Glossary

Air vent—a screened opening above the elevation of a water tank's supply point designed to prevent an implosion caused when a large quantity of water is rapidly removed from the tank.

As-built—documentation that shows how every part of a cistern system fits together. Ideally, this documentation would have photographs and illustrations of all of the system components and a written narrative that describes each piece of the system, how it works and how it fits together as a whole.

Auxiliary supply—an alternative to harvested rainwater for watering landscape plants. Typically, this water would come from a well or from a municipal water system. An auxiliary supply is not recommended by the New Mexico Office of the State Engineer.

Berm—a bank of earth formed to direct the flow and/or collect rainwater. A berm placed on the downhill side of a plant is an effective way to passively harvest stormwater and encourage the water to slowly percolate into the soil.

Caliche—a zone of virtually impenetrable calcium carbonate or other carbonates in soils of semiarid regions (such as New Mexico). A layer of caliche can sometimes be as difficult to dig through as concrete.

Canale—a short, narrow trough that protrudes through the parapet of a flat roof and directs water onto the ground below.

Collection surface (Catchment surface)—the surface from which rainwater is captured, usually a roof.

Check dam—a low barrier placed perpendicular to the flow of water within a drainage area (such as a small natural ditch or arroyo) designed to slow the flow of water to prevent erosion and encourage water infiltration. A check dam should be low enough to allow water to spill over it during significant storm events.

Check valve—a mechanical device which allows fluid to flow through it in only one direction. Check valves work automatically and most are not controlled by a person or any external control.

Cistern—a storage tank for collected precipitation. Cisterns can be aboveground, partially buried or completely buried below ground. As used in this manual, cistern system also refers to an entire roof-reliant landscape irrigation system.

Compost—a soil amendment made from organic matter (leaves, grass clippings, vegetable scraps, etc.) that has been decomposed. Compost is an important ingredient of healthy soil.

Conveyance system—the conveyance system channels water from collection surface areas to storage tanks. These systems can include gutters, downspouts, pipes and other components.

Daylight pipe—an overflow pipe from a cistern with an outlet into the open air. A daylight pipe distributes overflow water from the cistern to the "daylight point" at ground level in the landscape, preferably near plants.

Delivery point (Supply point)—the point where conveyed water reaches a cistern for storage. The delivery point is the last step in the rainwater conveyance process.

Distribution system—the distribution system delivers water from the storage tank(s) to the landscape. This system can be as simple as a valve and a hose or can include pipes, a pressure tank, drip tubing, drip emitters and other components.

Downspout—a pipe for conveying rain water from a roof or gutter toward a cistern. Downspouts efficiently convey water along a vertical drop, typically from a pitched roof.

Drain box (Catch basin)—a collection box for water, typically located underneath a canale. Water collected by the drain box flows through conveyance pipes to a cistern.

Drip emitter—a device that delivers irrigation water at low flow rates, typically measured in gallons per hour (gph) or liters per hour (lph). Drip emitters efficiently apply water directly to the soil near plant root zones.

Drip irrigation—a method of watering plants that maximizes water efficiency and minimizes water waste and evaporation. Water is applied to the root zone of a plant at a slow rate (e.g., two gallons per hour) that enables the soil to absorb moisture without creating runoff.

Dripline—the edge of the leaf canopy of a tree, shrub or plant, which is the ideal area to deliver water to a plant's root zone.

Erosion—wearing or washing away of soil by natural forces, primarily wind or water.

Evapotranspiration (ET)—the process by which a plant loses moisture, which is a combination of evaporation from the soil and plant transpiration (moisture released to the air by plants). ET rates (coefficients) increase in warmer weather, which is why plants need more water in the summer than in the winter.

Filter—any device used to screen dirt and debris from water.

Finished grade—a predetermined line indicating the proposed elevation of the ground surface around a structure or in a completed landscape.

First-flush device (First-flush diverter)—a device that diverts the first water running off a collection surface, preventing it from entering a cistern. The "first flush" of water contains the most debris. The most common type of first-flush device is a length of capped pipe that captures the initial flow of water (and debris), while allowing the cleaner water to flow into the conveyance system.

Float switch—a balloon-like device that floats on the surface of the water in a tank for the purpose of turning a pump on or off. When the water level in a cistern reaches a certain (low) depth, the float switch drops into the "OFF" position, thus turning off the pump. Float switches can prevent pumps from burning out when their associated cisterns are empty. Float switches are also commonly called pump-down switches.

Foot valve—a suction valve or check valve at the lower end of a pipe.

French drain—a drainage trench filled with gravel or stones. A French drain is a simple and effective way to encourage water infiltration and prevent water runoff and soil erosion.

Funnel drain—a device used to catch water that falls from a canale. A funnel drain directs roof water through a rubber or vinyl liner into a below-grade box drain. A top dressing of gravel or river rock covers the liner to protect it from degrading in the sun and hides the drain from view. The gravel also acts as a filter, preventing mulch, soil and other particulate from being conveyed toward the cistern.

Gabion—a wire-wrapped check dam typically filled with stone.

Gutter—an open channel, or trough, that directs roof water along roof lines usually toward downspouts. Gutters are almost always associated with pitched roofs.

Gutter guard—a screen, typically placed in a gutter at the entrance to a downspout, to prevent leaves and other large debris from being conveyed into a cistern. (Also commonly known as leaf screens or leaf catchers.)

Hardscape—masonry work, woodwork and other non-plant elements of a landscape. These typically include walkways (concrete, brick, stone, etc.) walls, fences, patios, and so forth.

Inline pump—a pump used to draw water from a cistern to a water delivery system (irrigation system). An inline pump is located along the water line (unlike a sump pump, which must be submerged in water).

Irrigation controller—an electronic device that automatically turns an irrigation system on and off. Irrigation controllers range from battery operated one-zone timers to high-tech devices that offer a wide range of programming options, including controlling an irrigation system from a computer inside a house (or halfway around the globe via the internet).

Leaf screen (Leaf catcher)—the first level of defense against allowing particulate into a cistern. Leaf screens are usually placed in gutters at the entrance to a downspout, although some types are designed to be placed at the bottom of a downspout. These devices allow roof water to flow into the conveyance system while filtering out the larger pieces of debris. Leaf screens are also known as gutter guards.

Level reader—a device used to determine how much water is in a cistern. A digital level reader typically measures the water in the tank as a percentage of the cistern's total capacity. On the low-tech end of the spectrum, a long stick can also serve as a level reader. The stick can be inserted into the cistern to measure the depth of the water.

Microclimate—a highly localized climate that is usually created by the shelter of a wall, the shade of a tree or by another landscape feature. On the sunny side of a wall, the microclimate would be hotter and potentially drier than in the rest of the site. On the shady side of a large boulder, the microclimate would be cooler and is often wetter.

Mulch—a covering for the soil surface that protects it from the evaporative effects of sun and wind. Mulch can be plant material such as bark, straw or wood chips; mulch can also be gravel or another non-organic material. Mulch reduces water lost to evaporation, increases water infiltration by slowing runoff, reduces soil erosion, inhibits weeds and moderates soil temperature.

Overflow pipe—a pipe located near the top of a water storage tank (cistern) through which water can flow when the tank is filled to capacity. Ideally, an overflow pipe should lead to landscape plants such as trees that can benefit from additional water.

Perennial plant—a plant whose life cycle is longer than two years.

Potable water—water that is safe for human consumption also known as drinking water.

Pressure tank—a small tank or chamber that provides water under pressure for delivery to a drip irrigation system. A pressure tank is important because drip irrigation requires reasonably constant water pressure in order to function effectively. For most drip systems, 15 to 30 PSI is a good pressure-tank setting.

Pump tank—a separate, smaller water storage tank used temporarily to pump roof water to the system's main cistern. The additional pump, tank and float switch associated with this kind of system significantly complicates a roof-reliant landscaping system and can unnecessarily increase its long- and short-term costs.

Psi (pounds per square inch)—a unit of measure (literally the amount of pressure applied to each square inch of surface) used to describe the water pressure inside pipes, tanks, etc.

Rain chain—a chain connected to the end of a canale that helps direct rainwater downward to a funnel drain or catchment box. A rain chain increases the efficiency of harvesting rainwater from a flat roof, and it can help eliminate water freezing in cold-weather situations.

Roof-Reliant Landscaping™—a landscaping method that uses plants which can survive on local precipitation, supplemented with rainwater harvested from the rooftops of onsite buildings (houses, sheds, awnings, etc.)

Roof-washer—a general term used to refer to any kind of precistern filtration technique, such as a first-flush diverter.

Runoff—water that flows over a surface when more precipitation falls on it than the surface can absorb.

Sediment trap—a type of filter that separates sediment from water. The sediment settles to the bottom of the trap, while the clean water flows toward the cistern.

Serviceway (also known as the access way or manhole)—an opening above a cistern that provides access needed for cistern maintenance, including servicing the pump, float switch, level reader, vent pipe, water lines and electrical lines. It should remain locked for safety reasons when not in use.

Site plan— a detailed drawing of a property, showing the property lines and any structures that currently exist on that land (house, garage, fence, etc.) and where any proposed additions (cistern, conveyance piping, irrigation system, etc.) are to be located. A site plan is a bird's eye view of the property from above. The drawing should be done to scale (e.g., 1 inch on the plan is equal to 30 feet on the ground) and include a north directional orientation.

Soil type—a description of the composition of soil texture, which usually refers to the different sizes of mineral particles in a soil sample. Soil is comprised, in part, of finely ground rock particles (sand, silt and clay). In addition to the mineral composition of soil, humus (organic material) also plays a crucial role in soil characteristics and fertility for plant life. The ratio of soil particles to humus content determines soil type: sandy, loam or clay.

Sump pump—a pump that must be submerged in water in order to work. A sump pump is used to pump water from a cistern, pump tank or pumphouse.

Supply point (see "delivery point")

Swale—a small earthen dam or contour designed to direct and/or collect rainwater. A swale holds rainwater and allows it to infiltrate slowly into the ground.

Valve—A device that opens and closes to allow water to flow through pipes.

Valve box-- a box, typically recessed into the ground, in which an irrigation system's valves are located.

Water budget—A calculation of the amount of water needed to support a landscape, and/or a calculation of the amount of water that can be collected by a rainwater harvesting system.

Xeriscape/Xeriscaping (Waterwise landscaping)—A landscaping approach that uses plants capable of thriving in arid environments. ("Xeric" is derived from "xeros," the Greek word for dry.) Xeric plants that thrive in New Mexico's arid and semi-arid climates typically go dormant during drought conditions and perk up quickly after storm events.