Extreme Wind in the Intermountain Southwest

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MOST COSTLY WIND EVENTS

	Cost (millions $)	City	Date	Type of Event
1	350	Lakewood	July 20, 2009	Thunderstorm
2	170	Salt Lake City	August 11, 1999	Tornado
3	160	Phoenix	August 14, 1996	Thunderstorm
4	50	Las Vegas	July 18, 1994	Thunderstorm
5	50	Phoenix	July 14, 2002	Thunderstorm
6	22	Phoenix	August 28, 2008	Thunderstorm
7	17	Boulder	January 16-17, 1982	High Winds
8	14	Las Vegas	August 8, 1989	Thunderstorm
9	10	El Paso	January 17, 1996	High Winds
10	10	Las Cruces	Septmeber 13, 2006	Thunderstorm/ Tornado

Total **$853 MILLION**

BUILDING RESILIENCE

A consortium of Arizona state agencies and the National Weather Service have developed the Pull Aside-Stay Alive campaign and website, which contains guidance for drivers. A mobile phone "app", developed by the University of Arizona, provides dust storm alerts and safety tips.

Denver's outdoor warning siren system, updated between 2012 and 2014, includes 86 sirens and extensive online public information regarding public safety practices and shelter.

Tucson Electric Power (TEP) has implemented a process of "looping" in their power lines, to recirculate power from a downed pole to others. This keeps one utility pole from being a single point of failure and bringing down the entire system. Such measures are critical from a public health standpoint, because summer power outages can leave vulnerable residents without the ability to cool their homes.

Dust on Snow

During the winter and spring, wind-blown dust can settle on mountain snowpack. Since the dust is far darker than snow, it absorbs more heat from sunlight and can hasten snowmelt and runoff. Studies show that these dust-on-snow events reduce the volume of runoff, and move the peak of spring runoff at least three weeks earlier, in the upper Colorado River Basin. This could be detrimental for cities that rely solely on the water stored in snowpack for their water supply, like Aspen. Disturbance of soil in lowland areas is an important factor in setting up substantial dust-on-snow events, making it possible to reduce the amount of dust settling on snow through improving land-use practices—currently an area of extensive research.

"The fact that three of the last five years through 2013 have seen 'extreme' dust loading may indicate a trend towards increasing alteration of hydrology."

*Sources: Lukas, J., N. Doesken, I. Rangwala, K. Wolter. 2014. Climate Change in Colorado: A Synthesis to Support Water Resources Management and Adaptation. A report for the Colorado Water Conservation Board. University of Colorado Boulder.