

HYPOTHETICAL CHEMICAL ATTACK ON BAPTIST CHURCH IN ESSEX COUNTY

Background:

Violent events that have occurred against areas of worship such as the 2019 attack on the Poway Synagogue, mixed with new developments in chemical weaponry usage by terrorist organizations bring the need for assessments and plans for potential attacks on U.S. soil

Purpose:

- Analyze the chemical zone and identify critical lifelines that are vulnerable to the attack's aftermath
- Develop a precise plan for those within or effected by the chemically effected buffer, providing a cross-jurisdictional model for proper evacuation protocols

Obtained Data:

- Essex County Evacuation Routes
- Wind Speed and Direction NOAA Data from New Jersey Airports
- Hospitals and law enforcement offices of NJ

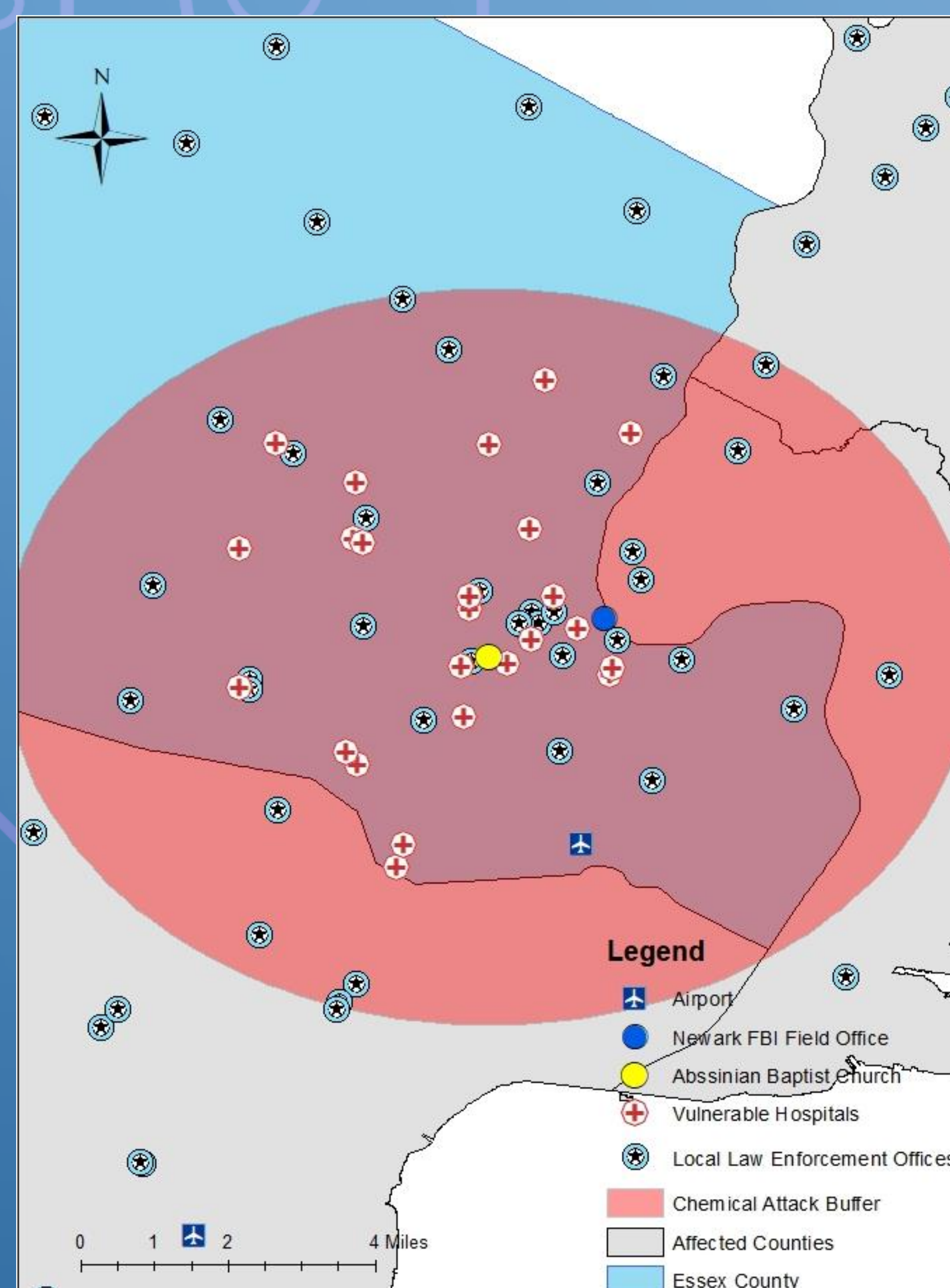


Figure 1: The five-mile chemical attack buffer around the Abssinian Baptist Church shows the affected hospitals and law enforcement agencies from the plume.

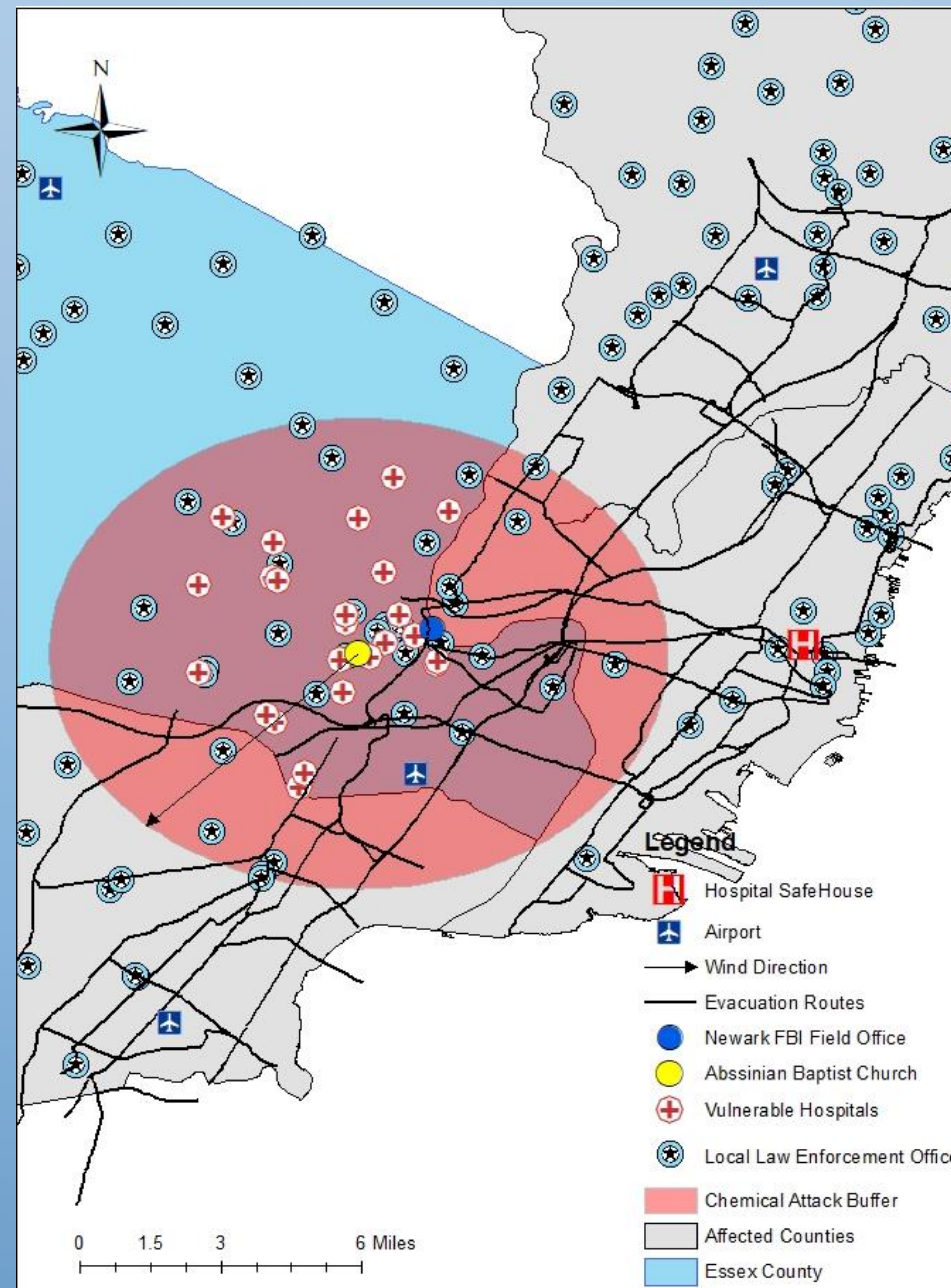


Figure 3: Shows Essex County attack buffer along with its affected neighboring counties. With the wind direction going towards the southwest, an evacuation route to a local hospital is developed, directing traffic east. This identified hospital will serve as a safehouse for those effected.

Methods:

- Create buffer around church and locate hospitals and law enforcement offices (Figure 1)
- Locate airports and use NOAA data to identify wind speed and direction for each of the 15 locations (Figure 3)
- Generate wind direction grid for the state based on data from nearest airport (Figure 2)
- Identify affected locations based on five-mile attack zone and wind direction (Figure 3)

Contact Information:
William Cavanaugh: sl172370@monmouth.edu
Geoffrey Fouad: gfouad@monmouth.edu

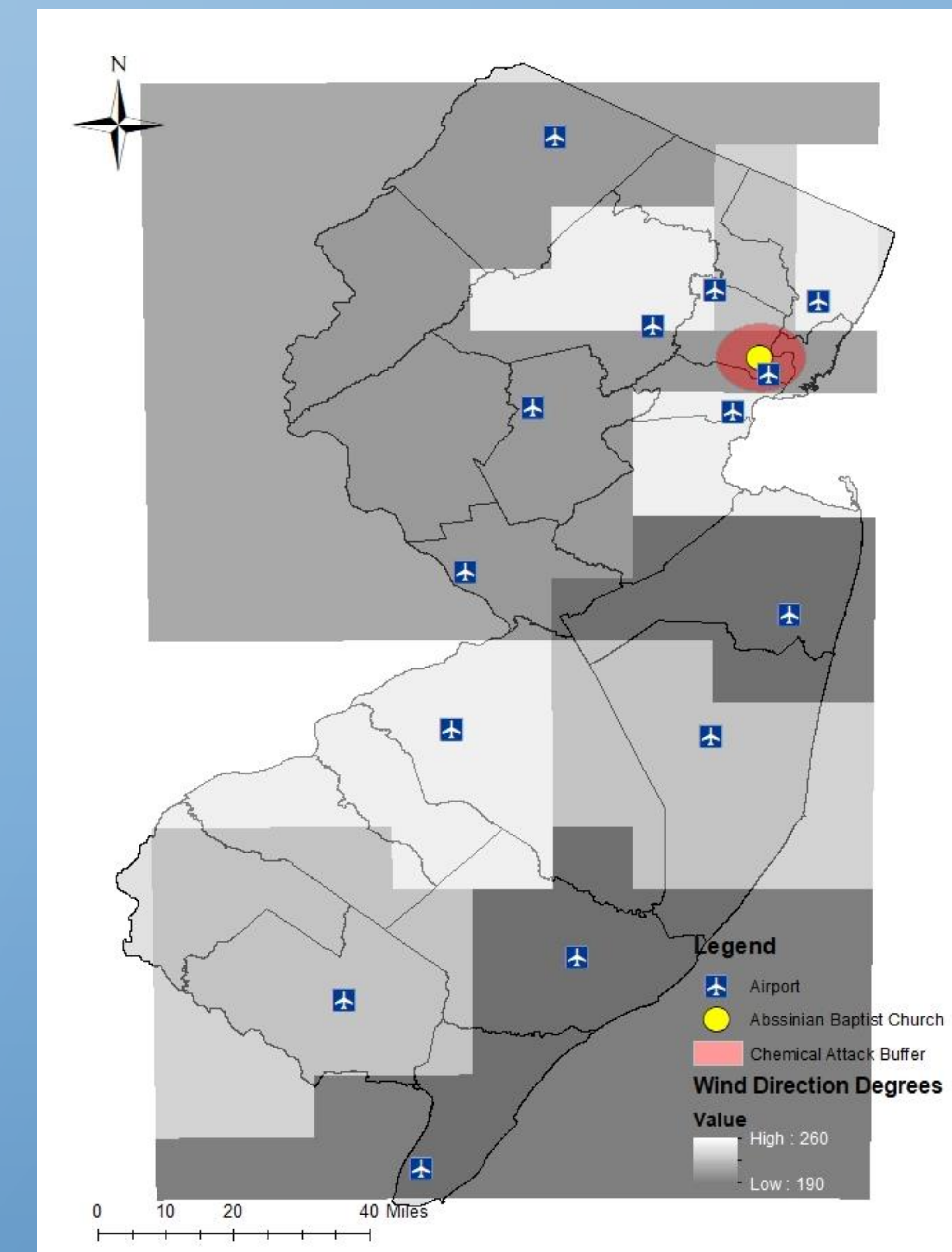


Figure 2: Wind direction grid in degrees moving clockwise from due north (0°). The prevailing wind direction at the attack site is to the southwest.

Outcomes:

- Due to the size of the buffer, this attack requires a cross-jurisdictional operation
- Large amount of local resources such as hospitals and an FBI field office will be unable to function due to its exposure to the chemical
- Safe zone established to the east, opposite of the prevailing wind direction to the southwest (see hospital safe house in Figure 3)
- Deploy law enforcement from unaffected areas outside the attack zone and from the north and east.