Final Project Proposal- Geog 575 Sonja Sebree

1. **Persona/Scenario**

The Texas Association of Amateur Tornado Watchers (TAATW) is a group of volunteers that actively engage in promoting safety preparedness before extreme weather events. Description: The "Texas Twister Watchers" group would like to have a custom, interactive GIS viewer to show locations of historical tornados during group meetings. The users in this group are competent geospatial professionals consisting of active/retired geographers, meteorologists, emergency response officers, and guest professional storm chasers. These professionals are proficient in utilizing more advanced tools, but they would prefer an intuitive, minimal yet informative interface that doesn't require additional training. There may be secondary level volunteers who are interested in events, but not necessarily in the detail of the professional users. I think that growing up in the Midwest Tornado Alley region inspired me to start investigating storm events. Each region has an approximately 3-month window of events that range from minor EF-1 to major EF3-4 events.

Key Needs: The Texas Association of Amateur Tornado Watchers (TAATW) will hold an event to simulate emergency response for the upcoming 2024 tornado season in the state. They would like to select two of the Texas Emergency GIS Region Management Team's (EGRT) areas to simulate recent tornado impacts of significance to visualize the county and area response in geospatial terms. The group will emphasize the need for early warning systems for community members to rebuild a resilient response network.

The TAATW would like to have your team generate a recent five-year window of tornado activity showing past locations by county, with an interactive map with a slider for each year of the 5 years of tornado activity in Texas from 2015-2020. The drop-down tool will allow the selection of one or more of the six EGRT Regions. Each historical tornadic event will have an interactive popup that contains basic information on the Date, EF Rating, Property Damage Cost in Dollars, injuries, Fatalities, and County location. Calculating a county polygon of standardized density per 1,000 square miles (2015-2020) will lend itself to users discovering which areas have the most significant damage. The base maps of Open Street Map for roads/urban areas, ESRI World Imagery, World Shaded Relief and Topo Maps with Contours can be utilized for direct field use.

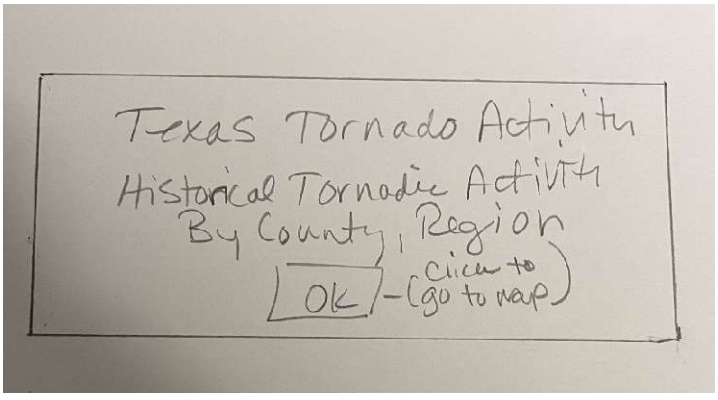
2. **Requirements Document**

Representation		
Title of Layer	**Description of Source**	**Description of Symbolization**
Basemap	ESRI	World Shaded Relief
Basemap	ESRI	World Imagery
Basemap	ESRI	Topo maps with Contours
Basemap	Open Street Map	Standard Basemap
Texas Emergency GIS Response Regions	TXEGRT(Regions 1-6)	Texas Disaster Mapping

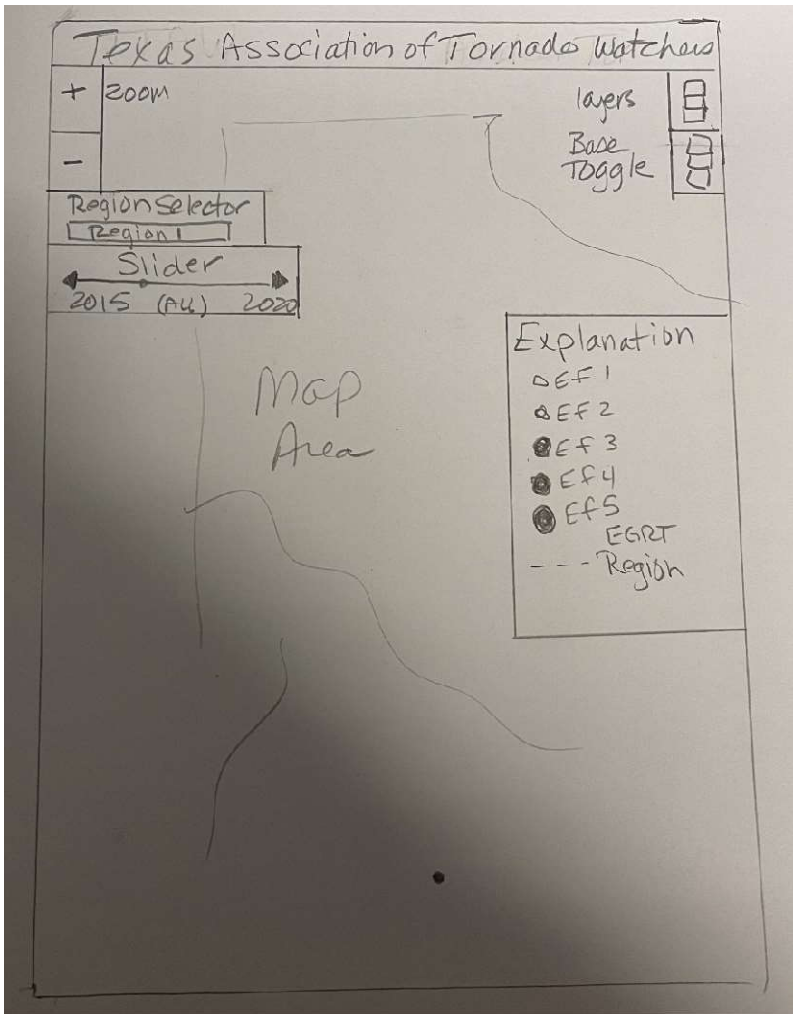
Tornado Data Points	NOAA	Point data from CSV converted to shapefile or Geojson
USA State Boundaries	Natural Earth	Geojson polygon
USA County Boundaries	Natural Earth	Geojson polygon

Interaction		
Function Title	**Coding by Operator and Operand**	**Description of Behavior**
Pan and zoom	Pan, Zoom	User can pan across the map and zoom in/out.
Basemap Toggle	Overlay	User can toggle between basemap options.
Query Counties	Query, Filter	User can select a specific county to view instead of manually panning or zooming to an area.
Year Slider	Reexpress	User can select a year to view tornadoes from a specific year.
Layers Button	Overlay	User selects data to add or remove from map.
Tornado Selection	Retrieve	Click on a tornado point to learn more about it. Mouse click popup

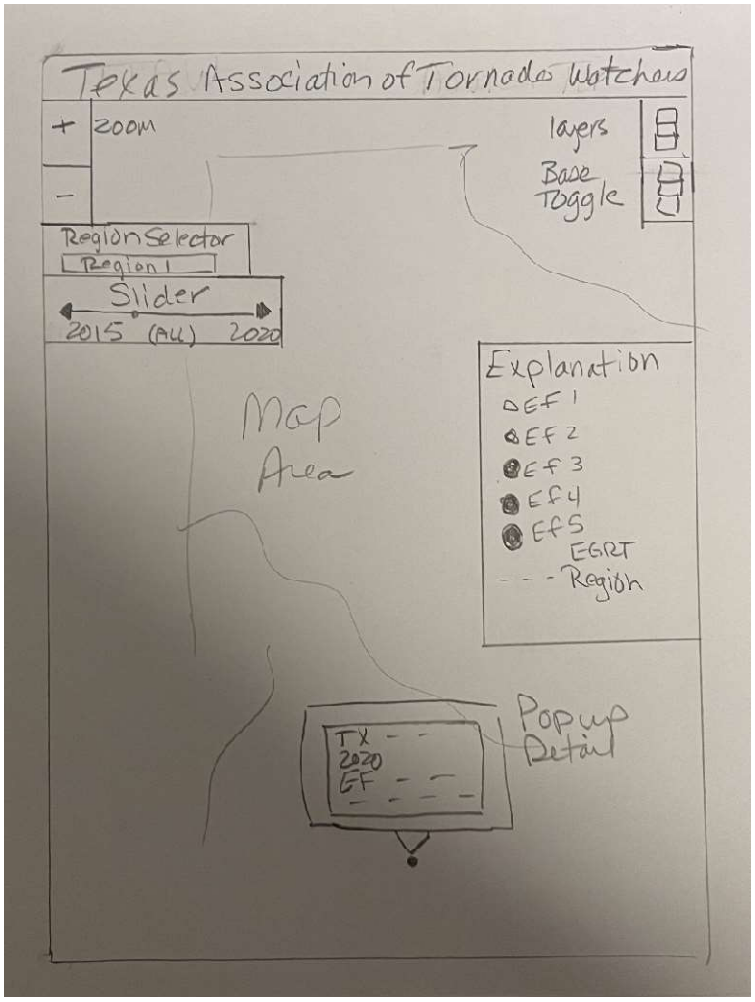
3. Lo-Fi Wireframes



1. Splash Screen/Disclaimer



2. Map after splash screen closes.



3. Map with popup window for tornado details.

Data:

NOAA Storm Prediction Center: https://www.spc.noaa.gov/wcm

US Census Bureau Administrative Cartographic Boundary Files Cartographic Boundary Files - Shapefile (census.gov)

Texas Emergency Response Team (EGRT) Home (texasegrt.org)