

**AROOSTOOK COUNTY HAZARDOUS
MATERIALS EMERGENCY RESPONSE
PLAN**

Attachment 9

**MANUAL METHOD FOR ESTIMATING THE
COMMUNITY AREA LIKELY TO BE ADVERSELY
AFFECTED BY THE DISPERSION OF A
CHEMICAL GAS/VAPOR**

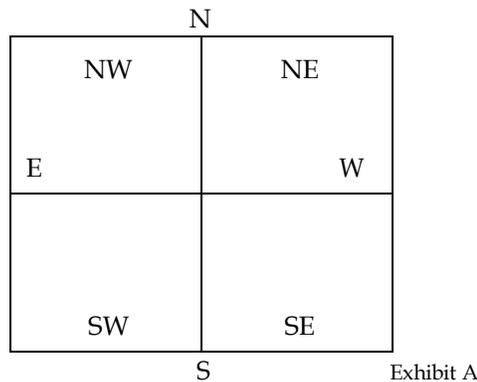
MANUAL METHOD FOR ESTIMATING THE COMMUNITY AREA LIKELY TO BE ADVERSELY AFFECTED BY THE DISPERSION OF A CHEMICAL GAS/VAPOR

Utilization of the following step-by-step procedures will identify a downwind vulnerability zone where evacuation and/or in-place shelter protection measures may be necessary.

STEP 1. (Preparatory [before an emergency release event occurs] - Obtain a municipal map at a scale of 1" equals 1,000 feet. For practical purposes, map size scales should not be less than 1" = 1,000 feet and should not be greater than 1" = 2,000 feet.

STEP 2. (Preparatory) - Obtain a clear sheet of plastic or acetate with minimum dimension of 12" X 12" and prepare a template as follows:

1. Locate the center and mark appropriately.
2. Draw one continuous line across the entire width of the template through the center point. This line will represent the East/West axis.
3. Draw a second continuous line lengthwise, through the center point, perpendicular to the first line (the east/west axis). This line will represent the North/South axis. Your completed template should now be divided into four equal quadrants (or sectors) and should appear as it does in Exhibit A.



STEP 3. (Emergency Response) - A chemical release emergency occurs necessitating the determination of the downwind vulnerability zone.

1. Set the template on the map with the center point at the exact location where the chemical release is occurring. Be sure to orientate the north/south axis line of the template with the corresponding north directional symbol on the map.

STEP 4. Identify the vulnerability zone (prior to impact from wind).

1. Using the center point, draw a circle with a radius equivalent to the initial isolation zone distance established by the Fire Service Incident Commander. The minimum, initial isolation distance will always be 500 feet or the distance stipulated in guidance response manuals. This information can be found in the green section of the D.O.T. Emergency Response Guidebook).

STEP 5. The next and final step is to determine and position the center, downwind line.

1. Obtain the current wind direction and speed from an accurate local authority. *Access to an automated weather station capable of giving wind direction in compass degrees will increase plotting accuracy.*
2. Draw in the center downwind line in the exact direction the wind is blowing, starting at the center point and drawing outward to the correct distance. The length of the center line will have to coincide with the scale of the map you are using as well as the recommended downwind distance derived for the specific chemical released or the speed at which it will be carried downwind. ***NOTE: Remember that the width of the area at the furthest point downwind, in which people are at risk of harmful exposure, is the same distance as the length of the center downwind line.*** See Exhibit B on page 3.
3. For practical purposes, the vulnerability zone (protective action zone) will always appear as a square. This square should further be divided into 4 equal quadrants (or sectors) for ease of organizing and implementing protective actions.

