



SAINT CHARLES
MISSOURI

PROJECT INFORMATION SHEET

Retention and Detention Basins

Precipitation that does not seep into the ground runs across impermeable surfaces to lower areas. As this water travels across driveways, roofs, streets, saturated lawns, parking lots and other surfaces, it picks up oils, trash, silt, pet waste, pesticides and fertilizers. The City of St. Charles' stormwater system includes ditches, pipes, inlets, manholes, outlets, culverts, bridges and basins to help control runoff and pollution. This system is maintained by the City of St. Charles Public Works Department and designed to help control urban flooding events by directing stormwater runoff into local creeks, streams and two different types of basins or ponds.

Stormwater basins are a common, conventional method for managing stormwater and runoff. Dry and wet basins are meant to collect stormwater runoff and slowly release it at a controlled rate. This prolonged release helps prevent downstream erosion, flooding and pollution. These basins also prevent the movement of pollutants to area creeks, rivers and lakes as sediment and other associated pathogens, nutrients and metals settle out of runoff and into the structures bottom.

Wet or retention basins hold back water similar to how water is held behind a dam. Retention basins or ponds have a permanent level of water which varies based on the amount of precipitation and runoff from contributing areas. Retention basins hold stormwater for longer periods of time. Maintaining a constant level of water in the basin discourages resuspension of the pollutants and keeps deposited sediments at the bottom of the basin. This allows longer biological interactions to occur which can assist with improving water quality.

A detention basin or pond is a low lying area designed to temporarily hold a set amount of water, for a set amount of time. These basins vary in size and shape, but they function primarily to reduce peak stormwater runoff flows. Although similar in appearance to a retention basin, detention basins are typically dry except during, or immediately following a rain event or snow melt. Detention basins or ponds are common in the City of St. Charles and serve as an integral part of the Cities stormwater management system.

When an area is paved, or covered with a building, water runs off the property much faster than when it was in its natural state. The level of runoff discharged can result in flooding, erosion and pollution impacting all St. Charles residents, business owners and potential visitors. Flooding results in public and private funds being spent on emergency services, clean-up and repairs. Erosion causes the loss of property and can threaten residential structures. The cost of these events impact all regional property owners for years through loss of land, increased insurance rates and lowered

property values. Retention and detention basins provide stormwater management and water quality benefits to residents and the City of St. Charles. Urban areas rely heavily on detention and retention basins to reduce peak runoff rates associated with storms. When properly maintained, these basins can result in less damage from stormwater runoff.