

Spring 2017

## Social Media for Emergency Management (SMEM): Promoting Cross-sector Collaboration

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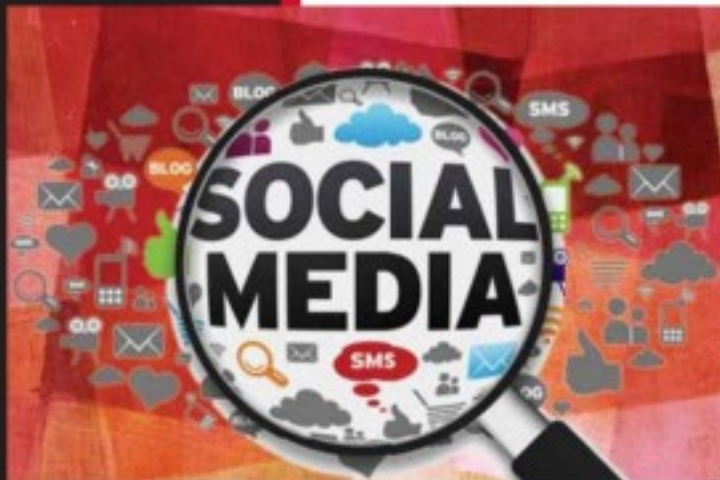
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# **Social Media for Emergency Management (SMEM):**

Promoting Cross-sector Collaboration



**SPRING 2017**

## About the College of Public Affairs and Community Service

The College of Public Affairs and Community Service (CPACS) was created in 1973 to ensure that the university was responsive to the critical social needs of our community and state. The College was given the mission not only to provide educational programs of the highest caliber to prepare students for leadership in public service, but also to reach out to the community to help solve public problems.

The College has become a national leader among similar colleges, with nine programs ranked in the top 25 in the nation. Our faculty ranks are among the finest in their disciplines. Faculty, staff, and students are integral to the community and state because of our applied research, service learning, and community partnerships. We take our duty seriously to help address social needs and craft solutions to local, state, and national problems. For more information, visit our website: [cpacs.unomaha.edu](http://cpacs.unomaha.edu)

## CPACS Urban Research Awards

Part of the mission of the College of Public Affairs and Community Service (CPACS) is to conduct research, especially as it relates to concerns of our local and statewide constituencies. CPACS has always had an urban mission, and one way that mission is served is to perform applied research relevant to urban society in general, and the Omaha metropolitan area and other Nebraska urban communities in particular. Beginning in 2014, the CPACS Dean provided funding for projects with high relevance to current urban issues, with the potential to apply the findings to practice in Nebraska, Iowa and beyond.



# Promoting Collaboration on Social Media

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**Spring 2017**

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College of Public Affairs and Community Service Dean's Office.



## QUICK OVERVIEW OF THE TOPIC

This study focuses on the intergovernmental use of social media to promote (or impede) cooperation and collaboration. Social media platforms are often used by several emergency management-related agencies (public, private, and non-profit sector) prior to, during, and after disasters. Most studies have explored the use of social media during disasters by one agency or the interaction between an emergency management-related agency and the public. However, very little research has been done to determine the use across agencies as a means to facilitate cooperation and collaboration. One important activity of emergency managers is leverage assistance from other agencies by promoting cooperation and collaboration. Their efforts to encourage trust, build consensus, facilitate communication, and strengthen necessary relationships are invaluable prior to and during active emergencies. Social media, now an established medium for communication has been known to build consensus (or dissension), boost trust (or mistrust) and strengthen (or destroy) relationships.

## RESEARCH PROGRESS

### *Social Media Data*

We analyzed social media data from state and local public emergency management-related agencies with partnership agreements on social media platforms, Facebook and Twitter. We noticed that most activity occurred on Twitter and that at least one organization did not have a Facebook page. We have decided to proceed with the analysis focusing on the data from Twitter. To limit our location to the Omaha area we narrowed our examination to include one agency from each level of government: Federal Emergency Management Agency Region 7, Nebraska Emergency Management Agency, Douglas County Emergency Management Agency, and the Omaha Police Department. We examined their use of Twitter for connecting to other government agencies, as

well as to each other. This snapshot identifies the organizations that form connections over Twitter and the types of public information discussed among emergency management and related agencies.

### *Interviews*

Our one interview led us to information about a social media coalition among emergency management agencies in the FEMA Region 7 area. We anticipate including this data into our analysis.

## STUDENTS

To date, we hired one student, who was recently accepted to the School of Public Administration's Ph.D. program.

## DISSEMINATION

We had one presentation accepted for the Natural Hurricane Conference in March 2016, however, we had to decline the acceptance because it conflicted with other conferences due to their late notification. We had one poster accepted to the Natural Hazards Workshop in July 2016, which requires a presenter to attend the workshop for continued acceptance. This particular workshop is headed by the editors of the *Natural Hazards Review* (NHR) one of the leading journals in the field. By presenting a poster, we can leverage proximity to discuss the potential for a journal article in the NHR. Similarly, the IRCD is lead by the editors of the *International Journal of Mass Emergencies and Disasters* (IJMED), again we hope to discuss the potential for a journal article in IJMED. See poster on next page.

## NATIONAL STUDY POTENTIAL

Finally, the Natural Hazards Workshop is often attended by current and former program managers of the National Science Foundation, responsible for grants related to the field. Attendance at this particular conference is strategic to potentially assist with identification of larger grants.

# Intergovernmental Connections on Social Media: Snap shot of emergency management agencies

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## PROBLEM

The general public, disaster victims, nonprofits, private sector, and emergency management-related agencies use social media platforms during all phases of disasters (Carter, et al. 2008; Paragolepakos et al. 2014; Bennett, 2016). Social media platforms are used before, during, and after disasters for organizing volunteers, locating loved ones, warning the public, and disseminating preparatory information (Carter, 2012; Bennett, 2016). The most social media research has indicated differences in use among the different sectors, among the different platforms, and in comparison between day-to-day activities vs. during an active incident (Muhik, 2015). Meanwhile, previous inter-organizational research has examined connection and collaboration among agencies during disasters (Jo & Eppner, 2016). The research looks at how social media platforms are used within a snapshot of public sector inter-organizational connection.

## RESEARCH QUESTION

What are the advantages or barriers to the use of social media as a means of facilitating intergovernmental cooperation by various FEMA-related agencies that are active during disasters?

## SCOPE



## METHOD

Observations of postings on Twitter and Facebook serve as the data source in this study. For purposes of this research, all public postings on the Facebook and Twitter page of each entity were observed over a year (2015). Douglas County Emergency Management Agency was used as the geographic starting point. Other agencies in the intergovernmental scope were selected based on their active use on social media and their initial connection as a public sector organization through the Douglas County Emergency Agency's public page. Only posts that connected to other organizations were tallied in this study. This means that each post must have been a shared, or retweeted, or liked by another organization. This study also analyzes documents and pictures posted to social media sites by the emergency management offices for public viewing. The method is based on "qualitative observational approach used before in social media research (Bennett, 2016)."   
 \* Due to the specific use of Facebook for the identified agencies, this paper focuses on Twitter over Facebook. Tweets were coded and reported by organizational connection. The details focus on the type of post, further analysis and information will be necessary to determine the frequency of the connections and why these specific connections were made.

Agency	Facebook	Twitter	Total
OPDE	N/A	2,468	2,468
DCEMAR	328	328	648
NEEMAR	N/A	1,144	1,144
FEMAR Regional	1,368	948	2,316
Serpent County EMAR	N/A	248	248
<b>Total</b>	<b>1,696</b>	<b>4,088</b>	<b>4,256</b>

## NEXT STEPS

- Understand why these connections are made and any relevant strategies.
- Continue analysis to "weight" connections based on their frequency.
- Expand the scope of the study to include non-emergency related connections.
- Expand to include cross-sector connections with private, non-profit and community groups.

## FUNDING

Funding for this preliminary study supported the scope. The study was sponsored by the University of Nebraska at Omaha College of Public Affairs and Community Service Urban Research Grants Program. One of the goals of this funding source is to conduct research, especially in order to connect with local (Omaha) and statewide (Nebraska) coalitions.

## REFERENCES

- Bennett, DeeDee (2016). "How do Emergency Managers Use Social Media?" Journal of Emergency Management, May/Apr 2016, volume 12 (2).
- Carter, Adam (2012). Disaster 2.0: The Application of Social Media Systems for Modern Emergency Management. CRC Press.
- Hu, G., & Gupta, M. (2014). Information communication technology (ICT) utilization for effective emergency management networks. Public Management Practice 12(1), 121-133.
- Paragolepakos, P., Bittel, A. Z., & Sore, S. (2014). Citizen-government collaboration on social media: The case of Twitter in the 2011 floods in England. Government Information Quarterly, 31(1), 369-372.
- Nathan, J., Pines, J., & Nishikubo, T. (2010). Hack attacks on the front lines: Emergency use of social media in the 2007 Southern California. In Proceedings of 13th International Symposium on Crisis Response and Management Conference (ISCRAM 2010).
- Muhik, Gordon (2015). "Social Media Use in Emergency Management." Journal of Emergency Management, Volume 11 (4).

## PRELIMINARY FINDINGS

Using the method outlined the initial results of public sector entities' connections are shown by:

### Organization Connected to

At the county level, similar connections are made with third responder agencies such as COO, COB and Federal public response, among public works, elected officials and public health. The connections seemed more varied. Most connections are with nonprofits, FEMA, Red Cross, CDC, DHS, and FBI. Most alarming is that the connections made on Twitter do not correspond to the connections established per the FEMA.

### Types of Posts

By coding the posts according to topic, seven different pictures observed:

- All organizations discuss public relations on Twitter.
- Four of the five organizations discussed each of the following: severe weather, animals, weather warnings, FEMA, road or accident report.
- Only 2 organizations posted in another language (Spanish) Federal and City level.
- Most animal related posts were used to seek help for animals from users.



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# PROMOTING COLLABORATION ON SOCIAL MEDIA

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Graduate Student : Emily Newman*

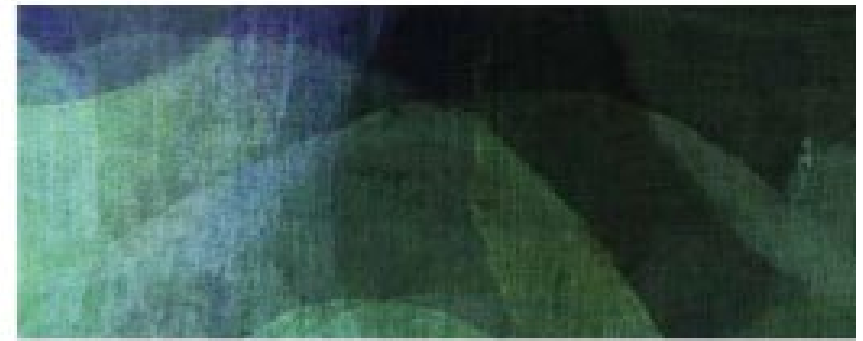
# AGENCY COLLABORATION IN EMERGENCY MANAGEMENT

This study explores the use of social media platforms as a means to establish and maintain intergovernmental collaboration for emergency management related agencies.

## Collaboration Importance:

- Intergovernmental
- Intra governmental
- Cross sector

(Waugh and Streib, 2006; Hu, Knox, and Kapucu, 2014; Hu & Kapucu, 2016)







## SOCIAL MEDIA FOR EMERGENCY MANAGEMENT

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- Disaster Management
  - Before
  - During
  - After
- Efforts include
  - organizing volunteers,
  - locating loved ones,
  - warning the public, and
  - disseminating preparedness information



## SOCIAL MEDIA FOR EMERGENCY MANAGEMENT

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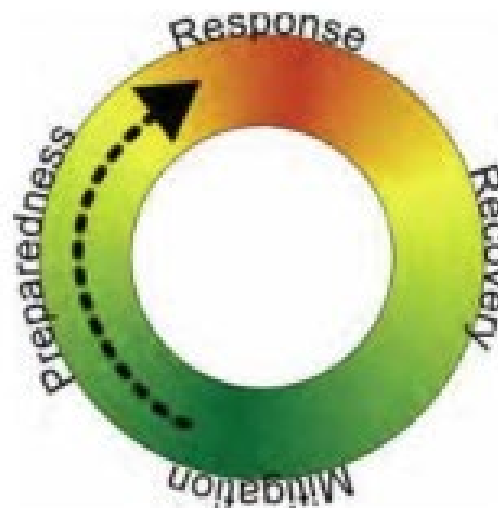
In this study, the term 'social media' is limited to online socially connected platforms that require users

- to connect to others via postings,
- followings,
- videos and/or
- trending topics.

This limitation is an adaptation of Boyd and Ellison's (2008) definition of online social network sites and has been used in other studies on social media (Bennett, 2014).



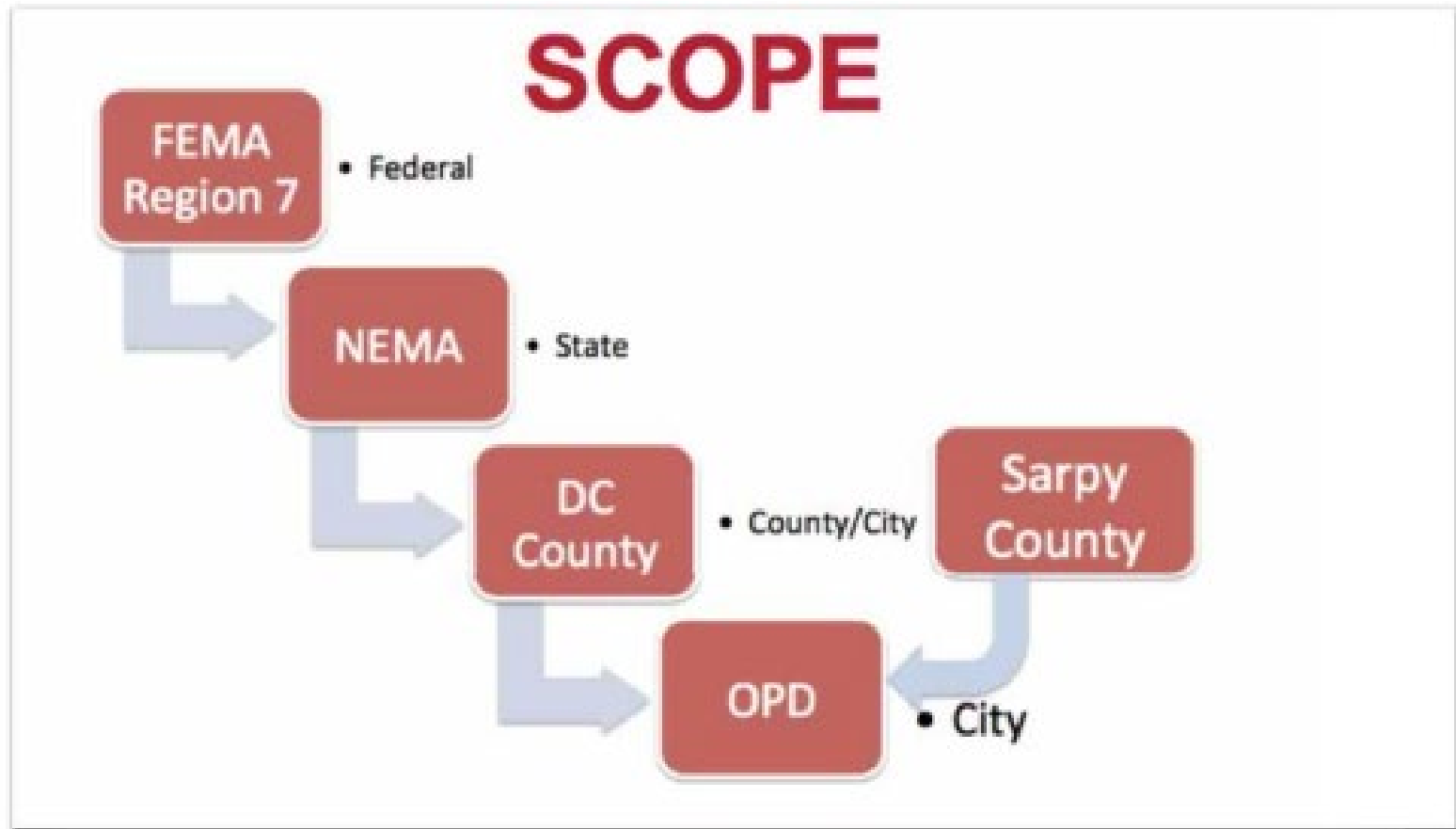
Intergovernmental  
organization



“HOW ARE SOCIAL MEDIA PLATFORMS USED FOR INTER-GOVERNMENTAL COOPERATION BY VARIOUS PUBLIC SECTOR EMERGENCY MANAGEMENT AGENCIES?”

# VERY NARROW SCOPE

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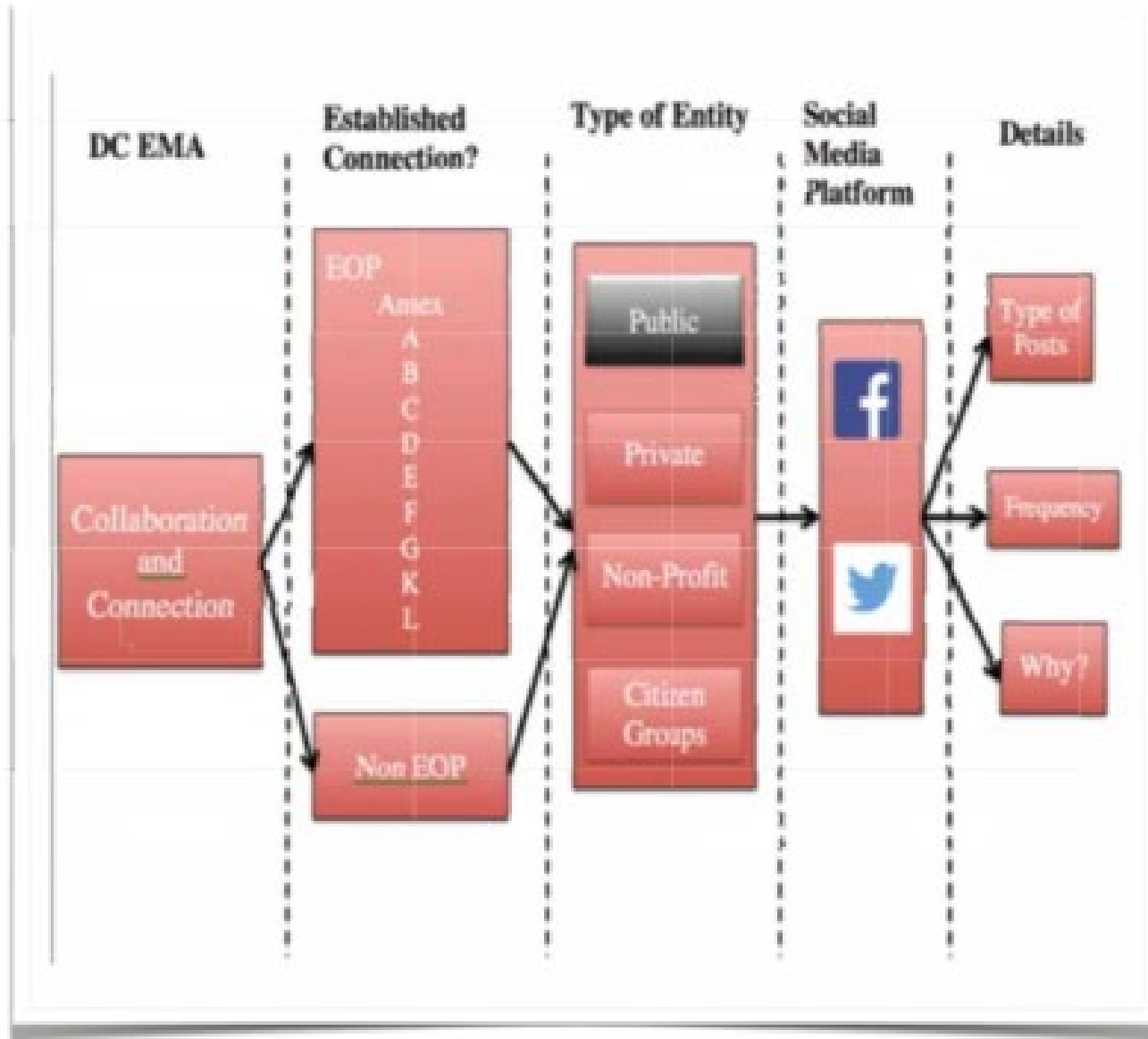
# SOCIAL MEDIA POSTS

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	Facebook	Twitter	Totals
<b>OPD (city)</b>	N/A	2,463	2,463
<b>DCEMA (county)</b>	32	32	64
<b>NEMA (state)</b>	N/A	1,144	1,144
<b>FEMA Region 7 (federal)</b>	136	206	342
<b>Sarpy County EMA (county)</b>	N/A	243	243
<b>Totals</b>	168	4,088	4,256



# SOCIAL MEDIA POSTS



# TWITTER FOCUS: SPRADLEY'S APPROACH

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- Space: Select Government Twitter Pages
- Objects:
  - Tweets retweeted by agency from another governments posts
  - Tweets initiated by agency with another governments handle
- Act: Posting or retweeting messages on Twitter page
- Actors: DCEMA, Sarpy EMA, NEMA, FEMA Region 7 tweets
- Activities: Disseminating preparedness information, warnings, weather, lessons learned from other disasters
- Event: Day-to-day activities 2015
- Time: Observations year of 2015
- Goal: Observe evidence of inter organizational collaboration for one year among Omaha area (and beyond) dedicated emergency management entities.



# TWITTER FOCUS: SPRADLEY'S APPROACH

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- Space: Select Government Twitter Pages
- Objects:
  - Tweets retweeted by agency from another governments posts
  - Tweets initiated by agency with another governments handle





# CONTENT CODING

The social media content was explored using a modified version of Spradley's observational research and analyzed on Nvivo11 software (Spradley, 1980, Bennett, 2014).

Organizations/Gov't Agencies		Twitter
Federal	FEMA R7	RT/handle
State	NEMA	RT/handle
County	DCEMA Sarpy	RT/handle
City	Omaha - DC EOP	RT/handle/follows



# CONTENT CODING

The social media content was explored using a modified version of Spradley's observational research and analyzed on Nvivo11 software (Spradley, 1980, Bennett, 2014).

Topics	Subtopics				
Prepare	Public Education	Weather information	Siren testing	Amber Alerts	Road/Accident
Response	Warning	Crime Reports			
Recovery	Debris	Assistance			
Disaster	9/11	Hurricane Katrina	Hurricane Sandy	San Bernadino	Wayne Tornado
Other	Officer related	Animal Related	Holiday	Other Language	

# FINDINGS 1: CONNECTION IN EMERGENCY OPERATIONS PLAN

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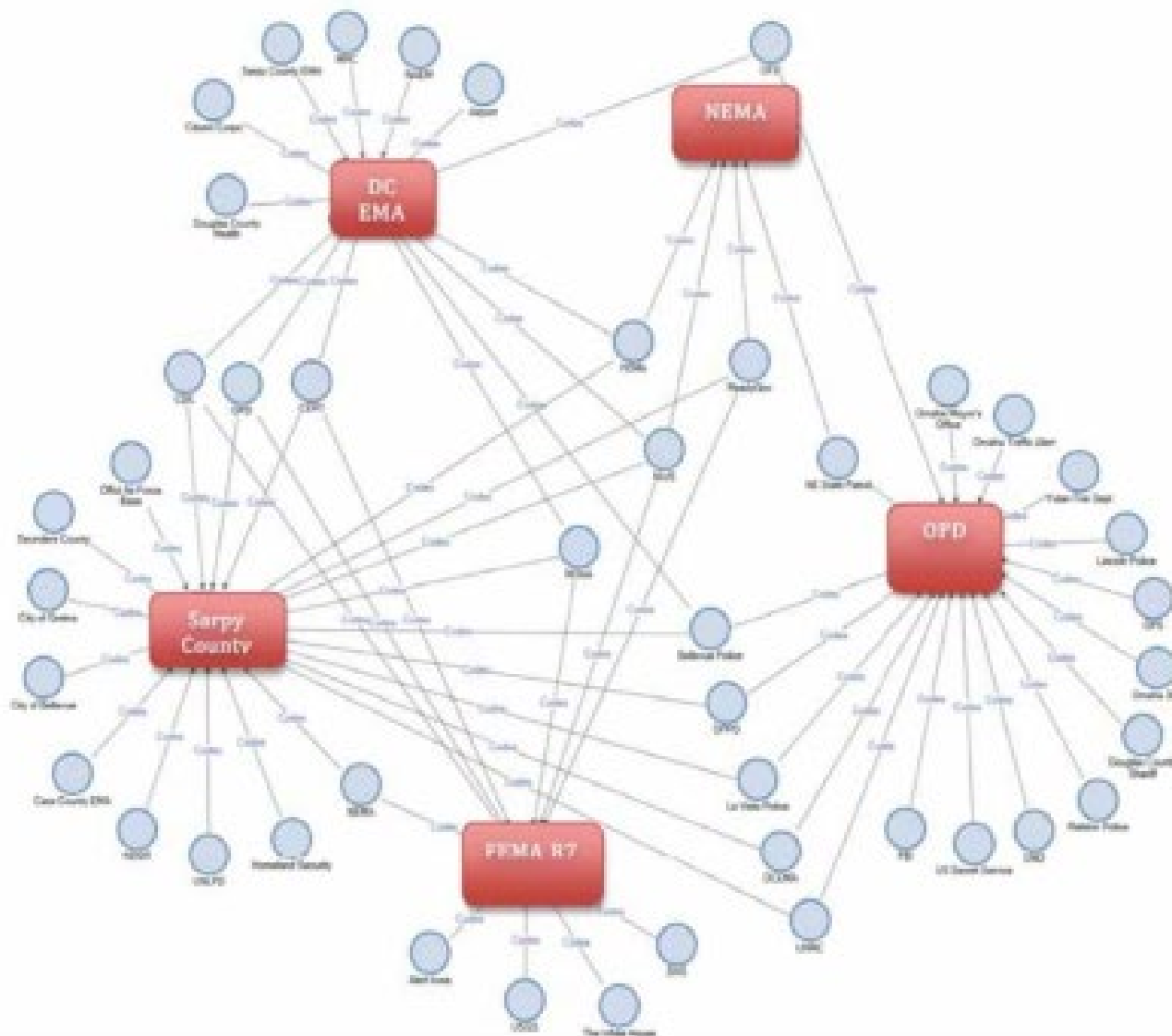
## Douglas County Emergency Management Agency (DCEMA) Connections made in Emergency Operations Plan (EOP) and on Twitter

Level of Governance	Location of identified connection			N
	Only In EOP	On Twitter	Only On Twitter	
		In EOP		
Federal level	0	3	10	13
State level	0	6	5	11
County level	9	4	18	31
Local Level (city, municipality)	0	11	18	29
Other	0	6	17	23
N	9	30	68	107



# FINDINGS 2: GOVERNMENTAL CONNECTIONS ON TWITTER

## Shared Twitter Connections by Agency



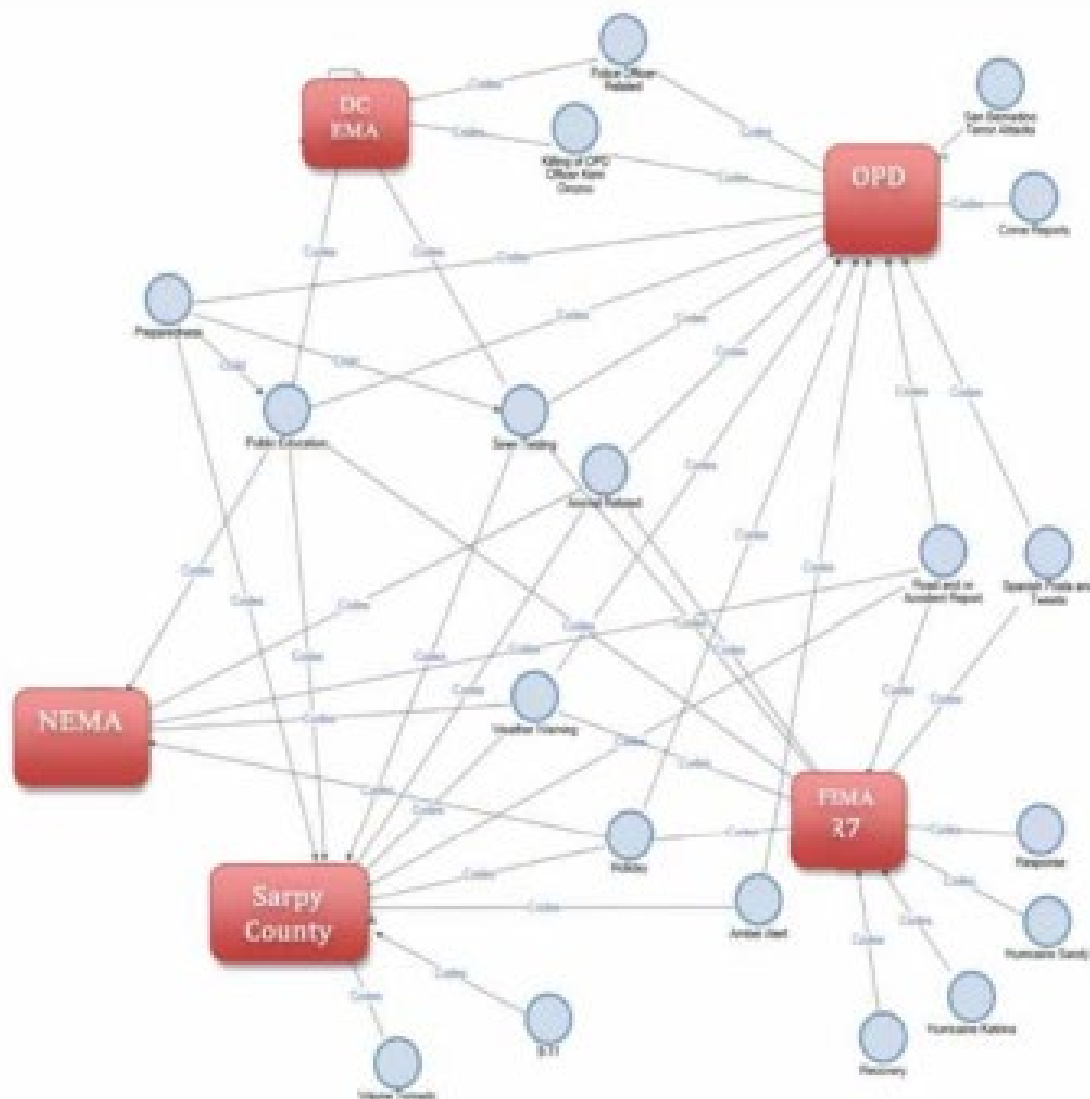
# FINDINGS 2: GOVERNMENTAL CONNECTIONS ON TWITTER

## Shared Twitter Connections by Agency



# FINDINGS 3: TOPIC OF POSTS

## Twitter Connections by Topic



# FINDINGS 3: TOPIC OF POSTS

The collage features several elements:

- Philadelphia OEM Post:** A tweet from Philadelphia OEM with a graphic of two lit candles (one green, one red) and the text "Put a freeze on..." and "keep candles 12 inches or anything to...".
- Sarpy County EMA Post:** A tweet from Sarpy County EMA dated 6 Apr 2015, titled "Get 'Petpared' for Disasters". It includes a list of actions for pet owners:
  - Download a pet preparedness mobile application (American Red Cross Pet First Aid App or the American Prevention of Cruelty to Animals App);
  - Build a pet emergency supply kit;
  - ID your pet with a collar and tag or consider microchipping;
  - Determine where you would evacuate with your pet (many shelters may not accommodate animals); or
  - Create a buddy-system with a relative or friend to care for your pets if one of you is away from home during an emergency.
- La Vista Police Post:** A tweet from La Vista Police dated 4 Aug 2015, announcing "National Night Out" at Central Park starting at 6 p.m., accompanied by a photo of a police officer interacting with a child.

At the bottom of the collage, there are four circular icons with labels: "Pet Preparedness", "Pet", "National Night Out", and "Community Events".

# DISCUSSION

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- Connection in Emergency Operations Plan
  - More agencies are connected to on Twitter than in the EOP alone
  - The informal connections found in this study on Twitter can encourage other agencies to seek out new relationships starting with their online links.
  - This can be accomplished with clear, thorough social media strategies.
- Governmental Connections on Twitter
  - The level of governance for an agency may influence the number of and types of emergency management related agencies connected.
  - Findings show that the state-level and federal-level agencies have the least amount of connections.
  - It is important to note that the frequency (and savviness) of use will also influence the number and type of agencies connected.
- Topic of Posts
  - Majority of the connected tweets were related to disaster preparedness information.
  - The surprising factors were that unrelated emergency messages were shared – seemingly in an effort to maintain citizen followers (e.g. animal and holiday related posts).
  - Another surprise were the Tweets sent in Spanish. These tweets were only disseminated at the FEMA regional level and the local first responder level.



# FUTURE TWEAKS

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- Frequencies
  - It is important to note that the frequency (and SM savviness) of use will also influence the number and type of agencies connected.
- Expand Collaboration Focus
  - Expand the scope of the study to include all intergovernmental connections during an active incident
  - Finally to expand to included cross-sector connections with private sector, non-profits, and community groups.
- Social Media Strategies
  - Assist emergency management practitioners in developing strategies that incorporate methods to connect with other agencies on Twitter. [Other research studies have shown that this particular topic is often neglected when EMA's have a working social media strategy]
  - The findings of this study, along with others, will assist in highlighting the strengths and weaknesses of policies that do not restrict the use of social media to 'online loudspeakers.'



# REFERENCES

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- Bennett, D. (2014). "How do Emergency Managers Use Social Media?" *Journal of Emergency Management*. March/ April 2014 Volume 12 (3).
- Bennett, D. (2017). Providing Critical Emergency Communications via Social Media Platforms: Cross-Case Analysis. *Routledge Handbook on Information Technology in Government* by (Eds.) Yu-Che Chen and Michael Ahn. Routledge.
- Forrer, J. J., Kee, J. E., & Boyer, E. (2014). *Governing Cross-Sector Collaboration*. Jossey-Bass: San Francisco, CA.
- Hu, Q., Knox, C. C., & Kapucu, N. (2014). What Have We Learned since September 11, 2001? A Network study of the Boston Marathon Bombings Response. *Public Administration Review*. 74(6), 698-712.
- Hughes, A. & Palen, L. (2009). Twitter adoption and use in mass convergence and emergency events. Paper presented at the 6th International ISCRAM Conference, Sweden, 2009.
- Panagiotopoulos, P., Bigdeli, A. Z., & Sams, S. (2014). Citizen–government collaboration on social media: The case of Twitter in the 2011 riots in England. *Government information quarterly*, 31(3), 349-357.
- Spradley, J. P. (1980). *Participant Observation*. Harcourt Brace Jovanovich: Orlando, FL.
- Starbird, K., & Palen, L. (2011). "Voluntweeters": Self-Organizing by Digital Volunteers in Times of Crisis. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, 2011.
- Sutton, J., Palen, L. & Shklovski, I. (2008). Backchannels on the front lines: Emergent use of social media in the 2007 Southern California fires. In proceedings of 5th Information Systems for Crisis Response and Management Conference (ISCRAM 2008).
- Waugh Jr., W. L. & Streib, G. (2006). Collaboration and Leadership for Effective Emergency Management. *Public Administration Review*. 66(131-140).
- Wukich, C. (2015). Social Media Use In Emergency Management. *Journal of Emergency Management*. Volume 13(4).



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- Thank YOU for listening.



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Take time to be kind and to say 'thank you.'

*-Zig Ziglar*



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