

Appendix C

MODEL GRID COORDINATES

Figure 2–16 illustrates grid points spaced 0.05 miles (264 ft, 80 m) apart throughout Joplin. Each grid point (X, Y) was given corresponding latitude and longitude values based on the beginning of the tornado track (tornado center). This location was different than the initial tornado touchdown location. In projected coordinates (North American Datum (NAD) 1983 – Missouri West Federal Information Processing Standard (FIPS) 2403 – Feet) used in the ArcGIS layer, the initial tornado center corresponds to $(X_c, Y_c) = (2770845 \text{ ft}, 323676 \text{ ft})$. In latitude and longitude these coordinates are $(X_c, Y_c) = (37.0557, -94.5612)$, i.e., 37.0557 degrees North, 94.5612 degrees West. The values of X_c and Y_c were set as $X = 0$ miles and $Y = 0$ miles in the computer program responsible for translating the tornado through the grid. Although the tornado was initialized at $X = 0$ ($X = 2770845$), the X value corresponding to the first set of grid points was set at $X = 0.65$ miles (or $X = 2770845 + (0.65)(5280) = 2774277 \text{ ft}$). This X value corresponds approximately to Schifferdecker Avenue. The choice of this particular value of X to start the grid points was based on using aerial photos to estimate when the tornado became one entity (i.e., multiple vortices not apparent) based on tree fall patterns. For ease of explanation, the X and Y values used in this section will be referenced from $X = 0$ miles and $Y = 0$ miles.

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