

---

**AWRA 2011 ANNUAL WATER RESOURCES CONFERENCE**  
**Albuquerque, New Mexico**

**November 7-10, 2011**

**Copyright © 2011 AWRA**

---

**DECENTRALIZED GROUNDWATER RECHARGE SYSTEMS**  
**USING ROOFWATER AND STORMWATER RUNOFF**

Daniel B. Stephens\*, Mark Miller, Stephanie Moore, Todd Umstot, Deborah J. Salvato

**ABSTRACT:** Stormwater capture for groundwater recharge in urban areas is usually conducted at the regional level by water agencies. Field and modeling studies in New Mexico indicate stormwater diverted to retention basins may recharge about 50% of precipitation that falls on the developed area, even in dry climates. Comparable increases in recharge may be expected at homes, subdivisions or commercial properties with low impact development (LID) technologies for stormwater control that promote recharge over evapotranspiration. Groundwater quality has not been significantly impacted at sites that have been recharging stormwater to aquifers for decades. Distributed recharge systems may be a good alternative to centralized regional facilities where there is limited land for constructing spreading basins or little funding for new infrastructure. LID technologies borrowed from stormwater managers are important tools for groundwater managers to consider to enhance recharge.

---

\* Principal Hydrologist, Daniel B Stephens & Associates, Inc., 6020 Academy Rd., NE, Suite 100, Albuquerque, NM 87109 USA, Phone: 505-822-9400, Fax: 505-821-2313, Email: dan.stephens@dbstephens.com