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## ***News Release***

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### **CONSERVATION AGENCY URGES AWARENESS OF COLLAPSIBLE SOILS**

Have you wondered while traveling between Albuquerque and Santa Fe why the road suddenly becomes bumpy and wavy near Algodones? Have you noticed the same thing on stretches between Espanola and Taos? Ken Scheffe, NRCS state soil scientist explains the reason in a paper he presented to the Geological Society of America earlier this fiscal year. The culprit is collapsible soil.

Collapsible soils are common throughout the Rio Grande Valley in central New Mexico. Significant losses have occurred for those who unknowingly build on collapsible soils as well as significant cost increases have been incurred by those who are aware of the hazard and take remedial measures to develop the site.

New Mexico is undergoing dramatic urban development and expansion of its cities and communities beyond the Rio Grande Valley terraces and flood plain onto the alluvial fans from the mountains. The alluvial fans upon which urban development is occurring also happens to be the environment of collapsible soils.

The arid climate seldom wets the surface soils to a depth of more than a few centimeters. Intense very brief thunderstorms occurring during the summer monsoon season are greatly intensified by the uplift of mountain ranges. Resultant flash floods carry large sediment loads from the sparsely vegetated mountain foothills onto the alluvial fans. The highly porous structure of the mudflow or debris flow remains intact and is often further buried. Calcium carbonate in the soil provides cohesion of the clay and silt minerals to sand grains giving considerable strength to the soil when dry.

The collapse of these soils is induced when water is introduced and reduces the soil strength. This water is introduced during urban development when arroyos are intercepted by flood control structures or canals to protect homes. Roads and home sites are graded into the landscapes exposing cuts up to several meters in depth. Irrigation systems are installed to support landscaping. Wells and septic systems are utilized if the reach of municipal water and sewage services is exceeded.

Water entering the soil through irrigation and waste disposal exceeds that than realized during the formation of the native landforms and soils several fold. Rainfall runoff which seldom occurred before development is concentrated by impermeable surfaces such as roofs, driveways, and streets and drains into landscaping, roadside ditches and low spots

permeating several tens of meters in the coarse textured soils.

Then when collapse occurs it is transferred to the soil surface with devastating effect upon structures. Up to one meter or more collapse has been observed.

Scheffe's message in his paper was that creation of awareness and recognition of the expression of the hazard and remediation measures are important in preventing future losses.

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