

Disaster Preparedness in Orange County, CA.



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RESEARCH BRIEF

ABOUT THIS STUDY

This report relies on two sources of data, collected by the Babbie Social Science Research Center in May, 2019. First, we held a focus group consisting of 13 Orange County residents in order to gain an in depth understanding of how they have prepared for disasters and the extent to which they rely on smart phone texts to receive emergency alerts. Second, we conducted a survey of 1,035 Orange County residents for a broader, representative look at preparedness behaviors. A full breakdown of the survey demographics is available in the Appendix to this report. The authors wish to thank all of our focus group participants and survey respondents for taking the time to help us make Orange County a safer home for everyone. We would also like to thank Westbound Communications for their valuable feedback on this project.

Wilkinson College of Arts, Humanities and Social Sciences is the most diverse college at Chapman University. The distinguished faculty are composed of active scholars who are renowned nationally and internationally for their academic excellence and contribution to knowledge. But just as important, they are also enthusiastic teachers who take seriously their responsibility of ensuring that our students, whether majors, minors, or graduate students, are prepared for the intellectual, ethical, and professional challenges that a rapidly changing world is going to present. Our college is focused on providing a well-rounded educational foundation that leads to a variety of career paths. Wilkinson College invites you to join our vibrant intellectual community, where collaborative student-faculty research, internships, community service, travel courses and study abroad, student organizations, and several lecture series extend learning beyond the classroom.

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The **Earl Babbie Research Center** is dedicated to empowering students and faculty to apply a wide variety of qualitative and quantitative social research methods to conduct studies that address critical social, behavioral, economic and environmental problems. The Center's mission is to provide research support and instruction to students, faculty and the broader community, and to produce research that addresses global concerns including human rights, social justice, peaceful solutions to social conflicts and environmental sustainability. The Babbie Center supports cutting edge interdisciplinary research and encourages faculty student collaboration. For more information about the Earl Babbie Research Center please visit: www.chapman.edu/wilkinson/research-centers/babbie-center/index.aspx

The **Henley Social Science Research Lab** supports undergraduate and faculty research through a variety of programs. Research assistants staff the lab five days a week and can help faculty with the collection and analysis of data. They are also available to support students by providing tutoring in SPSS, GIS and quantitative methods for courses that include this content. The lab also encourages and facilitates interdisciplinary research with the creation of faculty work groups and serves as a resource for the community and can provide consulting services. The Henley lab is pleased to provide consulting for local government and community groups.



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Syd Kotar '19 graduated from Chapman University with degrees in Chemistry and Political Science. Syd worked as a Toxicology Laboratory Assistant at Southern California Coastal Water Research Project (SCCWRP) and as a Henley Lab Fellow for the Ludie and David C. Henley Social Science Research Laboratory at Chapman University. At SCCWRP Syd assisted in the setup, execution, and break down of experiments as well as everyday laboratory maintenance including water quality analysis of culture systems. At the Henley Social Science Research Laboratory, Syd conducted research on Brexit preppers, the American Fear Survey, and disaster preparedness. Syd is pursuing a Masters in Global and International Studies with an emphasis in Science, Technology, and Innovation at the University of Salamanca.



Special thanks to Dr. Ann Gordon, faculty mentor, and Director of both the Babbie Center and the Ludie and David C. Henley Social Science Research Laboratory.

TABLE OF CONTENTS

Introduction	6
Public Fear of Natural and Manmade Disasters	9
Emergency Preparedness of Orange County Residents	9
Thinking About Emergency Notifications	12
Public Familiarity with AlertOC	13
Appendix: OC Survey Results	21
Endnotes	39

INTRODUCTION

Orange County is home to over three million residents in 34 cities. The county is vulnerable to a variety of hazards, including earthquakes, floods and wildfires. In this research brief, we examine the natural and man-made disasters Orange County residents fear, and their level of disaster preparedness. We explore the nature of disaster preparedness among residents and pinpoint areas of Orange County where preparedness is particularly low, through geospatial analysis. Next, we turn to the public’s level of awareness of disaster alert notifications with a focus in understanding why so few Orange County residents have not signed up for emergency alerts. We evaluate the public’s familiarity with Orange County’s alert notification system, AlertOC by assessing responses from a focus group to understand how aware and receptive the public is to the county-wide alert system.

Background Context to OC Disasters

- 2018
 - Santiago Fire 155 acres
 - Aliso Fire- 175 acres
 - Holy Fire..... 23,136 acres
- 2017
 - Canyon (September)2,662 acres
 - Canyon 2 (October) 9,217 acres
- 2016
 - Holy..... 150 acres
 - Laguna..... 47 acres
- Within the past three years, Orange County had seven wildfires, spanning 35,542 acres



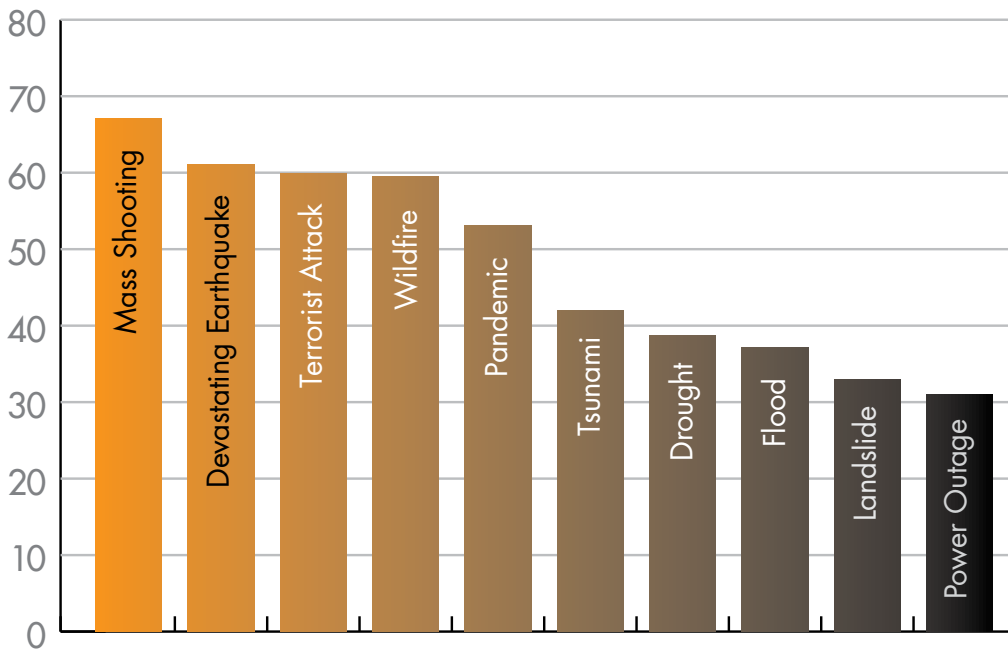
The Holy Fire, Lake Elsinore, CA, August 18, 2018. More than 20,000 people evacuated and the fire spread over 20,000 acres. • Credit: Kevin Warn/ZUMA Wire/Alamy Live News

To understand Orange County residents' reactions to disasters, it is important to recognize which disasters they fear. By knowing the greatest fears, we can decrease the perceived fear of an event, which is higher when the person is typically afraid of it, and create education around the topic. This will lead the person to be more likely to take action to protect themselves¹. In this way, it is prudent for the public to receive information, especially concerning their most feared disasters so that they can create a plan or a targeted disaster kit. Orange County residents most fear a mass shooting (67.1%), devastating earthquake (61.1%), terrorist attack (59.7%), and a devastating wildfire (59.5%). Some 61% of respondents are afraid of a devastating earthquake, so it would prove prudent to communicate to the public the importance of preparing a supply kit, including the need for water and plan in the case of an earthquake.

What do Orange County residents fear most?

	Afraid %
Devastating earthquake	61.1%
Devastating flood	37.2%
Devastating drought	38.7%
Devastating wildfire	59.5%
Devastating landslide	33.0%
Devastating tsunami	42.0%
Terrorist attack	59.7%
Mass shooting	67.1%
Power outage	31.0%
Massive disease outbreak/pandemic	53.1%

Fear of Natural and Manmade Disasters in Orange County



Are residents prepared for a disaster?

Only 63.3% of Orange County residents surveyed felt confident that they know how to prepare for disasters. But are they truly prepared for the next disaster?

In our survey, we asked respondents whether they had taken recommended preparedness measures such as assembling an emergency kit and forming a plan. A vast majority (96.0%) agreed that by keeping an emergency supply kit, they are improving their chances of surviving a natural or manmade disaster. However, a minority (44.9%) of respondents have actually put together a kit. Being prepared for a natural disaster by having a kit is the most effective way to minimize the damage suffered by the affected population².

Moreover, only 45.4% of respondents have put together a plan for what to do in a natural disaster or emergency, and even less (30.9%) have put together a plan for what to do with their pet(s). Due to this lack of planning within families, people have risked their lives to save those of their pet, and a few have died trying. There is significant potential for using animal-attachment to motivate disaster preparedness, early evacuation and survival. We recommend building on animal attachment to motivate actions that improve survival and increase disaster resilience³.

When compared to a national average of respondents, more Orange County residents (44.9%) have put together a disaster or emergency supply kit than



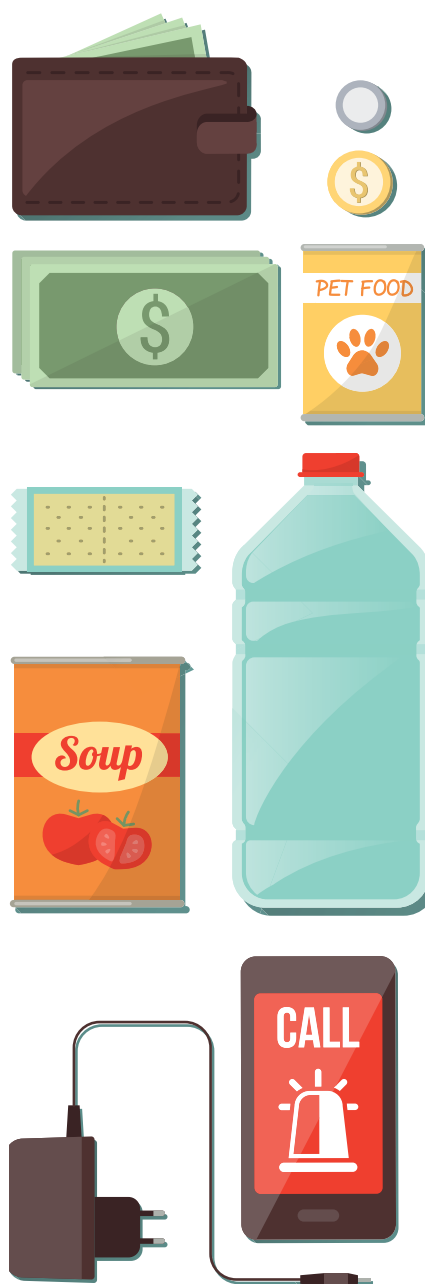
Have you or anyone in your household...	Yes % of OC residents	Yes % of Americans*
put together a disaster or emergency supply kit, containing supplies such as food, water and medical supplies?	44.9%	29.8%
put together a plan for what you would do in a natural disaster or emergency such as a fire in your home?	45.4%	35.9%
put together a plan for what you would do with your pet(s) in a natural disaster or emergency such as a fire in your home?	30.9%	23.3%

Disaster Preparedness in Orange County (2019) and Chapman Survey of American Fears Wave 5 (2018)

the average American (29.8%). Orange County residents (45.4%) fare slightly higher than most Americans (35.9%) in putting together a plan for what they would do in a natural disaster or emergency.

Individuals are more likely to participate in recommended emergency preparedness steps of putting together a kit and a plan when exposed to emergency-related content in the media⁴.

Is the public lacking more awareness of disasters affecting them and their community?



Being prepared for a natural disaster by having a kit and a plan is the most effective way to minimize the damage suffered by the affected population.

Motivating Disaster Preparedness in Orange County's Disabled Population

We pay special attention to disabled Orange County residents, because of their vulnerability to disaster. Families that include adults and children with chronic and special health care needs exhibit low levels of disaster or emergency preparedness⁵. In this way, people in the community with disabilities are more vulnerable, but are just as unprepared as the rest of the population.

I have a disability/health condition that might affect my ability to prepare.

Someone in my household has a disability/health condition that might affect their ability to prepare.

	% of respondents
Yes	25.1%
No	74.9%

	% of respondents
Yes	31.7%
No	68.3%

	Have you or anyone in your household put together a disaster or emergency supply kit, containing supplies such as food, water and medical supplies? Yes	Have you or anyone in your household put together a plan for what you would do in a natural disaster or emergency such as a fire in your home? Yes	Have you or anyone in your household put together a plan for what you would do with your pet(s) in a natural disaster or emergency such as a fire in your home? Yes	Are you signed up for any disaster alert programs? Yes
I have a disability/health condition that might affect my ability to prepare	50.8%	50.8%	38.8%	25.2%
Someone in my household has a disability/health condition	52.1%	51.8%	38.7%	31.7%

Thinking About Emergency Notifications Alerting Residents of Nearby Disasters


In our survey, we asked respondents their level of agreement regarding signing up for a disaster alert program. The vast majority (92.7%) agreed that by signing up for a disaster alert program would improve their chance at surviving a natural or manmade disaster. We found a major disconnect between the public's belief in the significance of natural disasters and their subscription to disaster alerts. Only 28.0% respondents are signed up for any disaster alert programs.

Are you signed up for any disaster alert programs?

	% respondents
Yes	28.0%
No	57.7%

Next, we explored when the public thinking about emergency alerts (if at all). Some 63.9% of respondents agreed that the only time they think about emergency notification is during or immediately after a natural or manmade disaster.

The only time I think about emergency notification is during or immediately after a natural or manmade disaster.



Alerts Save Lives

One emergency app, Citizen, allows users to be alerted to nearby incidents in real time. As such, one resident received a notification from Citizen that informed him of an apartment fire along with the address. The address was this resident's, and because of the app, he was able to evacuate safely. He was quoted saying, "The notification I saw instantly brought me out of the hazy fog of sleep... At this point, I knew I had to get both my sleeping girlfriend and friend on the couch out of my apartment and evacuate the building ASAP⁶."

	% respondents
Agree	63.9%
Disagree	36.1%

Is Orange County aware of AlertOC?

In order to communicate and inform the public of local disasters, most counties in California have alert notification systems for which its residents must register. Los Angeles has NotifyLa, San Diego has AlertSanDiego, and Orange County has AlertOC. AlertOC is Orange County’s mass notification system designed to keep Orange County residents and businesses informed of emergencies through voice messages or text alerts. We asked respondents about their familiarity of AlertOC to understand how aware the public is about an alert system for their county. The survey revealed that 51.0% of respondents are not aware of AlertOC. Some 20.7% are aware of the program but have not signed up, and 19.6% are currently signed up.

	% respondents
I am currently signed up for <u>AlertOC</u>	19.6%
I am aware, but have not signed up	20.7%
I am not aware of the program	51.0%



Having explored awareness of AlertOC, we set out to examine the sign-up process for AlertOC and how the public would like to get alert notifications. We ran a focus group comprising of 13 Orange County residents and administered an anonymous survey regarding disaster alerts and AlertOC. Participants in the focus group reported receiving alerts for emergencies or natural disasters from Facebook, Twitter, and university alert systems rather than AlertOC. One participant said “If I hear something is happening, I hate to say it, but the first place I look at is Facebook because everyone posts everything.”

From the focus group came recommendations on how to improve Orange County’s emergency notification system, AlertOC. One of the recommendations stated that AlertOC should work in similarity to the AMBER alert system that is a part of the U.S. Department of Justice, Office of Justice Program. These alerts are sent via e-mail, electronic traffic-condition signs, commercial electronic billboards, or through wireless device SMS text messages from the Emergency Alert System that is coordinated by the Federal Emergency Management Agency (FEMA), the Federal Communications Commission (FCC) and the National Oceanic and Atmospheric Administration (NOAA).

From the text of the focus group, a word map was created outlining the number of times a word was repeated in relation to what the group wanted from AlertOC and is shown below. Words such as “app”, “trust”, and many social media names came up. The words “don’t know” were put out when the focus group was asked if they knew about AlertOC.

Words Associated with AlertOC Registration and Notifications



What do you look for in something that's going to be trustworthy?

Yeah, I'm thinking like Amber alerts, like everybody is getting these alerts, we all know who it's from, it seems like a reliable source, something like that

AlertOC is a mass notification for emergencies and it works across all 34 cities in Orange County and the first question I have is before today how many of you had heard of it?

"I have the AlertOC, CAL FIRE and I think when the last wildfires happened I signed up for like all the fire at ones because I wanted to know what's going on."

"I have a ReadyOC, is there a difference?"



"I signed up for AlertOC during the last natural disaster. So, I think like as terrible as it is to say, I think really like pushing the campaign hard for people to sign up when there is a problem."

Conveying Disaster Preparedness to the Public

From the focus group, areas of improvement were suggested for AlertOC as pictured in the word map. Words such as “fast”, “text”, “email”, “specific”, and “endorse”, came up the most. This conveys the point that Orange County residents would like to see alerts that come quickly, through multiple platforms, and come from a credible source. With this, having a link to click on that leads the resident to more information on the disaster or steps to take in that emergency is also desirable.



“Like having the police and fire endorse it. I mean, if they endorse it, then we would probably would sign up for that.”

“Our school has like instructional nights, so they offer stuff about like bullying or things like that. So, if there was like, something for parents on like emergency preparedness — 100% I would go.”

“So like, endorsed by the city of Laguna Niguel, or like testimonials or things like from people in positions like Sheriff or the governor or like statements, I think would build credibility.”

Visually Surveying Orange County's Preparedness

The following maps indicate the rate of disaster preparedness in Orange County, specifically the levels of AlertOC sign-ups, and disaster kit and plan creation by using zip code data from the Disaster Preparedness in Orange County survey. In each map, the level of preparedness is demonstrated by the color given to that area; preparedness is highest in blue areas, whereas preparedness is lowest in areas transitioning from red to bright yellow.

Figure 1 demonstrates the rates of AlertOC sign-ups in various Orange County locations. As demonstrated in the map, the areas with the lowest rates of AlertOC sign-ups are given a yellow indicator. Here, the areas surrounding Anaheim, Fullerton, Lake Forest, Tustin, and Westminster have the lower sign-up rates. Aliso Viejo, Buena Park, Costa Mesa, Laguna Hills, Rancho Santa Margarita, Santa Ana, and Yorba Linda have low sign-up rates as well.

figure 1

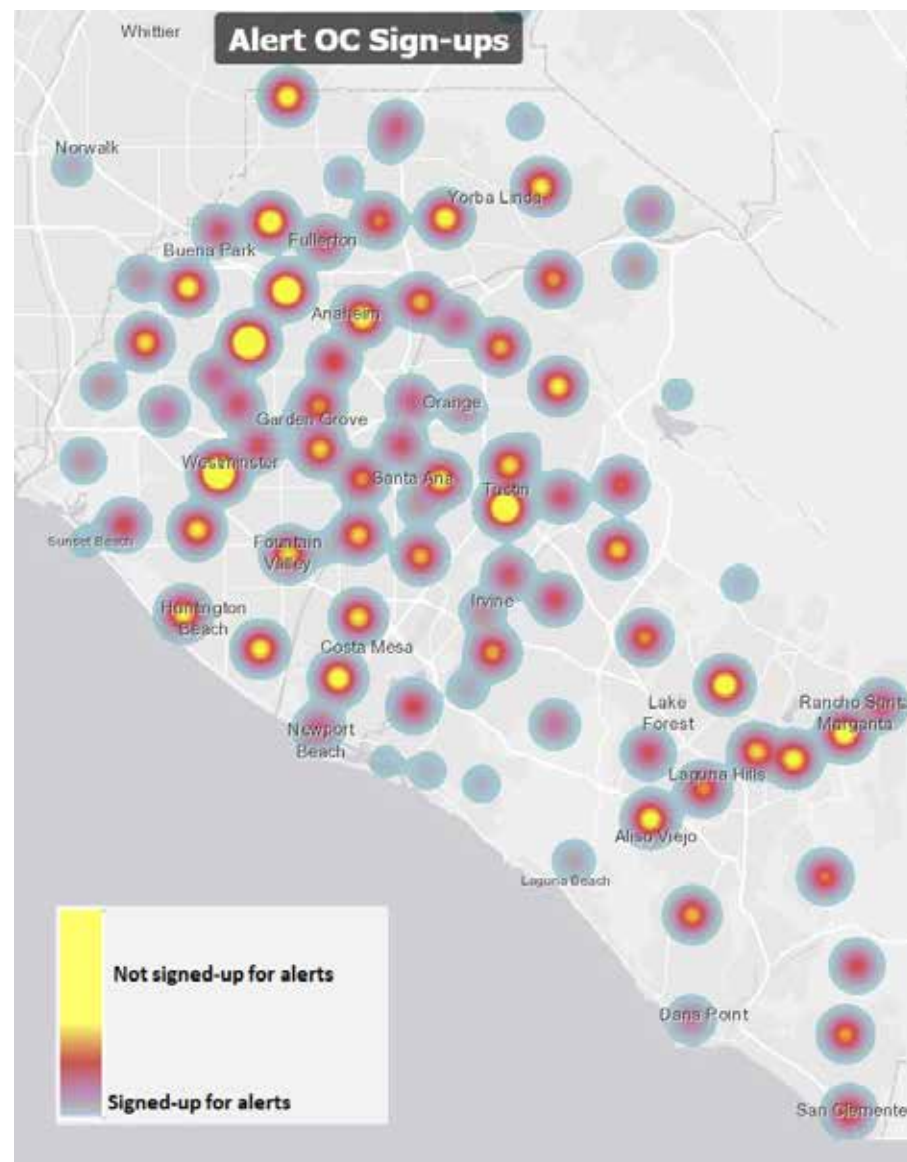


Figure 2 illustrates the levels of disaster kit preparedness in Orange County, with areas of high preparedness are blue, transitioning to red then yellow with diminishing levels of kit preparation. Similar to Figure 1, areas with low disaster kit preparation are Anaheim, Fullerton, Lake Forest, Tustin, and Westminster. Also, Aliso Viejo, Buena Park, Newport Beach, Rancho Santa Margarita, and Yorba Linda have low levels of disaster kit creation.

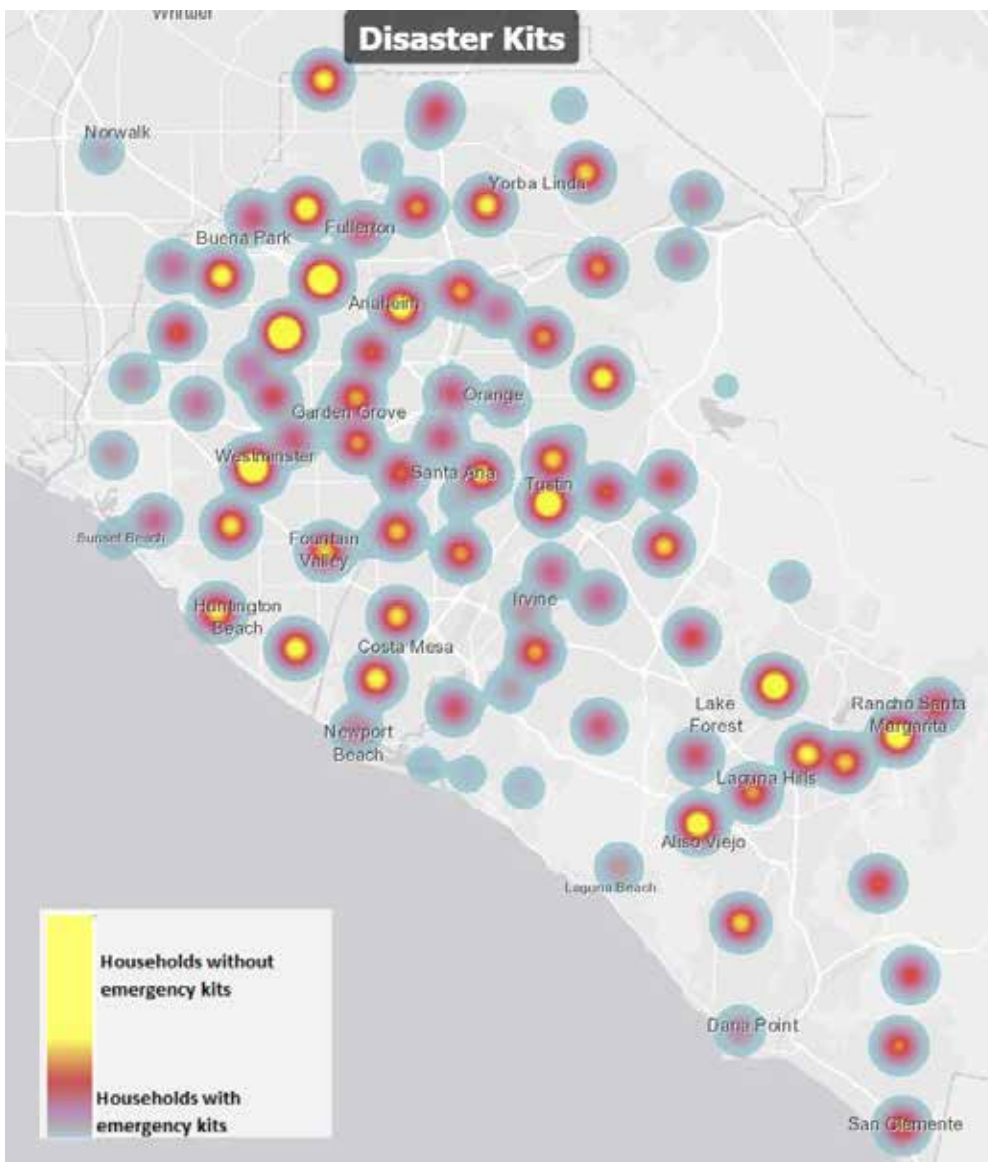
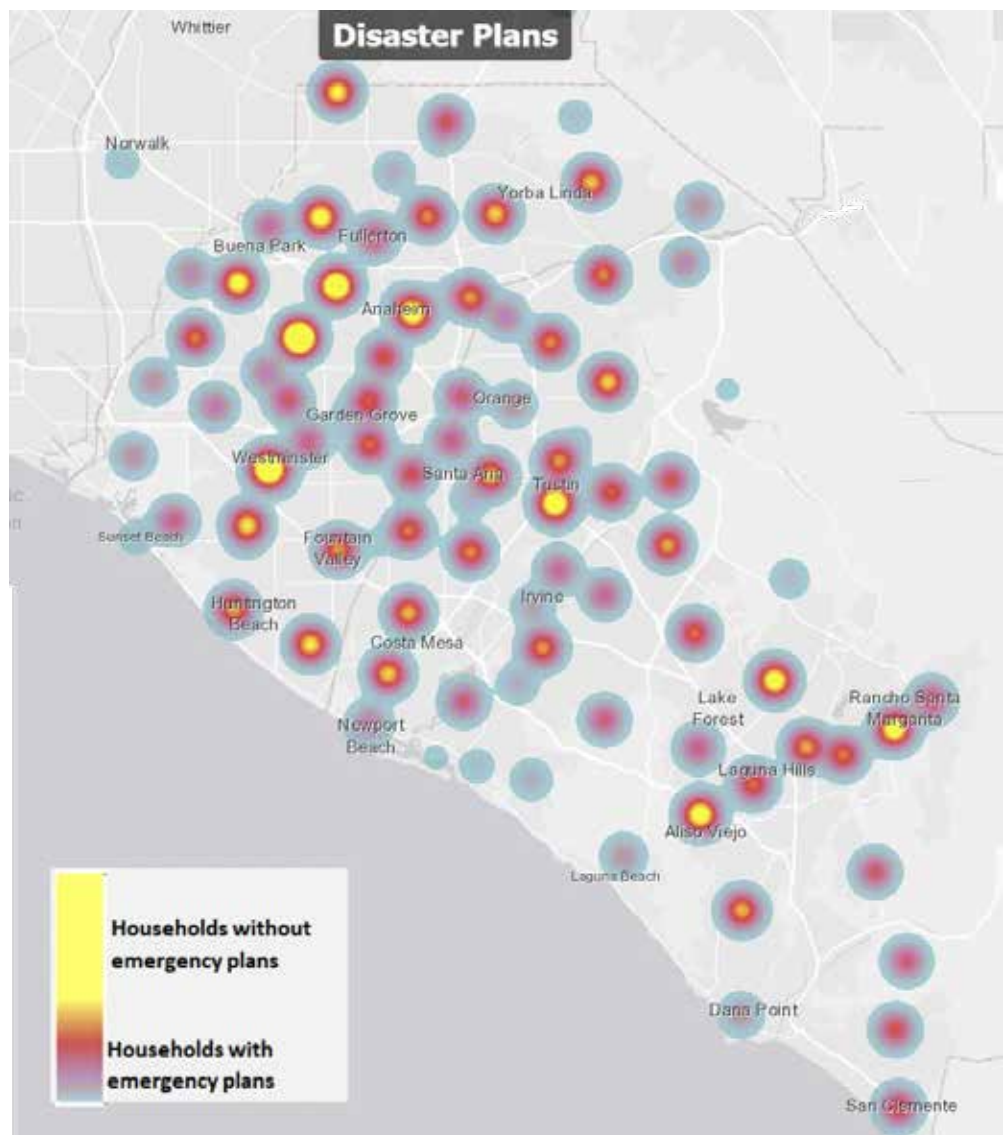


figure 2

Figure 3 illustrates the rate of disaster plan preparation in Orange County, with high levels of plan creation given the color blue, and lower levels given red, then yellow. As with the previous maps, the areas with the lowest rate of disaster plan creation are Anaheim, Fullerton, Lake Forest, Tustin and Westminster. Additionally, Aliso Viejo, Buena Park, Newport Beach, and Rancho Santa Margarita have low levels of disaster plan creation.

■ figure 3





Detail: The Holy Fire, Lake Elsinore, CA, August 18, 2018.
More than 20,000 people evacuated and the fire spread over 20,000 acres.
Credit: Kevin Warn/ZUMA Wire/Alamy Live News



Smoke from the Canyon Fire 2, burning in the Anaheim Hills, October 9, 2017.
Some 16,000 residents were evacuated from Anaheim, Orange and Tustin.
Dozens of homes were lost and over 9,000 acres burned.
Credit: juniorolivas / Stockimo / Alamy Stock Photo

Appendix: OC Survey Results

TABLE OF CONTENTS

I. Preparedness

- A. Have you put together a disaster/emergency supply kit
- B. Have you put together a plan
- C. Have you put together a plan for what you would do with your pets
- D. I have a disability/health condition that might affect my ability to prepare
- E. Someone in my household has a disability/health condition that might affect their ability to prepare
- F. Quotes from focus group

II. Fear

- A. How afraid are you of devastating earthquake
- B. How afraid are you of devastating flood
- C. How afraid are you of devastating drought
- D. How afraid are you of devastating wildfire
- E. How afraid are you of devastating landslide
- F. How afraid are you of devastating landslide
- G. How afraid are you of devastating tsunami
- H. How afraid are you of terrorist attack
- I. How afraid are you of mass shooting
- J. How afraid are you of power outage
- K. How afraid are you of mass disease outbreak/pandemic

III. AlertOC & emergency notifications

- A. The only time I think about emergency notification
- B. Are you signed up for any disaster alert programs
- C. How familiar are you with AlertOC
- D. Quotes from focus group

IV. Demographics (Disaster in OC survey)

- A. Gender
- B. Race/Ethnicity
- C. Age

Preparedness

A. Have you or anyone in your household put together a disaster or emergency supply kit, containing supplies such as food, water and medical supplies?

	% of respondents
Yes	44.9%
No	55.1%

	I have a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	50.8%
No	49.2%
	Someone in my household has a disability or a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	52.1%
No	47.9%

	Yes	No
Male	52.7%	47.3%
Female	41.3%	58.7%
White Non-Hispanic	44.6%	55.4%
Black Non-Hispanic*	40.9%	59.1%
Hispanic	45.1%	54.9%
Asian/Chinese/Japanese	47.7%	52.3%
Employed Full-time	50.2%	49.8%
Employed Part-time	44.7%	55.3%
Not employed	40.5%	59.5%
Retired	41.2%	58.8%
Homemaker	39.5%	60.5%
Student	39.4%	60.6%
Temporarily unemployed	38.2%	61.8%
Disabled/handicapped	29.0%	71.0%
Under \$20,000	32.8%	67.2%
\$20,000 to under \$30,000	52.3%	47.7%
\$30,000 to under \$40,000	40.0%	60.0%
\$40,000 to under \$50,000	38.0%	62.0%
\$50,000 to under \$60,000	41.9%	58.1%
\$60,000 to under \$70,000	40.3%	59.7%
\$70,000 to under \$100,000	43.5%	56.5%
\$100,000 to under \$150,000	49.6%	50.4%
\$150,000 or more	57.8%	42.2%

	Yes	No
Owns home	51.3%	48.7%
Rents home	39.1%	60.9%
Less than high school	33.3%	66.6%
High school incomplete	31.3%	68.8%
High school graduate	48.8%	51.2%
Some college, no degree	41.7%	58.3%
Associate degree	46.2%	53.8%
<u>Bachelors</u> degree	45.4%	54.6%
Some postgraduate schooling, no degree	46.7%	53.3%
Postgraduate or professional degree	47.5%	52.5%

B. Have you or anyone in your household put together a plan for what you would do in a natural disaster or emergency such as a fire in your home?

	%
Yes	45.4%
No	54.6%

	I have a disability or a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	50.8%
No	49.2%

	Someone in my household has a disability or a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	51.8%
No	48.2%

	Yes	No
Male	51.4%	48.6%
Female	42.7%	57.3%
White Non-Hispanic	47.0%	53.0%
Black Non-Hispanic*	40.9%	59.1%
Hispanic	47.3%	52.7%
Asian/Chinese/Japanese	40.8%	59.2%
18-24	43.8%	56.2%
25-29	50.7%	49.3%
30-49	43.6%	56.4%
50-64	49.5%	50.5%
65+	40.0%	60.0%
Employed Full-time	50.5%	49.5%

	Yes	No
Employed Part-time	44.1%	55.9%
Not employed	39.2%	60.8%
Retired	40.3%	59.7%
Homemaker	46.9%	53.1%
Student	33.3%	66.7%
Temporarily unemployed	29.4%	70.6%
Disabled/handicapped	61.3%	38.7%
Under \$20,000	36.9%	63.1%
\$20,000 to under \$30,000	49.5%	50.5%
\$30,000 to under \$40,000	40.0%	60.0%
\$40,000 to under \$50,000	40.5%	59.5%
\$50,000 to under \$60,000	51.2%	48.8%
\$60,000 to under \$70,000	45.2%	54.8%
\$70,000 to under \$100,000	42.9%	57.0%
\$100,000 to under \$150,000	47.4%	52.6%
\$150,000 or more	57.8%	42.2%
Less than high school	33.3%	66.7%
High school incomplete	33.5%	62.5%
High school graduate	49.4%	50.6%
Some college, no degree	42.5%	57.5%
Associate degree	49.0%	51.0%
<u>Bachelors</u> degree	44.0%	56.0%
Some postgraduate schooling, no degree	36.7%	63.3%
Postgraduate or professional degree	50.0%	50.0%

C. Have you or anyone in your household put together a plan for what you would do with your pet(s) in a natural disaster or emergency such as a fire in your home?

	%
Yes	30.9%
No	36.8%
I don't have pets	32.3%

“I need to be prepared I need to make sure I have a plan for my kids and my family. That’s what I think about.”

	I have a disability or a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	38.8%
No	31.5%
I don't have pets	29.6%
	Someone in my household has a disability or a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	38.7%
No	35.4%
I don't have pets	25.9%

C. (continued from pg 27)

Have you or anyone in your household put together a plan for what you would do with your pet(s) in a natural disaster or emergency such as a fire in your home?

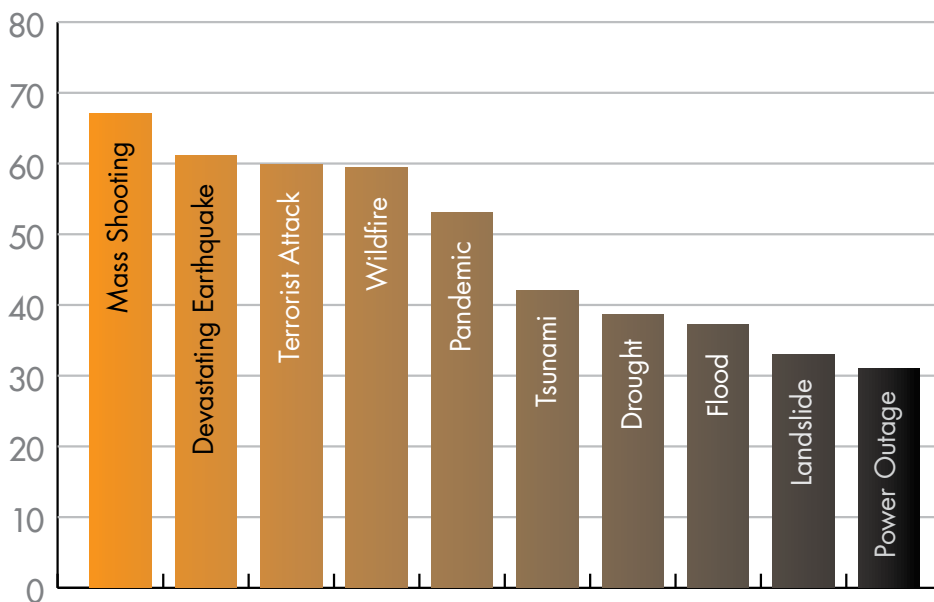
	I have a disability or a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	38.8%
No	31.5%
I don't have pets	29.6%
	Someone in my household has a disability or a disability or health condition that might affect my ability to prepare for a disaster
	Agree
Yes	38.7%
No	35.4%
I don't have pets	25.9%

Fear

How afraid are you of the following events?

	Afraid	Not Afraid
Devastating earthquake	61.1%	38.9%
Devastating flood	37.2%	62.8%
Devastating drought	38.7%	61.3%
Devastating wildfire	59.5%	40.5%
Devastating landslide	33.0%	67.0%
Devastating tsunami	42.0%	58.0%
Terrorist attack	59.7%	40.3%
Mass shooting	67.1%	32.9%
Power outage	31.0%	69.0%
Massive disease outbreak/pandemic	53.1%	46.9%

Fear of Natural and Manmade Disasters in Orange County



AlertOC

Please indicate your level of agreement with the following statement:

The only time I think about emergency notification is during or immediately after a natural or manmade disaster.

	%
Agree	63.9%
Disagree	36.1%

“I signed up for AlertOC during the last natural disaster. So, I think like as terrible as it is to say, I think really like pushing the campaign hard for people to sign up when there is a problem.”

“I have the AlertOC, CAL FIRE and I think when the last wildfires happened I signed up for like all the fire at ones because I wanted to know what’s going on.”

	Agree	Disagree
White Non-Hispanic	59.1%	40.9%
Black Non-Hispanic	72.7%	27.3%
Hispanic	65.9%	34.1%
Asian/Chinese/Japanese	70.7%	29.3%
18-24	69.7%	30.3%
25-29	64.9%	35.1%
30-49	68.2%	31.8%
50-64	55.0%	45.0%
65+	56.8%	43.2%
Employed Full-time	65.20%	34.80%
Employed Part-time	65.80%	34.20%
Not employed	59.50%	40.50%
Retired	54.60%	45.40%
Homemaker	61.7%	38.3%
Student	71.2%	28.8%
Temporarily unemployed	73.5%	26.5%
Disabled/handicapped	58.1%	41.9%

How familiar are you with AlertOC, Orange County's mass notification system designed to keep Orange County residents and businesses informed of emergencies?

Don't know/unsure:	8.7%
I am currently signed up for <u>AlertOC</u>	19.6%
I am aware, but have not signed up	20.7%
I am not aware of the program	51.0%

AlertOC is a mass notification for emergencies and it works across all 34 cities in Orange County and the first question I have is before today how many of you had heard of it?

*4 people out of 13
raised their hands...*



% of group	I am currently signed up for <u>AlertOC</u>	I am aware, but have not signed up	I am not aware of the program
Male	22.7%	25.9%	44.2%
Female	18.3%	18.0%	54.6%

18-24	8.6%	22.2%	57.8%
25-29	11.5%	23.6%	58.8%
30-49	20.5%	20.8%	50.6%
50-64	28.6%	17.3%	43.2%
65+	26.4%	20.0%	48.0%

White Non-Hispanic	20.7%	21.2%	51.4%
Black Non-Hispanic	18.2%	22.7%	40.9%
Hispanic	21.2%	21.2%	48.7%
Asian/Chinese/Japanese	17.2%	18.4%	51.1%

Experienced natural/manmade disaster near 3 <u>mile</u> of home/business	28.7%	23.0%	42.6%
Never experienced natural/manmade disaster near 3 <u>mile</u> of home/business	16.8%	20.0%	53.6%

% of group	I am currently signed up for <u>AlertOC</u>	I am aware, but have not signed up	I am not aware of the program
I have a disability/health condition that might affect my ability to prepare for disaster	23.1%	22.7%	44.6%
I do not have a disability/health condition that might affect my ability to prepare for disaster	18.5%	20.0%	53.2%
Someone in my household has a disability/health condition that might affect their ability to prepare for a disaster	21.6%	23.8%	45.1%
No one in my household has a disability/health condition that might affect their ability to prepare for a disaster	18.7%	19.2%	53.7%



Are you signed up for any disaster alert programs?

	%
Yes	28.0%
No	57.7%
Don't know:	14.3%

Are you signed up for any disaster alert programs?	Yes	No
18-24	15.7%	72.4%
25-29	20.9%	60.8%
30-49	26.9%	59.5%
50-64	40.9%	45.9%
65+	35.2%	48.0%

	Yes	No
White Non-Hispanic	29.8%	54.3%
Black Non-Hispanic	22.7%	63.6%
Hispanic	28.8%	60.2%
Asian/Chinese/Japanese	25.3%	57.5%

Single, never married	21.1%	62.6%
Single, living with partner	23.3%	60.8%
Married	38.3%	50.7%
Separated	9.5%	66.7%
Widowed	34.2%	52.6%
Divorced	26.0%	58.0%

Experienced natural/manmade disaster near 3 miles of home/business	42.6%	46.3%
Never experienced natural/manmade disaster near 3 miles of home/business	23.5%	61.2%

If there was an emergency that required an immediate response, immediate lifesaving action, like evacuation or whatever it was, how do you think you would get that information?

“I would hope some sort of text message would come to everyone.”

“Someone's phone would probably go off and you would learn about it that way. “

“I would hope I would get some sort of alert or notification on my phone but usually when there is some sort of big event that starts happening somebody will see it on the news.”

Please indicate your level of agreement with the following statement:

I have a disability or a health condition that might affect my ability to prepare for a disaster.

	%
Agree	25.1%
Disagree	74.9%

You are just kind of assuming that if there is something big, they, the government, is going to reach out to you without you having done anything necessarily ahead of time?



Please indicate your level of agreement with the following statement:

Someone in my household has a disability or a health condition that might affect their ability to prepare for a disaster.

	%
Agree	31.7%
Disagree	68.3%

Demographics of Survey

Gender

	% of respondents
Male	30.8%
Female	69.2%

Race/Ethnicity

	% of respondents
White	51.4%
Black	2.2%
Hispanic	22.2%
Asian	17.1%
Native American	.7%
Native <u>Hawaiin</u>	.7%
Other	2.8%
Mixed	2.9%

Age

	% of respondents
18-24	17.9%
25-29	14.3%
30-49	33.4%
50-64	21.3%
65+	12.1%

End Notes

Introduction Fire Data:

(http://www.fire.ca.gov/current_incidents/?page=8&curSort=County)

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Page 8 Chart: process model. *International Journal of Disaster Risk Reduction*, 10, 374-380. doi:10.1016/j.ijdr.2014.10.012

Notes

Notes

Design Notes

Disaster Preparedness in Orange County and the graphics utilize the following:

To achieve visual harmony a modified version of the grid Jan Tschichold conceived for his book *Typographie* was employed.

MINION PRO Chapman's serif family, is a digital typeface designed by Robert Slimbach in 1990 for Adobe Systems. The name comes from the traditional naming system for type sizes, in which minion is between nonpareil and brevier. It is inspired by late Renaissance-era type.

FUTURA is Chapman's sans serif family. The typeface was designed in 1927 by Paul Renner, as a contribution on the New Frankfurt-project. It is based on geometric shapes that became representative of visual elements of the Bauhaus design style of 1919–33. Futura has an appearance of efficiency and forwardness. (source Wikipedia)

Book exterior and interior design by Chapman University professor Eric Chimenti. His work has won a Gold Advertising Award, been selected for inclusion into *LogoLounge: Master Library, Volume 2 and LogoLounge Book 9*, and been featured on *visual.ly*, the world's largest community of infographics and data visualization. He has 20+ years of experience in the communication design industry. To view a client list and see additional samples please visit www.behance.net/ericchimenti.



Professor Chimenti is also the founder and head of Chapman's Ideation Lab that supports undergraduate and faculty research by providing creative visualization and presentation support from appropriately qualified Chapman University undergraduate students. Services include creative writing, video, photography, data visualization, and all aspects of design. The students specialize in the design and presentation of complex communication problems.



**Wilkinson College of Arts,
Humanities, and Social Sciences**
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