## 

DAT 530 Final Project Milestone Three

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The levels of granularity and sophistication will vary across visuals within each deliverable based on the data being utilized and across the deliverables themselves based on audience requirements. There are two variables which can be represented using multiple levels of granularity. The location of the severe weather events can be classified either at the state level or the county level. The levels that might be of interest for the timing of the events are month-by-month or day of the week. Exploring these variables across their levels of granularity and displaying the visualizations with the appropriate one or ones is critical to providing each audience with the most relevant information.

For the state budget office PowerPoint presentation, all levels of granularity could be of interest, but the medium is limited without interactive abilities. For this reason, exploring location data at both the state and county levels will have to be done on separate visuals and/or consecutive slides. This audience will be able to handle sophisticated information, but the most important thing will be to relate everything back to monetary terms and ideas. For the EMA dashboard, the analysts will be able to explore different levels of granularity on their own using interactive dashboard features. On the dashboard, it will be possible to view a map at the country or regional level and then to click into a particular state in order to see the same data being displayed at the county level. It will also be critical to provide the most effective charts for analysts to dig in to attributes such as damages and deaths aggregated across different concepts of timing including month-by-month and day of the week. This means both dimensions should be incorporated on separate charts and there should be filters for the analysts to configure and explore this information for various states and event types. For the general public, each piece of information should ideally be displayed at the most relevant level of granularity, which is often coarse-grained in this dataset. The general public will be most receptive to summary statistics that calculate basic information about severe storm events and to basic charts that display information on a single variable. There should not be any unnecessary level of sophistication when it comes to the visuals on the one pager.

Each deliverable will require a unique formatting style based on the medium, level of sophistication, and other audience needs. For the state budget office, the PowerPoint presentation should include slides that contain individual visuals as well as slides that contain key information and takeaways in bullet points. Another effective approach in a PowerPoint presentation is to identify and point out the main questions the audience should be asking themselves. The presentation should be done with a professional layout and font design. Titles and subtitles should be well-thought out to summarize each slide. Outline format should be used for bullet points to highlight the relationship of each point to the overall message.

For the EMA, the dashboard should contain as much information as is reasonable in order for any analyst to be able to begin working with the visuals, regardless of their experience and familiarity with the dataset. There are many ways to add subtext and notes to dashboards that provide the audience with a sense of direction towards what they are looking at. This type of information is crucial to ensure that the audience understands not only each visual individually, but how they can work together logistically and interactively. It cannot hurt to include everything on the dashboard for clarity purposes, between plot axes, values, and labels.

For the general public, the one page document needs to immediately capture the reader’s eye. The keys to accomplish this are interesting titles, color schemes, effective visuals, and a clear sense of flow. When a member of the general public comes across the one pager, they will likely read the main title and try to identify the source of the information. These two components should provide a reason for the individual to continue reading. The subtitles of each section need to explain the questions being answered, because the audience might not know right away themselves. The visuals, whether summary statistics or charts, should stand out and be simple enough for any potential reader to understand. Finally, one of the most important formatting elements of the one pager will be the logical sense of flow. Each of the visuals should provide a pathway to the subsequent visual. This will improve comprehension and increase the effectiveness of the document.

The final aspect of the data visualization strategy planning is to assess feedback mechanisms for each audience that can reveal unexpected comprehension or technical problems. For the state budget office presentation, the most effective feedback method is within the presentation itself. This means that the audience is available in person, and their feedback should be heard and addressed immediately. To accomplish this, there should be opportunities throughout the presentation for discussion and input from the audience. Additionally, there should be open time at the end of the presentation to receive any outstanding questions and concerns. This feedback mechanism is extremely valuable because not only will it ensure everyone is on the same page before decisions are made, but it can also lead to further research that might uncover unknown opportunities for future presentations and budget allocation projects.

For the EMA, there should be one feedback mechanism available while the analysts are working with the dashboards and another afterwards. The first feedback mechanism could be a dedicated support person who is responsible for recording, managing, and responding to analysts’ questions and concerns while they are working with the data. This person should be responsible for communicating the most common and insightful questions to the individuals who developed the dashboard, so that they can incorporate the analysts’ feedback if they believe it can or must be done to improve the dashboard. Additionally, although the dashboard will be continuously utilized and updated with live data, it will be helpful to gather feedback from analysts who have become familiar with the dashboard and dataset. A survey could be emailed to analysts one month after they initially accessed the dashboard. It would be a quick survey that could include ratings on dashboard performance, capabilities, and issues, as well as spaces to provide short answers to questions about information they have been able to gather and ways the dashboard could be improved. Since the first feedback method is more likely to receive information about problems and issues, it should work hand-in-hand with the second feedback method, which is an opportunity to hear positive features and components of the dashboard from analysts with experience.

For the general public, one potential feedback mechanism is embedding a QR code that links the reader to a short online questionnaire where they can test their severe weather event preparedness. The reader would open their camera phone and place it over the QR code and be brought directly to a webpage that contains questions about basic severe storm protocols and the importance of individual preparedness. To improve response rates, the reader could be offered a coupon or voucher for completing the questionnaire. One challenge with this feedback mechanism is that although QR codes are not too advanced, technically challenged individuals or those without smartphones would not be able to participate, and they might be the ones who are more likely to be unprepared in the case of a severe weather event.