculated by multiplying the percentage obtained for the first row of combinations by the percentage for the first column of combinations; doing the same for the second, third, and fourth rows and columns; and adding the resulting values together. The resulting value for Pr(e) comes out to 0.35 or 35%. We can then plug these values into the formula and determine that the Kappa is 0.85 or an intercoder reliability of 85%. This value is less than the first test, but still high enough to ensure the ruleset will have a high level of accuracy among multiple coders and/or analyses, and provides confidence that the ruleset is reliable, allowing for the primary coder to complete the rest of the coding (Landis & Koch, 1977).

Table 3: Inter-Coder Reliability (Calculating Cohen's Kappa)

		Researcher					
		1	2	3	4	Total	Percent
Secondary Coder	1	2	0	0	1	3	30%
	2	0	0	0	0	0	0%
	3	0	0	3	0	3	30%
	4	0	0	0	4	4	40%
	Total	2	0	3	5	10	
	Percent	20%	0%	30%	50%		100%

Pr(a)	0.9	90%
Pr(e)	0.35	35%
k	0.85	85%

RESULTS

Using the ruleset discussed in the previous chapter, the four categories and their subsets produced a total of 216 coded passages from the Miami-Dade Sea Level Rise Task Force Report. The qualitative and quantitative nature of these results will now be reviewed for each of the categories, as well as each of the subsets in the four categories. This will be done by examining each of the categories in order of highest frequency of coded passages to the category with the lowest frequency (see Figure 1); the subsets of each category will also be discussed in the same quantitative order. The qualitative nature of the codes within each category and subset will be discussed as they are mentioned in this order of frequency.

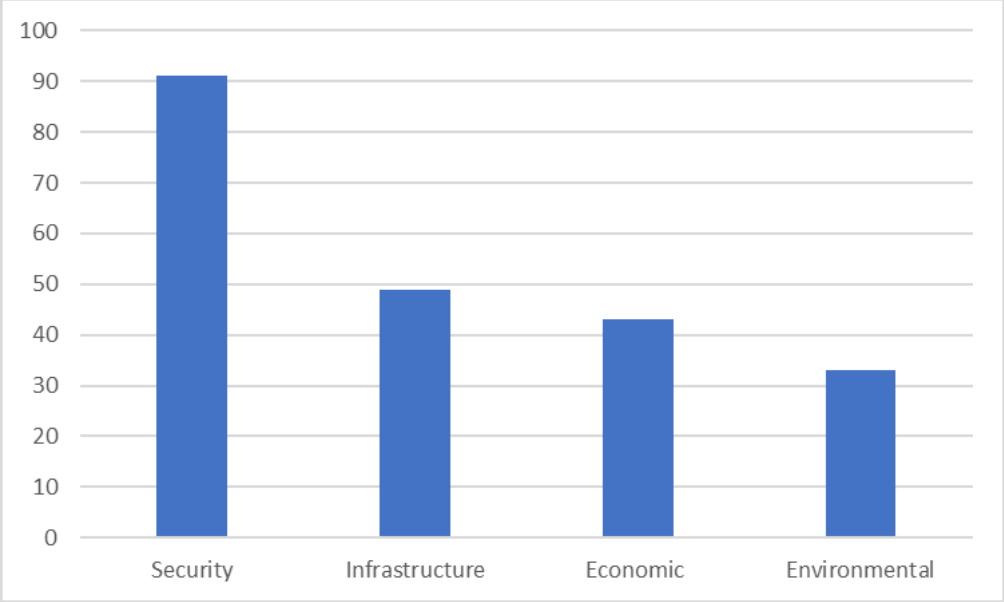

Figure 1: Coding Frame Categories (Frequency Count of Coded Segments)

Security

Of the 216 coded passages, the category Security accounts for 91 of the passages coded. The distribution of these passages between the subsets can be seen in Figure 2 at the end of this section. A total of 40 passages make up the Preventative Planning and Policy subset. Many of these passages from the report discuss setting up new policies to improve the resilience of the Miami-Dade community, especially Adaption Action Areas:

> Identify within Adaptation Action Areas and similarly impacted areas populations and communities most vulnerable or of special concern for the purpose of ensuring the proper consideration of individual needs and resources as part of local and regional planning activities (Ruvin et al, 2014, p. 74-75).

Adaption Action Areas are areas within the community that are identified as especially vulnerable to coastal flooding and storm surge events. The passages in this subset also discuss planning ahead for future SLR. This includes recommending update methods of mapping and predictive modeling, backing and acknowledging scientific research on the SLR, and "conduct[ing] new or utilize existing vulnerability analysis and other technical tools" (Ruvin et al, 2014, p. 74).

The Water Supply subset contains 22 coded passages. The main focus of discussion in these areas of the report are the improvement of South Florida's water management systems:

> Climate change presents serious challenges for water managers with impacts on the quality and abundance of water supplies, water and wastewater infrastructure, and drainage and flood control operations. An effective response will require the coordinated efforts of governmental agencies and service providers and a holistic approach that treats water supply, disposal and management as integrated systems (Ruvin et al, 2014, p. 84).

Many people are concerned with the contamination of fresh groundwater due to saltwater intrusion. Many of the recommendations made involve improving facilities that collect and treat both wastewater and stormwater to be able to handle impacts from future climate change and SLR.

The Storm Surge and Extreme Weather subset, with 16 coded passages also contains mentions of stormwater infrastructure in regards to being able to handle larger storm surges as sea levels rise and dealing with increased heavy rain events caused by climate change. The report also recommends increasing evacuations and number of evacuation points for storm surge as SLR and tropical storms worse its impact: "Develop agency capabilities to provide rapid deployment of resources in immediate response to intense precipitation and storm events through use of Next RAD technology" (Ruvin et al, 2014, p. 88). The final subset, Flooding, codes for 13 passages where the authors of the report look to improve drainage and flooding control issues. This includes refining inundation maps so that the community is better prepared in the future, as well as updating evacuation policies for more at risk areas:

> Utilize existing and refined inundation maps and stormwater management models to identify areas and infrastructure at increased risk of flooding and tidal inundation with increases in sea level, to be used as a basis for identifying and prioritizing adaptation needs and strategies (Ruvin et al, 2014, p. 85).

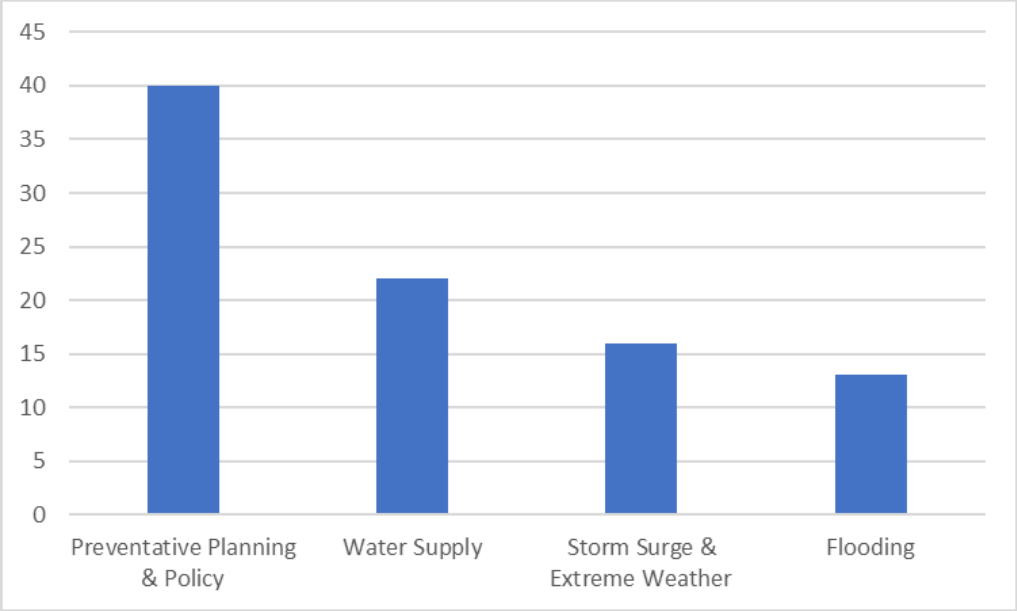

Figure 2: Security Subsets (Frequency of Coded Segments)

Infrastructure

The Infrastructure category is the next largest category quantitatively, containing 49 of the 216 coded passages (see Figure 3). Of these, 27 are contained in the subset Land Use Planning and Policy. The content of these passages contains a number of recommendations of making changes to building codes as well as land use policy that will allow Miami-Dade's infrastructure to remain resilient against SLR:

> In order to secure a future that is resilient to threats of sea level rise, much detailed and truly comprehensive expert analysis must be undertaken in order to plan and design a robust capital plan: not just to update, but in a sense, to reinvent our urban infrastructure in a timely, sequenced manner to meet our future as it unfolds (Ruvin et al, 2014, p. 4).

The other subset that made up much of the rest of Infrastructure in the coding frame was Transportation. This subset contains 19 coded segments which mainly discussed recommendations for more environmentally-friendlier ways to design roadways to handle

increased stormwater and for materials that improved heat tolerance: “Modify or develop new design standards for transportation infrastructure located in identified vulnerable areas to include environmentally supportive road materials, bridge design, elevation, and stormwater management” (Ruvin et al, 2014, p. 75).

With only three coded segments, the subset Inundation is the smallest subset within the entire coding frame. This makes sense, as much of the dialogue and discussion surrounding flooding was in the context of risk to people’s well-being rather than damage to infrastructure. Even on the subject of such damage, much of that discussion was geared towards the insurance industry and other economic impacts. There was still some discussion on projection infrastructure from flooding: “In terms of the critical infrastructure reviewed, projected inundation is often confined to marginal areas of the properties or impacting existing drainage infrastructure on site. This is generally true for the region’s ports, airports, schools, landfills and hospitals” (Ruvin et al, 2014, p. 67).

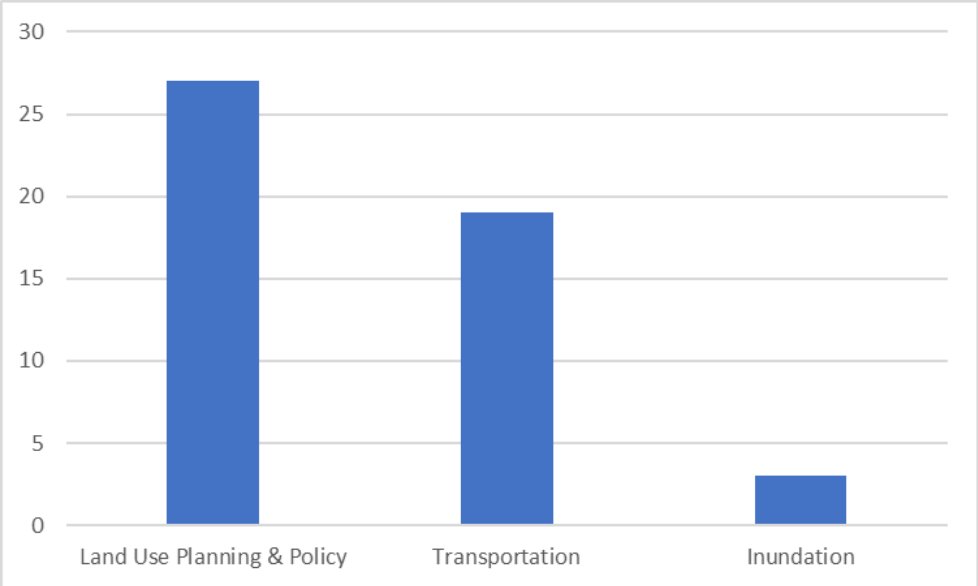

Figure 3: Infrastructure Subsets (Frequency of Coded Segments)

Economic

With 43 of the 216 coded passages, the Economic category was only a few smaller than Infrastructure. The distribution of these coded segments among the subsets can be seen in Figure 4 at the end of this section. The largest part of this category, 21 coded segments, was the subset Funding and Investments. This naturally would be the case, as any discussion of mitigation and community improvement must also include discussing where the funding to do what you plan to accomplish will come from: "The law also provides for the development of adaptation policies and will maximize funding opportunities for infrastructure needs associated with Adaptation Action Areas" (Ruvin et al, 2014, p. 72). The recommendations on that included federal and state funding, as well as investments from businesses and other such stakeholders in the area. After Funding and Investments, the Insurance and Financial Impact subset was the next largest in the category (13 coded segments). While there was discussion about minimizing damage to what they considered "taxable properties" (Ruvin et al, 2014), much of the focus was on discussion ways to keep insurance from rapidly increasing in cost.

The final nine coded passages for the Economic category belong to the Agriculture subset. As discussed in the last chapter, agriculture is one of the three most consistent sources of economic growth in the entire state of Florida. As such, the Task Force discussed ways to preserve this economic viability and promote policies that to help the industry adapt to flooding, saltwater intrusion, and other effects of SLR and climate change:

> The agriculture community is committed to sustainability, and the economic viability of regional agriculture will allow farmers to remain on the land to grow food, fuel and fiber for area residents as well as the nation. Consideration of agricultural impacts is vital to any regional action plan which should include action plans to address flooding, salt-water

intrusion, exotic pests and disease introduction and crop changes due to climate change (Ruvin et al, 2014, p. 93).

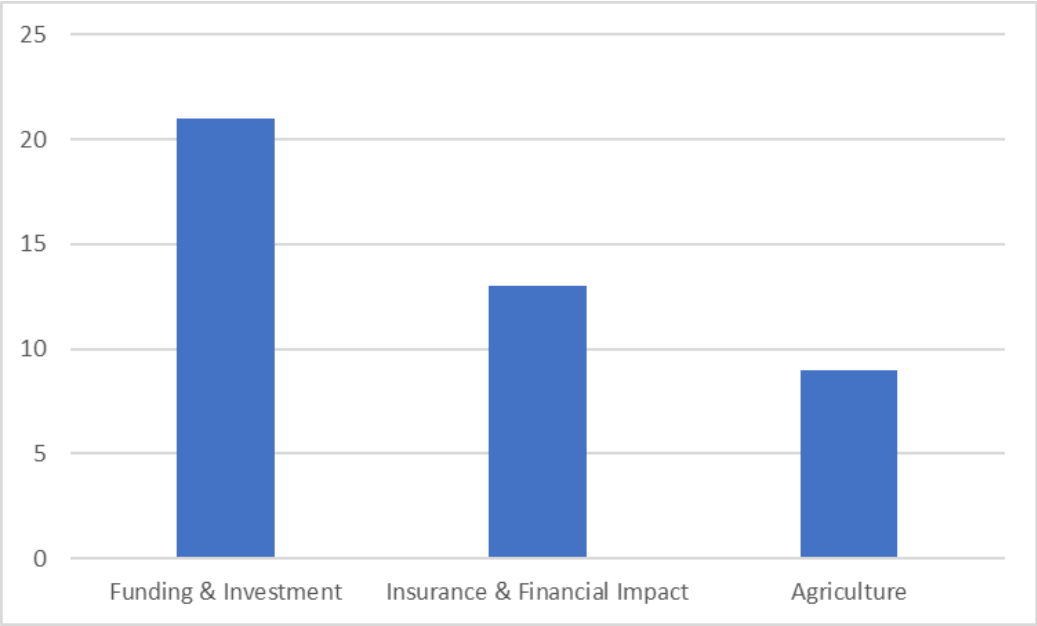

Figure 4: Economic Subsets (Frequency of Coded Segments)

Environmental

The final and smallest category is the Environmental category. Only 33 of the total 216 coded segments were placed into this category (see Figure 5). The Natural Systems subset contains 23 of the coded passages. Although not discussed as much throughout the entire report, the Task Force recognized the importance of maintaining the natural environment in combating SLR:

> Designate or otherwise recognize "Restoration Areas" to identify undeveloped areas that are vulnerable to climate change impacts for the purpose of environmental restoration, dune restoration, agriculture, conservation of natural resources or recreational open space, or as stormwater retention areas. Local governments and appropriate regional planning authorities should prioritize land acquisition in these

areas. These areas could also be established or acquired through mitigation or transfer-of-development rights initiatives (Ruvin et al, 2014, p. 75).

The other ten coded segments were placed into the Everglades category. It makes sense for this subset to be one of the smaller ones, as it was a rather specific subset. While never discussed at much length, the notion of restoring the Florida Everglades so as to protect it from and mitigate against SLR continued to come up at different parts of the Task Force Report:

> Additionally, SLR from climate change is threatening the Florida Everglades, the backbone of our natural resource system, highlighting the urgent need for restoration of the Everglades with improved delivery and distribution of water flow to provide both natural resources and water supply benefits (Ruvin et al, 2014, p. 84).

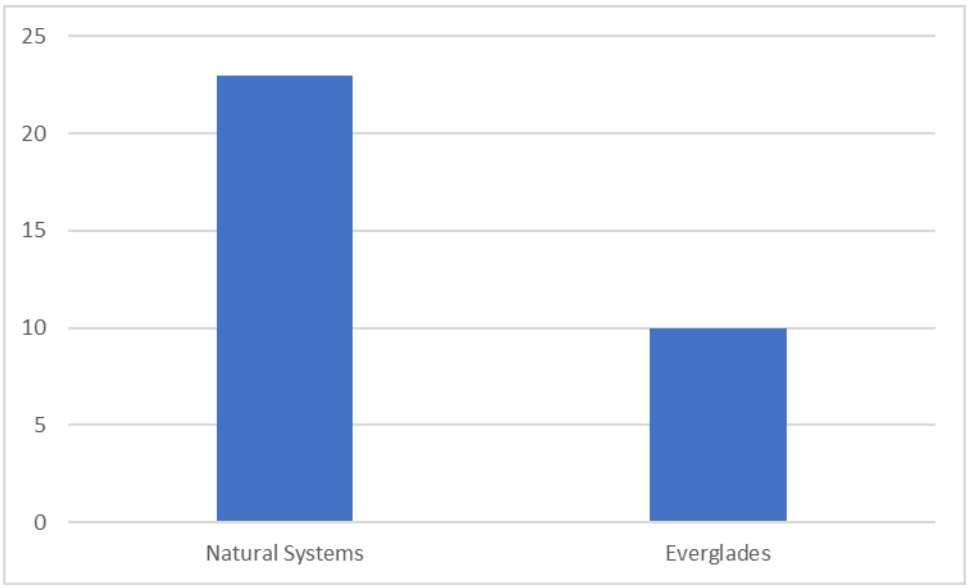

Figure 5: Environmental Subsets (Frequency of Coded Segments)

CONCLUSION

Now that we have reviewed the results of applying the coding ruleset to the Miami-Dade Sea Level Rise Task Force Report, let us go into more detail on the qualitative and quantitative nature of the results of this analysis. It is important to remember that the Miami-Dade Sea Level Rise Task Force Report is part of a groundwork laid and still being laid by the local county governments in the South Florida area. Literature of this nature is not usually backed by such governmental and other higher-up entities. This gives the discussions and recommendations of the report a higher priority than other literature on the subject. Similar literature is often much more personal or has an extreme scientific or academic bias. The county government aspect of the report means that discussion and recommendations will care more weight and more will be done within the community based on this.

As discussed, Security had the most coded segments, with most the passages in this category being coded into the Preventative Planning and Policy. This subset ended up being the largest out of all the subsets in every category. This makes sense given the nature of the literature analyzed. The Miami-Dade Sea Level Rise Task Force Report was created as a way to set the framework for moving forward and creating a South Florida community that is resilient to the increasing threats of SLR. As such, much of the dialog is inherently preventative in nature and is about preparing for the future.

Even when consulting the most recent SLR models and maps, it can still be difficult to truly know what is going to happen with SLR in the future. As Miami-Dade is already starting to feel some serious impacts from SLR, the county government finds it most important to have policies

in place that allow them to be prepared for most worse-case scenarios so as to protect the people and their community.

While there were a number of security concerns regarding people's vulnerability to flooding, storm surge and extreme weather events, there was almost just as much concern for the Water Security of Miami-Dade County. The nature of Florida's geography leaves accessible drinking water highly vulnerable to both human activity and environmental changes. This is especially true for the Miami-Dade region, where people are already being impacted by effects of SLR. Events such as coastal flooding and storm surges can quickly cause saltwater intrusion to contaminate groundwater and other parts of the Florida aquifer that are used for drinking water. Because of this, the Task Force put emphasis on recommending improvements to water management infrastructure and policies, as well as recommending policies that will increase security against the impacts of flooding and storm surge events.

The next largest subset overall, after Preventative Planning and Policy, was the Land Use Planning and Policy subset in the Infrastructure category. As mentioned earlier, the report is generally preventative in nature. As such, many of the recommendations are directed towards planning for Miami-Dade's future survival. This means many of the comments directed towards infrastructure discussed improving buildings and other structures in vulnerable communities like Adaptation Action Areas. Many recommendations also include reviewing current land use policies alongside the recent science and modeling to see where fixes can be made to improve the livelihood and security of as many people as possible. The same goes for many of the passages coded in the Transportation subset. Much of the discussion around transportation

involved improvements that can be made to improve evacuation accessibility as a way to improve people's sense of security.

The Economic category of the coding frame, although the second smallest quantitatively, is one of the more qualitatively important of the analysis. Although the authors of the report all either volunteered or were invited to be members of the Sea Level Rise Task Force, most of them come from positions within Miami-Dade County's government or from jobs where they have experience working alongside Miami-Dade County (Clerk of Courts, Everglades Law Center, Bank CEO, etc.). As members of the community, they understand the importance of providing security and identifying the vulnerability within the community. But as they know from their positions within the community, they need to be able to fund improvements if they want the resilience: "With trillions of dollars of built environment and invaluable natural resources at stake in the region, the economic imperative to take action sooner rather than later is clear (Ruvin et al., 2014, p. 11).

This is why so much concern is voiced in discussions of funding and financial lose in regards to SLR, even though other topics appear more frequently. Preventative Planning and Policy and Land Use Planning and Policy still had higher priority within the recommendations, but this partially plays into the qualitative importance of the Economic category as well:

> The upper estimate of current taxable property values in Monroe, Broward, and Palm Beach Counties vulnerable in the one-foot scenario is $4 billion with values rising to more than $31 billion at the three-foot scenario. The greater values reflected in the

> financial impacts are coastal residential properties with ocean access and high taxable value (Ruvin et al., 2014, p. 67).

If policies enhance the resilience of the people and infrastructure in the community, they will be able to withstand more serious SLR threats and less funding to repair damages will be required.

This is also why the insurance industry was a big issue for the authors of the report. Even County governments need insurance and aid from state, federal, and private entities during times of greet crisis. But SLR is making insurance more expensive:

> Perhaps the most impactful presentation made to the Sea Level Rise Task Force came from representatives of the Re-Insurance Industry. Mark Way, Sustainability Director of Swiss Re, stated that the insured losses for the global insurance industry totaled $6.4 billion per year in the 1980's for weather related impacts. This has risen to $40 billion during the first decade of this century…. According to the cost/benefit curve developed in this study for the Southeast Florida region, it is estimated that approximately $30 billion of the total expected loss in 2050 could be avoided if a comprehensive plan for adaptation were implemented (Ruvin et al. 2014. p. 10).

The longer Florida takes to act, the harder it will become to recover when disaster truly strikes.

There was a strong connection between the authors of the report and the want to preserve and restore South Florida's natural environments. There were a small but fair number of segments coded into the Environmental category recommending restoration areas as a means to combat SLR. This is also most likely due to many Floridians identifying with the many unique ecosystems and landscapes that make up the state. This feeling or similar levels of it might not

necessarily be mutual among other coastal communities globally, so it is difficult to associate this as the case overall. Also, while many South Floridians identify with their natural environment, much of this is in a recreational sense, such as fishing and snorkeling. As such, the environment often ends up taking a backseat to issues that involve people's wellbeing and security.

From here, one is able to gain a glimpse into how SLR is considered a threat by the Miami-Dade County. The laymen of the communities fear the threat that SLR will disrupt their safety, destroy their property, and halt their access to water and other vital needs. Those within positions of authority within the communities are threatened by the inability to obtain the funds to provide their community with the resilience to stand against SLR, and by the possible lack of funds to recover when worse and worse disasters strike. The funding will be an important issue moving forward with any SLR mitigation, but what matters most to the Miami-Dade government is preserving the community physically and economically: "Make no mistake, it will be costly, but its costs are dwarfed by the potential human, physical and economic values at stake" (Ruvin et al. 2014. p. 2).

For potential future research, the methods and results of this analysis can be applied to other Florida and/or coastal areas. Similar studies have been done in other coastal areas. Qualitative coding methods have been used to assess the effectiveness of implementing Louisiana's Coastal Master Plan on the local level (Knox, 2017). Other areas within Florida, however, have not put as much time into SLR mitigation and research as Miami-Dade County. South Florida is currently one of the most at-risk places to the effects of SLR because of its geography. Since the state of Florida is an ocean peninsula, all of Florida is going to have major issues with SLR in

future years (Hine et al., 2016). South Florida, who is currently dealing with some of these impacts, is one of the few areas within the state truly planning to mitigate SLR. This research could be used to interpret other cities and counties in Florida view SLR as a threat compared to how Miami-Dade views SLR as a threat. Other areas within Florida will have some similar threat priorities but will also have new priorities unique to the area, such as preserving military bases. This will also give the opportunity to watch changes in perspectives as the threats of SLR begins to become urgent in these areas.

At the end of the day the members of the Sea Level Rise Task Force and of the Miami-Dade government have to return to their daily lives within the community they are trying to protect, wanting to preserve their livelihoods as well as the security of others. This information gives us insight, but insight will not halt SLR driven by climate change. We see what is desired and needed to be done about SLR by Miami-Dade County's people and its government and leaves us with one option: to act.

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