This talk will present research that examines prime spectra of low-dimensional mixed polynomial/power series rings over one-dimensional rings. In particular, we characterize the partially ordered set of prime ideals of $R[[x]][[y]]$, where $\{f, g\}$ is a $R[[x]]$-sequence and $R$ is either a one-dimensional countable PID or an order in an algebraic number field. (Received August 27, 2008)