The Middle Rio Grande experiences significant water losses in the reach from San Acacia to Fort Craig. While the quantity of flow loss has been defined in previous studies the relative contribution of the various mechanisms of loss have not been closely studied. It is our goal to investigate the interactions of the topography, hydrological conditions, weather, and vegetation to better define the processes that contribute to this conveyance loss. We plan to use several techniques in our research, such as water table monitoring, by using data loggers in wells, soil moisture monitoring using probes, water quality and field chemistry parameters from surface and ground waters, and vegetation surveys. We intend to deliver information to the Middle Rio Grande Conservancy District that will aid their water management decisions, in particular, what conditions lead to maximum conveyance of flow releases through the reach with minimal transmission losses.