

July 11, 2007 Flash Flooding in Central Vermont - Poster Session

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A strong cold front crossed the Burlington, VT County Warning Area during the afternoon of Wednesday July 11, 2007 that caused thunderstorms with torrential rainfall to train over the same areas. Damaging flash flooding occurred in Barre, VT, where the downtown area became submerged under several feet of water. Surface to 600 mb air mass convergence along and just east of the Green Mountains was the main causative factor as southeasterly flow off the Atlantic met southwesterly flow ahead of the surface front. Thunderstorms quickly developed along and east of the Green Mountain spine within an axis of instability, moisture, and convergence. This axis of convergence remained nearly stationary for almost six hours as the surface cold front slowly approached from Western New York. As thunderstorms began to train along the eastern slopes of the Green Mountains, the NWS issued flash flood warnings. One-hour precipitation estimates from radar were as high as 3 inches in the hardest hit areas. When the front finally crossed the region, areas along the eastern slopes of the Green Mountains had rainfall totals ranging from two and a half inches to almost five inches in Randolph, VT. Surface and upper air observations, radar data, and model output are presented to examine how the causative factors combined to produce this severe flash flood event.

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